





सत्यमेव जयते

# Longitudinal Ageing Study in India (LASI)

## Wave-1

# INDIA REPORT



NATIONAL PROGRAMME FOR HEALTH CARE OF ELDERLY  
&  
INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES

MINISTRY OF HEALTH & FAMILY WELFARE  
GOVERNMENT OF INDIA







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Government of India  
Ministry of Health and Family Welfare

# Longitudinal Ageing Study in India (LASI)

## Wave-1

An Investigation of Health, Economic, and Social Well-being of  
India's Growing Elderly Population

## INDIA REPORT 2020



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व पृथ्वी विज्ञान मंत्री, भारत सरकार

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सबका साथ, सबका विकास, सबका विश्वास  
Sabka Saath, Sabka Vikas, Sabka Vishwas



### MESSAGE

India is currently experiencing unprecedented wave of demographic changes: increasing longevity and falling fertility have led to a dramatic increase in the population of elderly aged 60 and above, in both absolute and relative terms. In 2011 census, the 60+ population accounted for 8.6% of India's population, accounting for 103 million elderly people. Growing at around 3% annually, the number of elderly aged 60 and above will rise to 319 million in 2050. Including the pre-retirement ageing phase, the older adult population aged 45 and above will rise to over 650 million people by 2050.

Launched in 2016, the Longitudinal Ageing Study in India (LASI) is a nation-wide population based survey of scientific investigation of the health, economic, and social determinants and consequences of population ageing in India. The LASI wave 1 successfully interviewed a panel sample of 72,250 individuals aged 45 years and above and their spouses, including 31,464 elderly aged 60 years and above and 6,749 oldest-old persons aged 75 years and above. The data were collected from 35 States and Union Territories of India (excluding Sikkim).

The LASI is India's first and the world's largest ever survey that provides a longitudinal database for designing policies and programmes for the older population in the broad domains of social, health, and economic well-being. From health to demography and social and economic wellbeing, LASI provides a reservoir of scientific evidence for the country's policymakers to make informed policy decisions on the issues of health and ageing. The longitudinal data also lays the foundation for understanding the science of ageing. Taking into consideration, the health and welfare concerns of elderly, the Government has launched several programmes for elderly. The evidence from LASI will be used to further strengthen and broaden the scope of National Programme for Health Care of the Elderly. In addition, LASI will help in establishing a range of preventive and promotive health care programmes for older population and most vulnerable among them.

I compliment the entire LASI team at International Institute for Population Sciences (IIPS), the collaborating partners and Dte.GHS for successfully completing this nation-wide study. I also acknowledge with appreciation all those who have supported and contributed to the success of this important study.

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### MESSAGE

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**GOVERNMENT OF INDIA**



Population ageing, which entails an increasing share of older persons aged 60 years and above in the population, represents an unprecedented global demographic transformation, and is expected to intensify during the remainder of the twenty-first century. Although adult health and ageing is a subject that is being increasingly investigated, there are currently no comprehensive and internationally comparable national survey data in India that cover and connect the full range of topics necessary to understand the health, economic, social, and psychological aspects of the ageing process. The LASI is India's first nation-wide longitudinal ageing study designed to fill this gap.

The LASI provides a comprehensive scientific evidence base on demographics, household economic status, chronic health conditions, symptom-based health conditions, functional health, mental health (cognition and depression), biomarkers, health insurance and healthcare utilization, family and social networks, social security programmes, work and employment, retirement, satisfaction, and life expectations. The LASI has embraced state-of-the-art large-scale survey protocols and field implementation strategies with one or more of the following innovative attributes that existing studies lack: representative sample of India and its states and by socioeconomic spectrum, an expansive topical focus, harmonisation with HRS, a longitudinal design, coverage of comprehensive biomarkers, and the use of Computer Assisted Personal Interviewing(CAPI) technology for data collection, quality control, and Geographic Information System (GIS). No other survey in India collects detailed data on health and biomarkers together with information on family and social network, income, assets, and consumption.

The International Institute for Population Sciences (IIPS), Mumbai has been in the forefront of collecting population based data on health and other socio-economic dimensions of India's population for policy and programme purposes. I congratulate the entire LASI team at International Institute for Population Sciences (IIPS), collaborating partners and Dte.GHS for successfully completion of LASI Wave 1.

**(Ashwini Kumar Choubey)**







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Government of India  
Department of Health and Family Welfare  
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### Message

The demographic and the epidemiological transition in India has shifted a major share of the country's burden of disease to the older population. While infectious/parasitic diseases are still posing significant challenges to the public health system, the emerging burden of chronic and degenerative diseases are causing India to bear a double burden of disease and consequently, a significant share of the global burden of disease.

The dramatic and widespread nature of recent and ongoing demographic shifts indicate that the challenges of population-ageing that India will face are both inevitable and exist on an enormous scale. These demographic changes present complex health, social, and economic challenges to which our Country must rapidly adapt, both at present and continuing into the future. The shift in the age-structure and the rapid rise of elderly population call for robust and internationally harmonised data on ageing and health. There is an increasing need of evidence-based policies to deal with the emerging public health challenges of population ageing.

Recognizing the need for comprehensive data on health and social and economic wellbeing, the Ministry of Health and Family Welfare, launched the Longitudinal Ageing Study in India (LASI) designed to fill this data gap. LASI provides comprehensive and internationally comparable data for India and all of its States and Union Territories. I am happy that the study covers and connects the full range of topics necessary to understand the physical and mental health, economic, and social aspects of the ageing process in India.

I am happy to note that the efforts of LASI team and their partners have culminated in a national report which along with situational analysis of older adults and elderly in the country also provides a robust scientific base for policies on ageing. I congratulate the Principal Investigators Prof. P. Arokiasamy, Prof. David Bloom and Prof. Jinkook Lee and the entire LASI team at the International Institute for Population Sciences (IIPS) and the collaborating partners Harvard T. H. Chan School of Public Health and the University of Southern California, for successfully conducting this nation-wide study and coming out with this timely report. I also acknowledge with appreciation all those who have supported and contributed to the success of this important study.

Place : New Delhi

Date : 31 December 2020

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### MESSAGE

Population ageing represents an unprecedented global demographic transformation and is expected to intensify as the twenty-first century progresses. This dominant demographic trend represents a historic achievement in terms of increased longevity but at the same time offers unpredictable challenges with profound implications on society, health, and the economy. While India is being propelled to a position of international eminence, it faces three main domains of health challenges. First, India needs to deal effectively with the unfinished agenda of communicable diseases, maternal and child health, and the strengthening of health systems. Second, it needs to deal with emerging challenges such as the premature burden of non-communicable diseases (NCDs). Third, India needs to deal with globalisation-related issues while also contributing to the management and shaping of the global policy environment. The dramatic and widespread nature of the current and ongoing demographic shifts indicates that the population ageing challenges that India will face are both inevitable and exist on an enormous scale. These demographic changes present complex health, social, and economic challenges to which this heterogeneous country must rapidly adapt, both in the present and continuing into the future.

Despite several policy and programme initiatives, there is still a considerable policy vacuum in the absence of scientific evidence on India's older population. As no sufficiently broad, nationally representative dataset is currently available in India, comprehensive scientific data are needed to conduct analyses of the health, economic, and social challenges relating to population ageing and formulate mid- and long-term policies and programmes to address these challenges. Considering the void in scientific data, the Longitudinal Ageing Study in India (LASI) was launched under the aegis of MoHFW, Government of India. The LASI is a national landmark in scientific research to allow a better understanding of India's elderly health problems and population ageing processes. The LASI will play an important role of informing the design of appropriate evidence-based policies for older adults and the elderly in the country.

I appreciate the efforts of International Institute for Population Sciences (IIPS), its collaborating institutions and Dte.GHS in designing and implementing the LASI study and coming out with very relevant and important findings. I am sure, the LASI findings will facilitate the Health Ministry and the states/ UTs to further strengthen our coordinated efforts for ensuring the health, well-being and active ageing our growing elderly population.

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### MESSAGE

With approximately 1.39 billion inhabitants in 2020, India is projected to become the world's most populous country in the next few years. The demographic *vis-a-vis* the epidemiological transition in India has shifted a major share of the country's burden of disease from children to the older population. The transition from high rates to low rates in mortality and fertility that accompanied socioeconomic development also meant a shift in the leading causes of diseases and deaths, known as 'epidemiologic transition'. This is characterised by the waning of infectious and acute diseases and the emerging incidence of chronic and degenerative diseases.

The alarming population projections and the dramatic shift in age-structure call for robust and internationally harmonized data on ageing and adult health. LASI is an attempt to understand the socio-economic and health dimensions of elderly and adults in India. The main objective of the LASI is to provide a comprehensive scientific evidence base on chronic health conditions, symptom-based health conditions, functional health, mental health, biomarkers and healthcare utilization.

Morbidity and multiple chronic conditions increase with age and are associated with limited functional status, high mortality, and rise in the use of both in-patient and out-patient health care. Thus, health needs and demand for health services increases with age. In the LASI survey, detailed information was collected on hospitalisation, out-patient visits, expenditure on health care, quality of care, and health insurance coverage.

I congratulate the team at IIPS, collaborating partners and Dte.GHS officials for successfully completing the wave 1 survey. The findings from LASI will be very useful for formulating various health programmes for adults and elderly in India, as well as for monitoring the ongoing health care programmes.

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## MESSAGE

In view of the recommendations and underlying strategy of healthy ageing in the national policy, the Ministry of Health and Family Welfare (MoHFW) has launched various healthcare programmes for the elderly. Under the aegis of the MoHFW, the National Programme of Health Care for Elderly (NPHCE) aims to provide comprehensive healthcare facilities to the elderly through primary, secondary, and tertiary delivery systems. The launch of the NPHCE and other related NCD control and prevention programmes are aimed to address the healthcare requirements of elderly in the country. Another important step undertaken by the Government to improve primary healthcare is Ayushman Bharat. Ayushman Bharat was launched in 2018 as a continuum of care but through two new components: Health Wellness Centres (HWC) and Pradhan Mantri Jan Arogya Yojana (PMJAY).

The Longitudinal Ageing Study in India (LASI) was launched under the aegis of the Ministry of Health and Family Welfare (MoHFW), considering the void in scientific data on population ageing in India. The LASI is a national landmark in scientific data that will allow a better understanding of India's elderly health problems and population ageing processes and will inform the design of appropriate evidence-based policies for older adults and elderly in the country.

I am confident the information given in this report will immensely help policymakers and programme managers in planning focused policies and programmes for the health care and welfare of elderly in India. I also hope that this report will be of great help to all those who are working in the areas of health and ageing in improving the health, social and economic wellbeing of India's growing elderly population.

I appreciate the LASI teams at the International Institute for Population Sciences, collaborating institutions and Dte.GHS for successfully completing the LASI, Wave 1 study.

  
(VISHAL CHAUHAN)





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**FOREWORD**

IIPS is delighted to bring out the report on the first wave of the Longitudinal Ageing Study in India (LASI). LASI will, undoubtedly, be a major source of information on issues of elderly in the country. The study is designed in line with the Health and Retirement Studies (HRS) carried out across many countries. The internationally harmonized data will allow easy cross-national and cross-cultural comparison. LASI provides data on number of important topics such as health economics of ageing, social and family dynamics, and social security coverage, views of old adults in the light of changing social, economic and familial circumstances.

An important feature of LASI is its innovative method and internationally comparable measures of health, including direct biological measures (Biomarkers). The biomarker measures without self-reporting bias provide true levels of disease prevalence as well as the extent of undiagnosed chronic diseases in the country. The data, thus, enable in-depth analysis on social and economic stratification of health status and services across population groups. I am confident that the evidence from LASI will lead to expansion of the existing programmes, and contribute to launching of landmark national and state-level policies in India. Since the major part of the data collection was in 2017, some of the household indicators like clean cooking fuel and toilet facilities may not reflect the significant progress made during the last few years.

LASI is going to be an important national resource for policy makers and researchers across wide range of disciplines. This is a comprehensive study designed to simultaneously generate data, raise awareness on health issues of the elderly population and inform public policies in the country. It provides an immense opportunity to examine how policies and institutions influence health care utilization and health outcomes among the elderly more than 60 years.

I thankfully acknowledge the support of the Ministry of Health and Family Welfare, Government of India for the successful completion of LASI wave 1. The support received from NIA and UNFPA India is also gratefully acknowledged. I congratulate the entire LASI team at IIPS, HSPH and USC on the successful completion of LASI Wave 1. I am sure, the findings of this study will immensely be useful to scholars and policy makers and all those interested in enhancing the wellbeing of elderly in the country.

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---

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The successful completion of LASI Wave 1 is the outcome of national and international collaboration, efforts and involvement of numerous organizations and individuals at different stages of the study. At the outset, we are grateful to the Ministry of Health and Family Welfare, Govt. of India, for sponsoring this important study. We wish to place on record our sincere thanks to Shri. Rajesh Bhushan, Secretary, Ministry of Health and Family Welfare and the former secretaries of the department for their guidance, support and contribution to the survey.

The National Institute on Aging (NIA/NIH) fully funded the LASI pilot study in 2010 and partially supported the LASI, wave 1. We are thankful to NIA/NIH for financially supporting the study and a special word of mention goes to late Dr. Richard Suzman for his initiative and interest in LASI. The financial support from UNPFA India in the preparatory stage of LASI Wave 1 was very helpful and we are thankful to them.

The Central Programme Division NPHCE of Dte.GHS & MoHFW provided continuous support and guidance from the proposal stage till the successful completion LASI Wave 1. We acknowledge with gratitude the joint secretaries of NPHCE Mr. Nilambuj Sharan and Mr. Vishal Chauhan. The Directorate General Health Services gave immense support in all stages of LASI wave-1 especially Dr. Inder Parkash, DDG (PH) and Dr. Gowri Nambiar Sengupta, Assistant Director General (NPHCE & Public Health).

We acknowledge the immense contributions of the members of the International Technical Advisory Committee of LASI chaired by Prof. James Smith and the National Technical Advisory Committee chaired by Prof. P. M. Kulkarni for their guidance and advice over the years throughout the study. The contribution of several subject experts during LASI instrument development and national report preparation is greatly appreciated.

The Indian Council of Medical Research (ICMR) extended the necessary guidance and ethical approval for conducting the LASI. We are thankful to Regional Geriatric Centres (RGC) under the Ministry of Health and Family Welfare for their participation in the implementation of LASI biomarker component. We acknowledge the contributions of the director, faculty and staff of National AIDS Research Institute (NARI-ICMR), Pune for their support in the biomarker component of LASI: storage and testing of Dried Blood Spot (DBS) samples as well as the Chest Research Foundation (CRF), Pune for their technical support in conducting lung function test using spirometry.

We would like to place on record our special thanks to Prof. K.S James, current Director and Sr. Professor, and Prof. F. Ram, the former director of the International Institute for Population Sciences for their support and guidance. The administration at IIPS, including the Registrar and Accounts Officer, extended all possible help in successfully completing this survey.



We would like to thank the Management and staff of various state level field agencies (FAs) in successfully carrying out the task of data collection, despite many hardships in the field. This acknowledgement cannot be completed without expressing our appreciation for the hard work put in by the interviewers, health investigators and supervisors in collecting and maintaining the quality of data. The credit also goes to all the survey participants who patiently spent their valuable time and cooperated with survey teams by providing extensive range of information.

Lastly, the LASI team at IIPS contributed immensely at various stages of the study. They played a major role in developing the survey instruments, manuals and protocols, training of the field staff, monitoring the data collection, data analysis and preparation of fact sheets and this report. Their hard work and dedication is gratefully acknowledged. We also acknowledge the contributions of LASI teams at the Harvard T. H. Chan School of Public Health (HSPH), the University of Southern California (USC), University of California Los Angeles (UCLA) and University of Washington.

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# ABBREVIATIONS

|           |                                                                    |
|-----------|--------------------------------------------------------------------|
| ADL       | Activities of Daily Living                                         |
| APL       | Above Poverty Line                                                 |
| AYUSH     | Ayurvedic, Yoga and Naturopathy, Unani, Siddha and Homeopathy      |
| BDS       | Batchelor of Dental Surgery                                        |
| BMI       | Body Mass Index                                                    |
| BPH       | Benign Prostatic Hyperplasia                                       |
| BPL       | Below Poverty Line                                                 |
| CAPI      | Computer Assisted Personal Interviewing                            |
| CEB       | Census Enumeration Block                                           |
| CES-D     | Centre for Epidemiologic Studies Depression                        |
| CGHS      | Central Government Health Scheme                                   |
| CHD       | Coronary Heart Disease                                             |
| CHE       | Catastrophic Health Expenditure                                    |
| CIDI      | Composite International Diagnostic Interview                       |
| CIDI-SF   | Composite International Diagnostic Interview-Short Form            |
| COPD      | Chronic Obstructive Pulmonary Disease                              |
| CVD       | Cardiovascular Diseases                                            |
| DBS       | Dried Blood Spot                                                   |
| ESIS      | Employee State Insurance Scheme                                    |
| FEV1      | Forced Expired Volume in 1 Second                                  |
| FVC       | Forced Vital Capacity                                              |
| GATS      | Global Adult Tobacco Survey                                        |
| GERD      | Gastroesophageal Reflux Disease                                    |
| Hb/ HbA1c | Haemoglobin/ Haemoglobin A1C (Glycosylated haemoglobin)            |
| HH        | Household                                                          |
| HIV       | Human Immunodeficiency Virus                                       |
| HRS       | Health and Retirement Study                                        |
| hs-CRP    | High sensitivity C-Reactive Protein                                |
| HT        | Hypertension                                                       |
| IADL      | Instrumental Activities of Daily Living                            |
| ICD       | International Classification of Diseases                           |
| ICF       | International Classification of Functioning, Disability and Health |
| IGNOAPS   | Indira Gandhi National Old Age Pension Scheme                      |
| IGNWPS    | Indira Gandhi National Widow Pension Scheme                        |
| IHD       | Ischemic Heart Disease                                             |
| LASI      | Longitudinal Ageing Study in India                                 |
| LEH       | LASI age-eligible household                                        |
| MBBS      | Batchelor of Medicine and Batchelor of Surgery                     |
| MD        | Doctor of Medicine                                                 |
| MPCE      | Monthly Per Capita Expenditure                                     |
| NCD       | National Classification of Diseases                                |
| NCD       | Non-communicable diseases                                          |
| NFHS      | National Family Health Survey                                      |
| NGO       | Non-Governmental Organization                                      |
| NOAPS     | National Old Age Pension Scheme                                    |
| NSAP      | National Social Assistance Programme                               |
| NSS       | National Sample Survey                                             |
| OBC       | Other Backward Class                                               |
| OCD       | Obsessive–Compulsive Disorder                                      |
| OOP       | Out-of-pocket expenditure                                          |
| PSU       | Primary Sampling Units                                             |
| RA        | Rheumatism                                                         |
| RSBY      | Rashtriya Swasthya Bima Yojana                                     |
| RWA       | Resident Welfare Association                                       |
| SC        | Scheduled Caste                                                    |
| SHG       | Self Help Group                                                    |
| SRH       | Self-Rated Health                                                  |

---

|     |                           |
|-----|---------------------------|
| SSU | Secondary Sampling Units  |
| ST  | Scheduled Tribe           |
| TB  | Tuberculosis              |
| ToT | Training of Trainers      |
| UN  | United Nations            |
| UT  | Union Territory           |
| UTI | Urinary Tract Infection   |
| WHO | World Health Organisation |
| WHR | Waist to Hip Ratio        |

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# 1. INTRODUCTION

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## 1.1 GLOBAL TRENDS IN POPULATION AGEING

Population ageing, which entails an increasing share of elderly persons in a population, represents an unprecedented global demographic transformation and is expected to intensify as the twenty-first century progresses. Ageing results from demographic transition, a process whereby reductions in mortality are followed by reductions in fertility. This process then leads to a relative reduction in the proportion of children and an increase in the share of people in the main working age and older person groups in the population. Globally, the number of elderly (age 60 and above) are projected to exceed the number of children (under the age of 14) for the first time in 2047 and are expected to outnumber children under the age of ten by 2030 (UN World Population Ageing, 2013 & 2017). This dominant demographic trend represents a historic achievement in terms of increased longevity but at the same time offers unpredictable challenges with profound implications on society, health, and the economy.

Individuals are living longer than ever before. The global life expectancy at birth for males and females reached 68.5 years and 73.3 years between 2010 and 2015; up from 45.5 and 48.5, respectively, since 1950. On the one hand, the UN Population Division (2019) projects global life expectancy to reach 74.5 years for males and 79.1 years for females by 2050. On the other hand, the global fertility rate dropped to 2.7 children per woman in 2000 from 5.5 in 1950, which is further expected to decrease to 2.1 by 2050. As a result, the contours of the global population have undergone marked changes over the past several decades. The numbers of people aged 65 years or above are projected to be more than double globally, between the years 2019 and 2050, while the number of persons under the age of 25 are projected during the same period to reach a peak and then decline (UN Population Prospects, 2019). Moreover, the global share of elderly persons is expected to rise from 13.4% in 2020 to 21.3% by 2050.

Presently, about two-thirds of the world's elderly persons live in developing countries. As the elderly populations in the less developed regions are growing faster than in more developed regions, projections show that elderly persons will be increasingly concentrated in the less developed regions of the world; in 2050, nearly 8 in 10 of the world's elderly persons are expected to be living in developing regions (UN, 2017). Furthermore, populations in the developing regions will experience faster ageing transitions, significantly ahead of the institutional readiness to cope with the growing numbers of elderly and their disproportionate needs for health and social services.

- While global ageing can be seen as a symbol of medical, social, and economic advances, it has led to health, social, and economic consequences over the past half-century.
- Population ageing represents major policy challenges and therefore threatens to topple existing insurance and pension systems and create health system overload; thus, it calls for a review of existing models of healthcare, familial, and social support.
- In the 21<sup>st</sup> century, the phenomenon of global ageing has the potential to fundamentally alter disease burdens, the health care system and its costs, family and social structure, economies and trade, and human migration patterns.

Although some governments have started planning for the well-being of their ageing societies. There remains an urgent need to raise awareness about the significance of population ageing and its potentially dramatic implications. Gathering robust and internationally harmonised scientific data will be vital to prepare financially, socially, and medically for the world's rapidly ageing population.

## 1.2 POPULATION AGEING IN INDIA

With roughly 1.36 billion inhabitants in 2019, India is projected to become the world's most populous country within the next six years. In the 2011 census, people aged 60 and above accounted for 8.6% of the total Indian population, numbering 103 million elderly persons (Table 1.1). The share of the elderly population is projected to further rise to 19.5% (319 million) by 2050 (UN Population Division, 2019).

Including the pre-retirement phase, the older adult population (45 years and above) will rise to constitute over 40% of the population of India or 655 million people by 2050. The number of people aged 75 years and above is expected to increase by 340% between 2011 and 2050. These trends, largely a result of fertility decline and increasing life expectancy, indicate increasing future vulnerabilities such as increasing old-age dependency, reduced levels of potential support, and more older parents to support for the elderly persons. Overall, little is known about the total disease burden, public health needs, or economic and social implications of the growth of the elderly population in India.

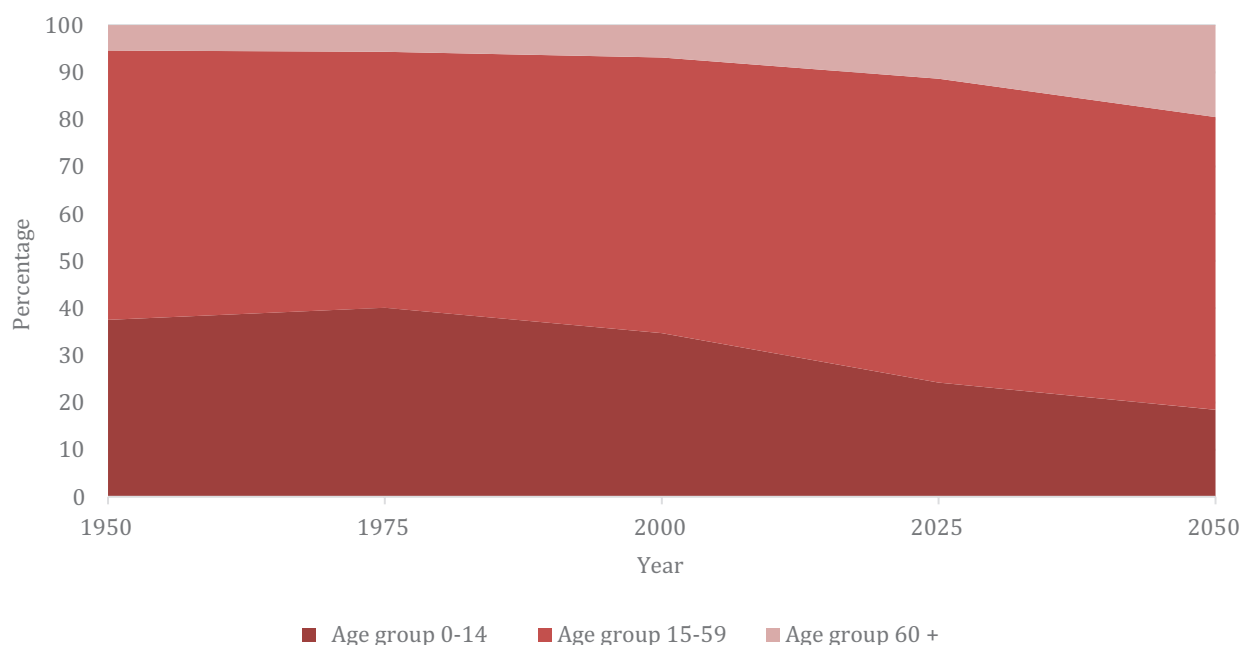
**Table 1.1 Trends in population indicators, India, 1981-2011**

|                                                  | 1981 | 1991 | 2001  | 2011  |
|--------------------------------------------------|------|------|-------|-------|
| Population size (millions)                       | 683  | 846  | 1028  | 1210  |
| Decadal growth of population                     | 24.7 | 23.7 | 21.54 | 17.7  |
| Elderly population (age 60 and above) (millions) | 44   | 57   | 77    | 103   |
| Infant mortality rate per 1000                   | 110  | 80   | 66    | 47*   |
| Crude birth rate per 1000                        | 33.9 | 29.5 | 25.4  | 22.1* |
| Crude death rate per 1000                        | 12.5 | 9.8  | 8.4   | 7.2*  |

\*refers to the year 2010

Source: Office of Registrar General of India, Census of India 2011, Office of the Registrar General of India, Sample Registration System (2009, 2011, 2012-16, 2017), Office of Registrar General of India, New Delhi

**Figure 1.1: Population by broad age group, India, 1950-2050**

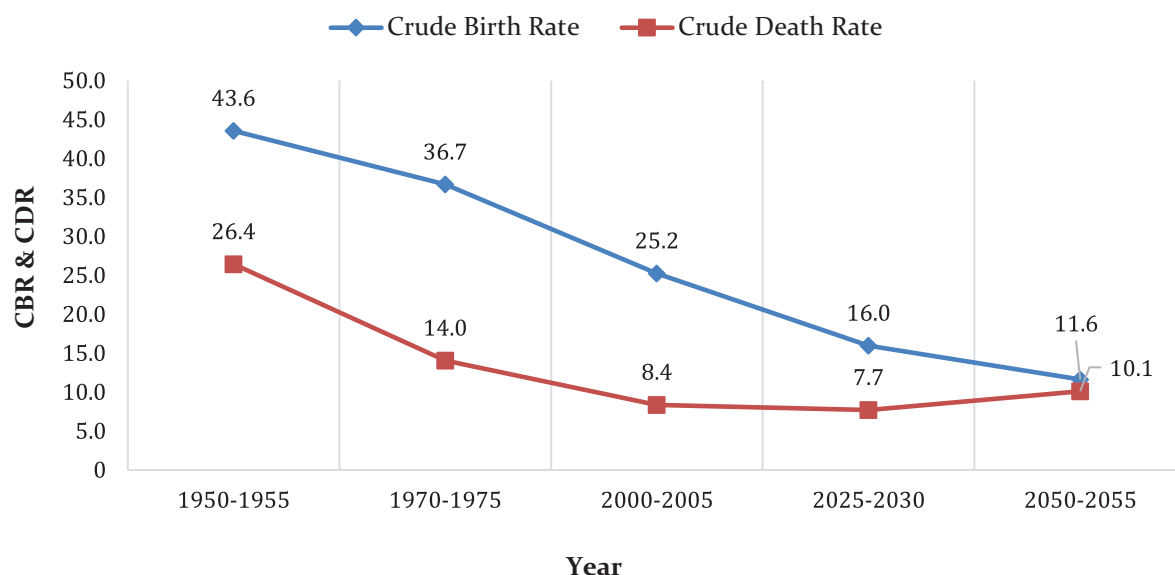


Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York



The trends in the distribution of India's population in the three broad age groups show that the proportion of children population is expected to decline to 18.5% by 2050 down from 37.5% in 1950 and 34.7% in 2000. The proportion of the working-age population (15-59 years), which was at 57% in 1950 and 58.4% in 2000, is projected to rise to 62% by 2050 (Figure 1.1). The median age of the population, which was at 21.3 years in 1950, expected to rise to 38.1 years in 2050. The crude birth rate per 1000 of the population of India, which was 20.4 in 2011, is expected to reduce to 11.8 by 2050. The crude death rate per 1000 of the population has recorded a sharp decline from 27.6 in 1950 to 6.3 in 2017, with an expected projection of an increase in the rate to 7.3 in 2020. Figure 1.2 shows how these changes are driven by the steady pace of demographic transition in India.

**Figure 1.2: Trends in crude birth and death rate, India, 1950-2050**



Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York

The ageing index, which refers to the number of elderly persons aged 65 years and above per 100 children aged 0–14 years, which was 8.4 in 1950, is expected to increase to 74.5 by 2050. Due to the sharp 'decline in the child dependency ratio', the total dependency ratio is expected to decrease to 61.2 by 2050 from 75.1 in 1950; whereas, the 'old-age dependency ratio' is expected to witness a steep rise from 9.5 in 1950 to 31.5 by 2050. In 1950, the ageing index was 8.4 elderly persons (aged 65 years and above) for every 100 children and is further expected to become 74.5 elderly persons for every 100 children by 2050. The trends across all the ageing indicators signify a rapid pace of ageing in the country in the coming decades.

While increasing trends in population ageing are observed in all Indian states, the pace and extent are not uniform. State-wise ageing indicators show significant regional variations (Table 1.2 and Map 1.1). The demographically advanced south Indian states of Kerala (12.6), Goa (11.2), Tamil Nadu (10.4), Himachal Pradesh (10.2), Punjab (10.3), Maharashtra (9.9), Andhra Pradesh (9.8), Karnataka (9.5), and Odisha (9.5) are home to greater proportions of older population than the national average. Due to higher fertility rates, the states of Uttar Pradesh (2.7), Bihar (3.4), and Jharkhand (2.6) still have a higher share of population aged 0–14 years. The diametrically opposite trends in total fertility rate and life expectancy at the national level is shown in Figure 1.3. While life expectancy rates at birth are comparatively higher in the states of Delhi, Himachal Pradesh, Punjab, Jammu & Kashmir, Kerala, and Maharashtra, the demographically lagging northern states of India like Uttar Pradesh (72.7), Bihar (85.5), and Jharkhand (71.4) have higher young dependency ratios than other states.

**Table 1.2 Population indicators by states/Union Territories, India, 2011**

| States/UTs                | Population (2011)    | Annual population growth rate (2001-2011) | Crude birth rate (2017) | Total fertility rate (2016) | Population % 60+ (2011) | Life expectancy (2012-2016) | Ageing Index (2011) | Total dependency ratio (2011) |
|---------------------------|----------------------|-------------------------------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------------|-------------------------------|
| <b>India</b>              | <b>1,210,854,977</b> | <b>1.8</b>                                | <b>20.2</b>             | <b>2.3</b>                  | <b>8.6</b>              | <b>68.7</b>                 | <b>17.8</b>         | <b>60.1</b>                   |
| Chandigarh                | 1,055,450            | 1.7                                       | 13.5                    | 1.6                         | 6.4                     | NA                          | 15.5                | 42.7                          |
| Delhi                     | 16,787,941           | 2.1                                       | 15.2                    | 1.8                         | 6.8                     | 74.2                        | 14.8                | 47.4                          |
| Haryana                   | 25,351,462           | 1.9                                       | 20.5                    | 2.1                         | 8.7                     | 69.4                        | 17.9                | 56.9                          |
| Himachal Pradesh          | 6,864,602            | 1.3                                       | 15.8                    | 1.9                         | 10.2                    | 72.3                        | 26.6                | 51.3                          |
| Jammu & Kashmir           | 12,541,302           | 2.4                                       | 15.4                    | 2                           | 7.4                     | 73.5                        | 14.1                | 65.7                          |
| Punjab                    | 27,743,338           | 1.4                                       | 14.9                    | 1.6                         | 10.3                    | 72.5                        | 26.4                | 50.4                          |
| Rajasthan                 | 68,548,437           | 2.1                                       | 24.1                    | 2.4                         | 7.5                     | 68.3                        | 14.1                | 68.6                          |
| Uttarakhand               | 10,086,292           | 2                                         | 17.3                    | 2.1                         | 8.9                     | 71.5                        | 18.3                | 61.3                          |
| Chhattisgarh              | 25,545,198           | 2.3                                       | 22.7                    | 2.2                         | 7.8                     | 65.2                        | 15.4                | 61.6                          |
| Madhya Pradesh            | 72,626,809           | 2                                         | 24.8                    | 2.3                         | 7.9                     | 65.4                        | 15.3                | 65.9                          |
| Uttar Pradesh             | 199,812,341          | 2                                         | 25.9                    | 2.7                         | 7.7                     | 64.8                        | 13.7                | 72.7                          |
| Bihar                     | 104,099,452          | 2.5                                       | 26.4                    | 3.4                         | 7.4                     | 68.7                        | 11.3                | 85.5                          |
| Jharkhand                 | 32,988,134           | 2.2                                       | 22.7                    | 2.6                         | 7.1                     | 67.9                        | 11.8                | 71.4                          |
| Odisha                    | 41,974,218           | 1.4                                       | 18.3                    | 2.1                         | 9.5                     | 67.6                        | 20.8                | 56.6                          |
| West Bengal               | 91,276,115           | 1.4                                       | 15.2                    | 1.8                         | 8.5                     | 70.8                        | 20.2                | 50.7                          |
| Arunachal Pradesh         | 1,383,727            | 2.6                                       | 18.3                    | 2.1                         | 4.6                     | NA                          | 7.7                 | 64.4                          |
| Assam                     | 31,205,576           | 1.7                                       | 21.2                    | 2.2                         | 6.7                     | 65.5                        | 12.7                | 61.3                          |
| Manipur                   | 2,855,794            | 2.5                                       | 14.6                    | 2.6                         | 7.0                     | NA                          | 14.9                | 55.4                          |
| Meghalaya                 | 2,966,889            | 2.8                                       | 22.8                    | 3                           | 4.7                     | NA                          | 7.5                 | 77.0                          |
| Mizoram                   | 1,097,206            | 2.3                                       | 15                      | 2.3                         | 6.3                     | NA                          | 12.4                | 59.6                          |
| Nagaland                  | 1,978,502            | (-)0.1                                    | 13.5                    | 2.7                         | 5.2                     | NA                          | 9.8                 | 62.3                          |
| Sikkim                    | 610,577              | 1.3                                       | 16.4                    | 1.2                         | 6.7                     | NA                          | 16.4                | 48.0                          |
| Tripura                   | 3,673,917            | 1.5                                       | 13                      | 1.7                         | 7.9                     | NA                          | 18.9                | 51.2                          |
| Dadra & Nagar Haveli      | 343,709              | 5.6                                       | 23.6                    | 2.3                         | 4.0                     | NA                          | 7.5                 | 52.3                          |
| Daman & Diu               | 243,247              | 5.4                                       | 20.2                    | 1.7                         | 4.7                     | NA                          | 12.8                | 35.1                          |
| Goa                       | 1,458,545            | 0.8                                       | 12.5                    | 1.7                         | 11.2                    | NA                          | 32.2                | 43.1                          |
| Gujarat                   | 60,439,692           | 1.9                                       | 19.9                    | 2                           | 7.9                     | 69.5                        | 17.5                | 54.0                          |
| Maharashtra               | 112,374,333          | 1.6                                       | 15.7                    | 1.9                         | 9.9                     | 72.2                        | 25                  | 52.7                          |
| Andaman & Nicobar Islands | 112,374,333          | 0.7                                       | 11.4                    | 1.4                         | 0.0                     | NA                          | 16.2                | 41.1                          |
| Andhra Pradesh*           | 84,580,777           | 1.1                                       | 16.2                    | 1.8                         | 9.8                     | 69.6                        | 23.3                | 50.0                          |
| Karnataka                 | 61,095,297           | 1.6                                       | 17.4                    | 1.8                         | 9.5                     | 69.1                        | 23.3                | 50.4                          |
| Kerala                    | 33,406,061           | 0.5                                       | 14.2                    | 1.6                         | 12.6                    | 75.1                        | 35.5                | 49.7                          |
| Lakshadweep               | 64,473               | 0.6                                       | 15                      | 1.8                         | 8.2                     | NA                          | 19.7                | 46.2                          |
| Puducherry                | 1,247,953            | 2.8                                       | 13.2                    | 1.7                         | 9.7                     | NA                          | 25.7                | 45.3                          |
| Tamil Nadu                | 72,147,030           | 1.6                                       | 14.9                    | 1.7                         | 10.4                    | 71.4                        | 27.8                | 45.7                          |
| Telangana                 |                      |                                           | 17.2                    | 1.8                         |                         |                             |                     |                               |

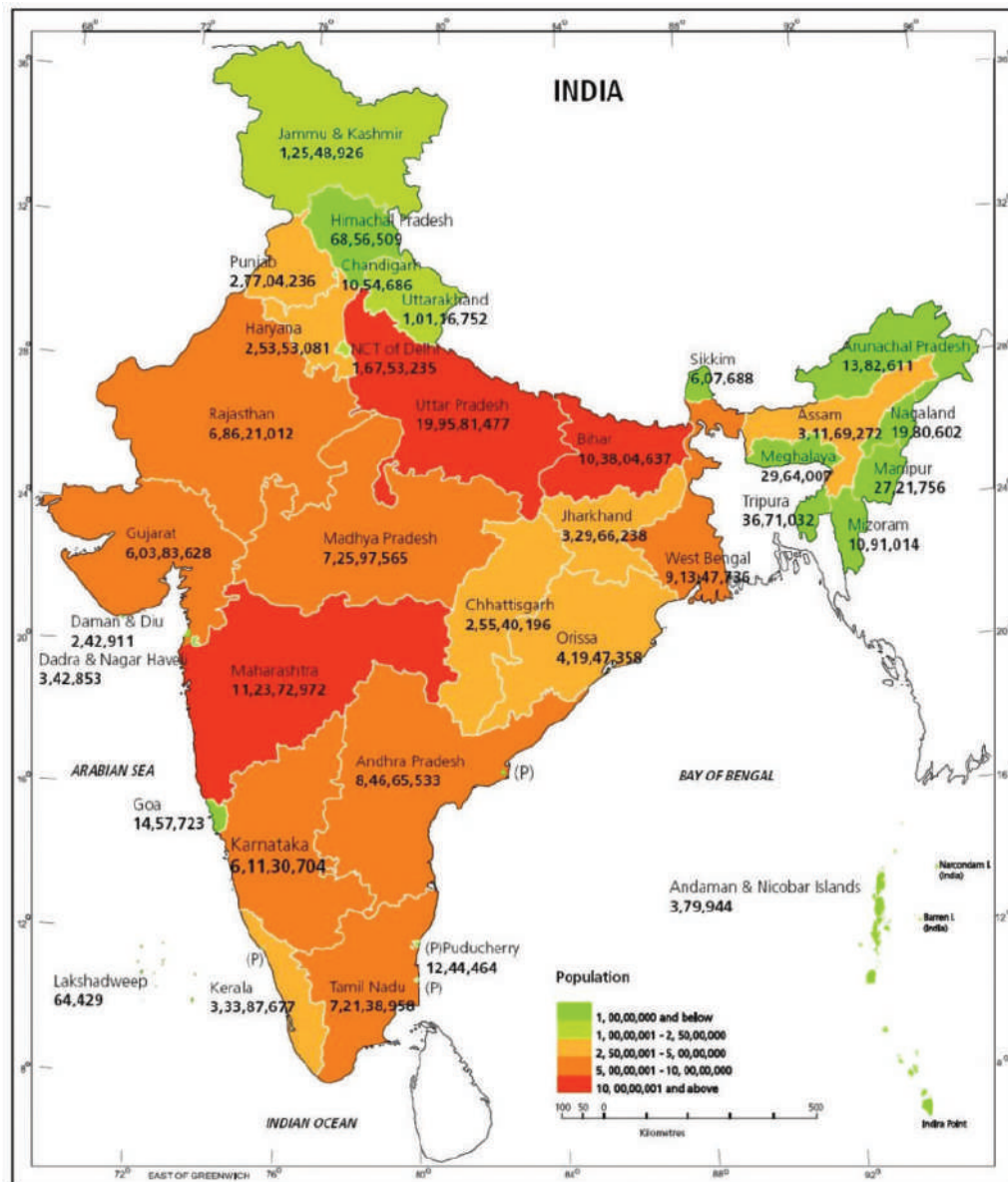
Note: 1. Ageing index refers to the number of persons aged 65 years and above for every 100 children.

2. The total dependency ratio refers to the number of persons aged 0-14 and 60 and above per 100 persons in the age range of 15-59 years. The old-age dependency ratio is defined as the number of persons aged 60 and above per 100 persons in the age range of 15-59 years. The child dependency ratio refers to the number of children aged 0-14 years per 100 persons in the age range of 15-59 years.

3. Andhra Pradesh\* includes Telangana.

Source: Office of Registrar General of India, Census of India 2011, New Delhi, Office of the Registrar General of India, Sample Registration System (2012-16) New Delhi, International Institute for Population Sciences. National Family Health Survey-4 (2015-16), Mumbai

**Map 1.1: Population size of the states of India, 2011**



The rapid rise in India's elderly population coupled with changing family structures and limited social provisions presents policymakers with pressing economic, health, and social challenges. Several forces are driving India's population growth and the changing age structure that includes an upward trend in life expectancy. For example, while an Indian born in 1950 could expect to live for 36 years; whereas today, the life expectancy at birth in India has nearly doubled to 69 years. By 2050, the life expectancy in India is projected to increase to 75 years. At the same time, the total fertility rate has declined from 5.9 in 1950 to 3.3 in 2020 and will further decline to 1.8 by 2050 (Figure 1.3). These trends reflect significant declines in infant and adult mortality rates and improvements in survival rates across all ages. As a result, India's population will rise from 1.36 billion today to an estimated 1.7 billion by 2050, with a significant number of elderly in the population.

While India is being propelled to a position of international eminence, it faces three main domains of health challenges. First, India needs to deal effectively with the unfinished agenda of communicable diseases, maternal and child health, and the strengthening of health systems. Second, it needs to deal with emerging challenges such as the premature burden of non-communicable diseases (NCDs). Third, India needs to deal with globalisation-related issues while also contributing to the management and shaping of the global policy environment.

However, out of pocket expenditures at the point of health service account for more than 70% of health expenditure, leading to health vulnerability in the older population. India is currently developing policies and establishing health care and social security programmes to support a rapidly ageing population. With India having a decentralised policy system, many of these programmes are to be implemented at the state level.

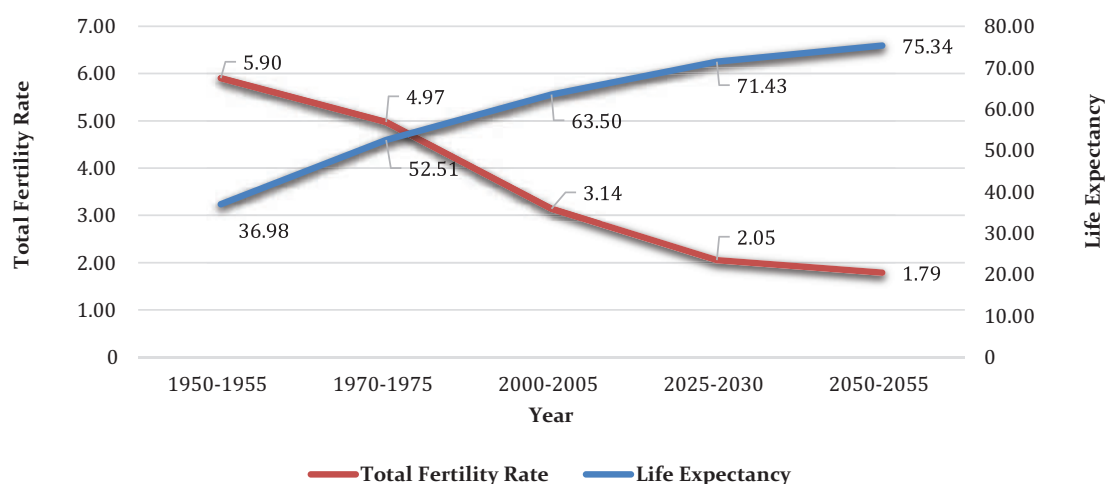
### 1.3 DEMOGRAPHY OF AGEING IN INDIA

India is currently undergoing an unprecedented wave of demographic changes. While increasing longevity and falling fertility have resulted in a ‘demographic dividend’, they have also led to a dramatic increase in the population of elderly age 60 years and above, in absolute and relative terms. The proportion of the ‘oldest old’, which refers to people who are at least 80 years of age, has more than doubled over the past 65 years. Concurrently, with increases in the proportion of older people, the old-age dependency ratio is expected to increase at a rapid pace in the coming years. The old-age dependency ratio refers to the number of persons aged 60 years and above per 100 persons in the age group of 15-59 years. The UN Population Division projects the old-age dependency ratio to increase from the 11.7 in 2000. to 31.5 by 2050.

Accompanying the issue of population ageing is the increasing feminisation of the older age group, which brings forth a unique set of issues to contend. Although the average life expectancy has increased dramatically in India, it has not risen equally for males and females. While women’s life expectancy at birth has long exceeded that of men, as is generally the case globally, the life expectancy gender gap has been widening in India. Indian women’s life expectancy at 60 years of age exceeded that of men by 0.7 years in 1970-75 and almost doubled (1.2 years) between 2010-2015, and is projected to reach 2 years by 2045-2050 (UN Population Division, 2019). This growing longevity gap between the sexes implies that India’s older adult population is increasingly female. Females often have different needs and issues than their male counterparts which necessitates different policy responses.

The elderly population is not a homogenous group, especially in a diverse society like India. The concerns of the young-old and oldest-old vary considerably in terms of financial security, functional incompetency, loneliness, and social and work participation. This pronounced diversity calls for a comprehensive understanding of various age cohorts within the elderly population so that appropriate measures and policies are formed well in time.

**Figure 1.3: Life expectancy and total fertility rate, India, 1950–2050**



Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York



**Table 1.3 Trends in the ageing-related indicators in India, 1950–2050**

|                                                             | 1950 | 1975  | 2000 | 2025 | 2050 |
|-------------------------------------------------------------|------|-------|------|------|------|
| Child population in age 0-14 (%)                            | 37.5 | 40.1  | 34.7 | 24.2 | 18.5 |
| Working-age population in age 15-59 (%)                     | 57.1 | 54.3  | 58.4 | 64.4 | 62.0 |
| Elderly population in age 60 and above (%)                  | 5.4  | 5.7   | 6.9  | 11.4 | 19.5 |
| Older adult population in age 45 and above (%)              | 16.2 | 16.3  | 18.4 | 28.6 | 40.0 |
| Oldest old population in age 75 and above (%)               | 0.9  | 0.9   | 1.3  | 2.3  | 5.2  |
| Median age (in years)                                       | 21.3 | 19.7  | 22.7 | 30.0 | 38.1 |
| Ageing index <sup>1</sup>                                   | 8.4  | 8.7   | 12.6 | 31.2 | 74.5 |
| Child dependency ratio <sup>2</sup>                         | 65.6 | 73.9  | 59.4 | 37.5 | 29.8 |
| Old-age dependency ratio <sup>3</sup>                       | 9.4  | 10.4  | 11.7 | 17.6 | 31.5 |
| Total dependency ratio <sup>4</sup> (CDR + ODR)             | 75.1 | 84.3  | 71.2 | 55.2 | 61.2 |
| Sex ratio of elderly population <sup>5</sup> (age 60 years) | 98.1 | 104.1 | 94.2 | 96.7 | 95.1 |
| Life expectancy at birth (in years)                         | 35.8 | 51.0  | 62.5 | 71.0 | 75.0 |
| Total fertility rate (TFR)                                  | 5.9  | 5.2   | 3.3  | 2.1  | 1.8  |

Note: 1. Ageing index refers to the number of persons aged 65 years and above for every 100 children.

2. The child dependency ratio refers to the number of children aged 0-14 years per 100 persons in the age range of 15-59 years

3. The old-age dependency ratio is defined as the number of persons aged 60 and above per 100 persons in the age range of 15-59 years

4. The total dependency ratio refers to persons age 0-14 and 60 and above per 100 persons in the age range of 15-59 years

5. Sex ratio refers to the number of females per 100 males.

Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York

### 1.3.1 Older adults

Healthy ageing is a process of developing and maintaining the functional ability that enables well-being in the older age. Healthy ageing largely depends on an individual's experiences at younger ages. Therefore, Ageing should be viewed from a life-course perspective. Older adults aged 45 years and above form an age group that represents pre-ageing and pre-retirement phases. These adults often are the carers and earners in their families. The pre-retirement age group is also significant in that it constituted about 18.4% of the total population in 2000—up from 16.2 per cent in 1950. This group is further expected to increase to 40% of India's population by 2050. As ageing is a natural and gradual process reflecting a gradual transition in the health, economic, and social status of individuals, it is vital to track these transitions. Furthermore, NCDs typically present in individuals aged 55 years or older in many developed countries, but their onset occurs in India a decade earlier (less than 45 years of age) (WHO, 2015; Seigel, Patel & Ali, 2014). Older adults age 45 and above also represent a significant part of the potential support system for the elderly population.

### 1.3.2 Elderly population

The proportion of the elderly population aged 60 years and above increased from 5.5% in 1950 to 8.6 per cent in 2011 and is further expected to further increase to 19.5% by 2050. In absolute numbers, there were 103 million elderly persons of age 60 years and above in 2011 (as per the 2011 census), and this figure is expected to increase to 319 million by 2050 according to the UN Population Division (2019). The population size in absolute numbers calls the need for immediate attention from policymakers and social scientists in the country. Population ageing has not been experienced uniformly across all the states of India. While the more developed states like Kerala, Tamil Nadu, and others in the south have experienced demographic transitions before the rest of the country, states like Uttar Pradesh and Bihar, owing to high fertility and mortality rates still have younger population age structures. The issues and concerns of the elderly in different age groups are different and the ageing experiences of the older adults in pre-ageing and pre-retirement ageing contribute toward their health and socio-economic circumstances in older ages.

### **1.3.3 The Oldest-old**

Demographically, the composition and nature of the oldest-old cohort of 75 age and above are expected to change rapidly due to societal changes and ageing processes. In India, the oldest-old represented 0.9% of the population in 1950 and 1.7% in 2011 and this proportion is further expected to rise to 5.2% by 2050. Given the improvement in the level of education and other areas of socio-economic development, the future cohort will differ from those of the present. For instance, the incidence of chronic morbidity is expected to increase, with age impacting the activities of daily living. As age is the predominant determinant of health, all the experiences and engagements of the oldest-old depend on one major factor that is health. From the perspective of the feminization of ageing, there will be a larger share of oldest-old widows than the oldest-old widowers. While due to fewer obligations, the oldest-old have relatively more free time, their social networks, however, tend to shrink with increased age. The oldest-old also experience multiple health issues and reduced functional capabilities and possess limited resources and capacities, which hinder their engagement in productive activities. Further, they exhibit increased vulnerability and reduced identity, psychological autonomy, and personal control. The longitudinal approach of the Longitudinal Ageing Study in India (LASI) is intended to assess the physiological and social transitions occurring among ageing individuals over a longer period in the country.

## **1.4 SOCIAL, ECONOMIC, AND HEALTH DIMENSIONS OF AGEING IN INDIA**

The dramatic and widespread nature of these current and ongoing demographic shifts indicates that the population ageing challenges that India will face are both inevitable and exist on an enormous scale. These demographic changes present complex health, social, and economic challenges to which this heterogeneous country must rapidly adapt, both in the present and continuing into the future. However, in the absence of adequate answers to the what, how, and when to adapt, implementing any effective policy in this vast nation will be extremely difficult.

### **1.4.1 Social dimensions of ageing in India**

The ageing transition has far-reaching social implications related to family and social networks, psycho-social behaviour, living arrangements, life satisfaction, and overall wellbeing. In India, as in many East Asian and South Asian countries, the family has traditionally served as the prime source of support for ageing adults, with sons responsible for caring for their parents. However, evidence indicates that this support system has been declining due to factors such as increased urbanisation and mobility. Elderly living alone and without spouses is an increasing phenomenon. The reasons for living without children are mainly having no children and having children who reside away due to education, work, or marriage.

In 2007, the Indian parliament passed the Maintenance and Welfare of Parents and Senior Citizens Act, which allows elderly 60 years and older are 'unable to maintain themselves' to take legal action against adult children or grandchildren who fail to provide them with basic necessities such as housing, food, clothing, and medical care. While this Act codifies the basic rights of older adults and provides a legal backbone to a faltering social order, the act is also particularly germane to vulnerable sub-populations such as widows, low-income individuals, and other adults who may be subjected to elder abuse, neglect, or ill-treatment. However, the law is difficult to enforce, contains no assurances for childless adults, and does not address what, if any, are the responsibilities of the Indian government towards its ageing citizens. Such family-centred social welfare measures must be supported by appropriate government initiatives such as a robust pension system and healthcare delivery program.

An increase in the older population will lead to an urgent need for elder care and support, at a time, in India particularly where traditional family-based care is becoming less the norm than in the past (Arokiasamy, Bloom, Lee, Feeney & Ozolins, 2012). In this regard, understanding the family structure and living arrangements of the elderly across various important categories like age, sex, marital status, educational level, wealth quintile, rural/urban residence, religion, caste, health status, and social benefits is important. The co-residential family living arrangement is still the dominant type of living arrangement in India. However, the elderly living alone or living only with a spouse is an increasing trend, particularly in urban areas. Traditionally, the institution of family takes care of the well-being of the older persons, and the elderly in turn contribute to the household and family through informal care. With changing socio-economic milieu, India is experiencing a breakdown in the traditional extended family structure, resulting in changes in the living arrangements and social structure and thus, weakening the elderly's social support system. Studies have shown that there are more elderly women than men who live alone, and that widowhood, along with poor physical and functional health and financial insecurity, increases their vulnerability multifold. This situational analysis of the elderly calls the need for better external measures of support for the elderly through government schemes and programmes.

One of the major challenges posed by population ageing is how we might add life to the growing number of years in later life. Enhancing the social participation of older adults is a critical factor in achieving the goals of successful ageing. Such participative perspective is indeed present in the current ageing discourse—the more active the elderly are, the more they contribute to society (WHO, 1996). However, the social participation of the elderly has not yet been a focus of ageing discourse in India. Social participation among the elderly tends to increase with age as ageing Indians stop working for pay, are active outside the home, and participate in broader civic and social networks (Arokiasamy, Bloom, Lee, Feeney & Ozolins, 2012). A suitable social and physical environment is thus a requisite for enhancing the participation of the elderly in society, especially in the older ages.

Life satisfaction is an important psychosocial measure for the wellbeing of individuals. Individuals in older ages derive satisfaction from various factors such as closeness to family, qualitative and quantitative aspects of social support, employment status, and participation in volunteer work. In the Indian context, religiosity tends to increase with age, signifying life satisfaction through religious and spiritual engagement (Dharma). Research has highlighted certain variables that are consistently associated with life satisfaction, such as health, socio-economic status, education, financial satisfaction (also in Chou & Chi, 1999), and social integration (see Gray, Ventis, & Hayslip, 1992). Nonetheless, the determinants of life satisfaction are still inconclusive in the Indian context.

### ***1.4.2 Economics of ageing in India***

Global population ageing presents unprecedented challenges, which include a shifting disease burden, increased expenditure on health and long-term care, labour force shortages, public dissaving, and old-age income insecurity (Bloom, Canning & Lubet, 2017). The increased burden of healthcare, decreased labour supply, and increased need for social protection may potentially slow economic growth. Furthermore, prolonged post-retirement years can strain the pension system and personal saving capacities of individuals, implying that the older adults will need to depend on the family and the state to finance their consumption. Thus, population ageing may contribute towards economies being required to repay the 'demographic dividend' in the forms of reduced labour supply, increased spending on health and long-term care, and capital de-accumulation as the elderly seek resources to finance their consumption in retirement (Bloom, Canning & Lubet, 2017). The challenges arising from population ageing are more complex for developing countries like India, wherein a longevity economy is yet to be considered positive and wherein third careers, senior citizen universities, and lifelong learning are still uncommon.

In most of the developing countries, population ageing is taking place before these countries have grown wealthy—a pattern distinct from today’s developed countries (Bloom & Eggleston, 2014). Moreover, in the Indian context, financial security in older ages affects social prestige and impacts the elderly’s decision-making capabilities. With poor social security measures and a weak pension system providing meagre pension, a major proportion of elderly live in poverty. Such poverty-driven financial insecurities limit the healthcare utilisation capacities for the elderly, leaving a gap in health service provision.

The average household size in India has been decreasing over the past few decades owing to varying factors in urban and rural areas. In the bigger cities, the traditional joint family system has been gradually disintegrating partly due to the younger generation’s living arrangement preferences. In small towns and rural areas, while living arrangement preferences might not have changed as much, children are required to move away for educational and job opportunities. Such transitions have major economic implications for India’s elderly population, for they can no longer take for granted the familial and economic support that they provided for their parents’ generation. Meanwhile, employment opportunities decline as age advances and the official retirement age in many public sector organisations remains around 57–62. Furthermore, the formal sector workforce constitutes only a small proportion of the working population; a majority of India’s working population are engaged in the unorganized sector, wherein there is no social security provision. Informal sector employees have no fixed retirement age or system and thus work many years late into their old age.

A major proportion of elderly persons are not covered under old-age pension schemes and many others are ineligible. This creates a major gap in universal coverage and the utilization of social security measures in India. Furthermore, the amount of pension provided under old-age pension schemes is meagre in comparison to the financial needs of the elderly. As there is a lack of scientific literature on the dynamics of work and ageing in the country, there is a need to assess the working conditions, nature of work, retirement and benefits, and other issues pertaining to the elderly labour force in India.

### ***1.4.3 Health dimensions of ageing in India***

The demographic vis-a-vis the epidemiological transition in India has shifted a major share of the country’s burden of disease to the older population. The transition from high rates to low rates in mortality and fertility that accompanied socioeconomic development also meant a shift in the leading causes of diseases and deaths, known as ‘epidemiologic transition’. This is characterised by the waning of infectious and acute diseases and the emerging incidence of chronic and degenerative diseases. However, infectious/parasitic diseases still pose significant challenges to the public health system, causing India to bear a double burden of disease and consequently a significant share of the global burden of disease (Arokiasamy, 2018). Of the top ten individual causes of death in India in 2016, deaths due to NCDs increased between 1990 and 2016; the all-age death rate increased significantly for ischaemic heart disease (54.5%), diabetes (130.8%), and chronic kidney disease (32.7%) (Dandona et al., 2017). The rise in the proportion of disability-adjusted life years (DALYs) due to non-communicable diseases also confirmed that NCDs and mortality are more prevalent among older adults than in the general population. NCDs exceeded 50% in the 30–34 age group and were highest at 78.8% in the 65–69 age group. The disease categories causing 5% or more of total DALYs in India in 2016 were cardiovascular diseases (14.1%); diarrhoea, lower respiratory, and other common infectious diseases (12.7%); neonatal disorders (7.9%); chronic respiratory diseases (6.4%); diabetes, urogenital, and endocrine diseases (5.6%); mental and substance abuse disorders (5.6%); unintentional injuries (5.4%); and neoplasms (5%). The DALY rate between 1990 and 2016 was the highest for diseases such as diabetes (80.0%), ischaemic heart disease (33.9%), and sense organ diseases (mainly vision and hearing loss disorders; 21.7%) (ibid). However, the prevalence of mental illness among older adults may be higher than the reported figures, due to the social stigma and lack of trained mental health professionals. The burden of mental illness in India is pervasive in nature, especially for older adults living in distressed socio-economic conditions.



Overall, diabetes; urogenital, blood, and endocrine disease; neurological disorders; chronic respiratory diseases; cardiovascular diseases, and other non-communicable diseases are much higher among the elderly than the younger older adults. Furthermore, as people age, they are more likely to experience multimorbidity, i.e., the presence of multiple chronic conditions at the same time. The presence of multimorbidities further complicates the management of NCDs among the elderly. According to the WHO's Study on Global Ageing and Adult Health (SAGE) in India, while 60.7 % of respondents aged 70 and above reported more than one chronic condition, only 12.3 % of respondents between 18 and 49 years of age reported the same in comparison (Arokiasamy et al. 2015). Tobacco use, obesity, physical inactivity, and alcohol consumption also constitute major risk factors among the elderly, with obesity rising among older adults in India. According to LASI Pilot (2010), in total, 69% of the respondents reported undertaking no physical exercise. The lack of exercise increased with age and was significantly more prevalent among females than males (Arokiasamy, Bloom, Lee, Feeney & Ozolins, 2012). This finding is consistent with the anthropometric data gathered in the LASI pilot study, which showed 29% of female and 20% of male respondents to have BMIs of 25 or above.

The extent of the human and social resources and opportunities available to older persons will be heavily dependent on one key characteristic—health—since good health adds life to longevity. However, if these added years are dominated by declines in physical and mental capacities, the implications may be much more negative. WHO has proposed a conceptual model of 'Healthy Ageing', which, instead of focusing on the absence of disease, focuses on the physical and mental capabilities-based approach. The approach looks to build and maintain the functional ability of older people to be and to do things that they have reason to value. This functional ability is determined by the intrinsic capacity of the individuals, the environments in which they live, and the interaction between the individuals and these environments (WHO, 2015).

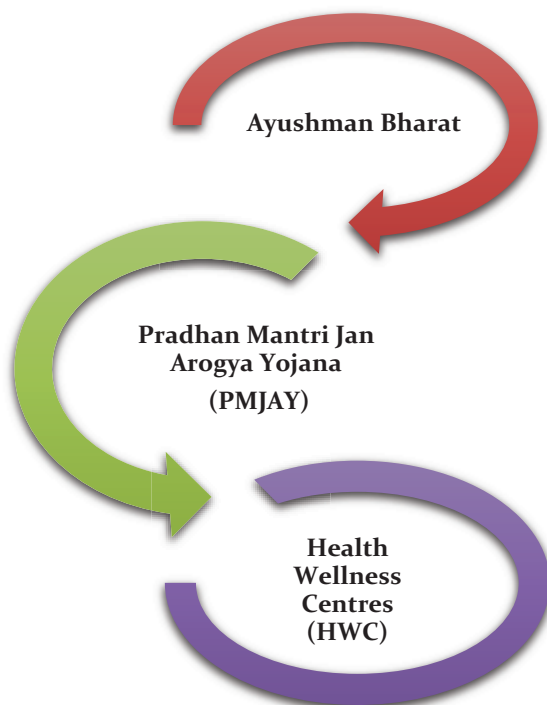
While increased longevity indicates impressive socio-economic development, the demand for holistic healthcare also tends to grow, putting an increased burden on the resources of family, society, and the state at large. Along with India's population structure, the health profile of the country is also rapidly changing. In the absence of a long-term care policy in India, regional differences in the health profile of elderly, as well as the social inequality, lack of infrastructure, and lack of availability, accessibility, and affordability of healthcare highlight India's unevenness and complexities. Unattended and undiagnosed chronic diseases, unaffordable medicines and treatments, and malnutrition are part of old age life in India (Mane, 2016). Geriatric care is still an emerging field of medicine in the country and is mainly limited to urban areas. Eldercare management has largely been a family responsibility but has become more challenging in the light of increasing trend toward nuclear families. Besides these changes, more and more elderly are surviving to the older ages as discussed above. Older adults aged 50–59 years are the new 'sandwich' generation, who also have to take care of their parents in their 80s and above (the oldest-old).

The out-of-pocket health expenditures account for more than 70% of health expenditures in India, leading to health vulnerabilities in the older population. Self-reports of diagnosed medical conditions are tied to the access to healthcare services and therefore, can mask undiagnosed conditions. In countries like India, wherein access to healthcare is limited, the prevalence of undiagnosed conditions is expected to be greater than in the developed countries. According to the World Health Organization (2011a) most countries are slow to generate and use evidence to develop an effective health response to new disease patterns and ageing populations. A better understanding of the changing relationship between health and age is crucial. Furthermore, subjective wellbeing is crucial for later life satisfaction and is an important determinant of quality of life. Thus, global efforts are required to understand and use existing knowledge about the prevention and treatment of heart disease, stroke, diabetes, respiratory diseases, and cancer.

## 1.5 POPULATION AGEING, HEALTH, AND SOCIAL POLICIES FOR ELDERLY PERSONS IN INDIA

Recognising the challenges arising from the demographic transition and ongoing socio-economic changes such as industrialisation and urbanisation, the government of India has launched several health and social policy measures to enhance the well-being of elderly persons in the country.

In view of the recommendations and the underlying philosophy of healthy ageing in the national policy, the Ministry of Health and Family Welfare (MoHFW) has initiated various healthcare programmes. Under the aegis of the MoHFW, the National Programme of Health Care for Elderly (NPHCE) aims to provide comprehensive healthcare facilities to the elderly through primary, secondary, and tertiary delivery systems. Another important step undertaken by the MoHFW to improve primary healthcare is Ayushman Bharat. Ayushman Bharat was launched in 2018 as a continuum of care alongside two new components: Health Wellness Centres (HWCs) and Pradhan Mantri Jan Arogya Yojana (PMJAY). The aim of Ayushman Bharat is to upgrade health sub-centres and primary health centres into health and wellness centres, wherein a healthcare provider or doctor, two female and one male multi-purpose workers, and about five accredited social health activist (ASHA) workers collaborate to provide holistic health services at the community level. Simultaneously PMJAY aims to provide financial protection, cashless at the point of care and portable for secondary and tertiary care.



## HEALTH AND SOCIAL POLICIES AND PROGRAMMES IN INDIA FOR THE ELDERLY (AND GENERAL)

### Health policies and programmes in India

- National Programme for Health Care of the Elderly (NPHCE)
- Pradhan Mantri Jan Arogya Yojana (PMJAY)
- Health Wellness Centres (HWCs)
- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)
- National Programme for the Prevention and Control of Deafness (NPPCD)
- National Oral Health Programme (NOHP)
- National Tobacco Control Programme (NTCP)
- National Programme for Palliative Care (NPPC)
- National Programme for Prevention and Management of Burn Injuries (NPPMBI)
- National Programme for Prevention and Control of Fluorosis (NPPCF)
- National Iodine Deficiency Disorders Control Programme (NIDDCP)

### Social policies and programmes in India

- Integrated Programme for Older Persons (IPOP)
- Indira Gandhi Old Age Pension Scheme (IGNOAPS)
- Indira Gandhi Widow Pension Scheme (IGWPS)
- Atal Pension Yojana (APY)
- Pradhan Mantri Jeevan Jyoti Bima Yojna (PMJJBY)
- Pradhan Mantri Suraksha Bima Yojana (PMSBY)
- The Annapurna Scheme (food security provision for elderly who are not covered under IGNOAPS)
- Assistance to panchayati raj institutions/ voluntary organisations/self-help groups for old age homes/multi-service centres for the benefit of older people in each district of the country

Article 41 of the Directive Principles of State Policy in the Indian Constitution directs the state to provide assistance for older persons and their rights to maintenance from their children under Section 125 of the Code of Criminal Procedure. The Maintenance and Welfare of Parents and Senior Citizens Act of 2007 provided a legal framework in support of the elderly, mandating that children and property heirs are responsible for the care and support of the poor elderly, as well as urging the state governments to implement old-age homes for the destitute elderly. The Maintenance Act of 2007 and the National Policy on Older Persons (1999) reaffirm the commitment of the Indian government to ensure the health, safety, social security, and well-being of older persons. They envision that the state will extend support for financial security, healthcare, shelter, welfare, protection against abuse and exploitation, and other needs of older persons. The revised National Policy for Senior Citizens 2011 (draft) also reflects a fundamental rights-based perspective and calls for ageing-in-place, healthy ageing, and social and labour force participation.

### 1.6 HEALTH AND RETIREMENT STUDIES (HRS): INVESTIGATING AGEING WORLDWIDE

The global ageing situation presents policy challenges that demand science-based longitudinal data on this phenomenon. Taking this initiative, the U.S. National Institute on Aging (NIA) and the Institute for Social Research (ISR) at the University of Michigan jointly launched the Health and Retirement Study (HRS) in 1992. The HRS was established to inform the U.S. national retirement policy as population ageing was recognized as a challenge. The HRS model employs unique and in-depth interviews to gather multi-disciplinary data spanning physical and mental health, insurance coverage, financial situations, family support systems, employment status, and retirement planning from a nationally representative sample of adults age of 50 and above. More than 44 nations have adopted the HRS model studies.

## HRS-FAMILY OF AGEING STUDIES

Health and Retirement Study, HRS

Mexican Health and Aging Study, MHAS

English Longitudinal Study of Ageing, ELSA

Survey of Health, Ageing, and Retirement in Europe, SHARE

Costa Rican Longevity and Healthy Aging Study, CRELES

Korean Longitudinal Study of Aging, KLoSA

Indonesian Family Life Study, IFLS

Japanese Study of Aging and Retirement, JSTAR

Study on Global Ageing and Adult Health, SAGE

The Irish Longitudinal Study on Ageing, TILDA

China Health and Retirement Longitudinal Study, CHARLS

Brazilian Longitudinal Study of Ageing and Well-Being, ELSI-Brazil

Northern Ireland Cohort for Longitudinal Study of Ageing, NICOLA

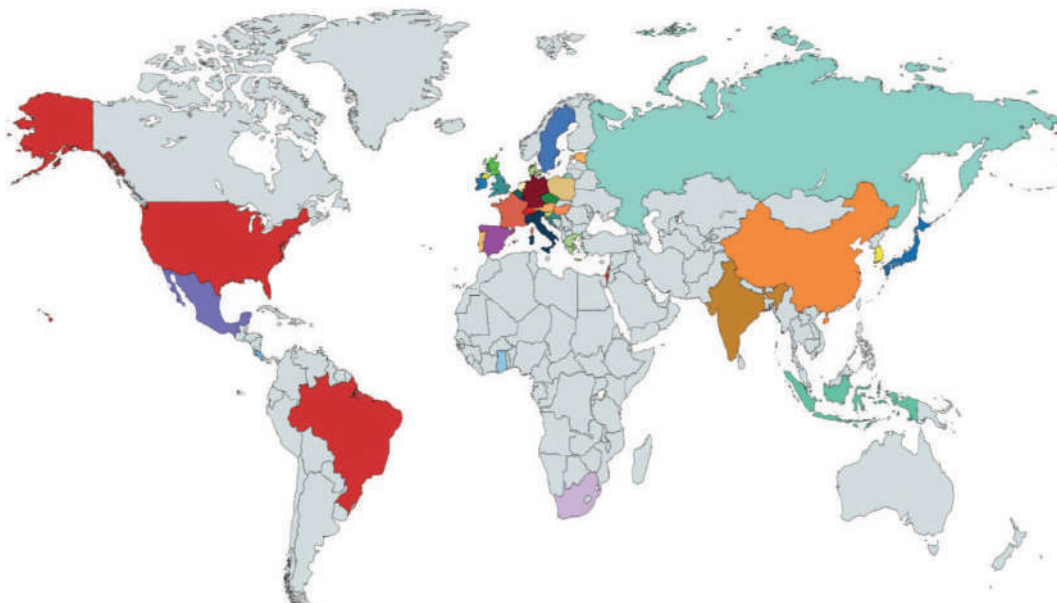
Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in South Africa, HAALSI

Healthy Ageing in Scotland, HAGIS

**Longitudinal Ageing Study in India, LASI (36 States)**

They aim to measure health and its determinants and consequences over the later stages of their population's life cycle. One of the first such efforts outside of the U.S. was the English Longitudinal Study of Ageing (ELSA), which is directly comparable to the HRS. The successes of HRS and ELSA have led to an international study that now tracks health and retirement trends in Europe: The Survey of Health, Ageing, and Retirement in Europe (SHARE). SHARE is methodologically innovative and is designed to maximise cross-national comparisons. SHARE originally involved Sweden, Denmark, France, Belgium, the Netherlands, Germany, Switzerland, Austria, Spain, Italy, and Greece. The follow-up waves have expanded to include other countries and SHARE aims to include all EU member countries. SHARE, like HRS, is methodologically innovative and is designed to maximise cross-national comparisons (National Institute on Aging 2007).

**Map 1.2: Health and Retirement Studies (HRS) around the World**





### KEY FEATURES OF THE HRS

- Nationally representative panel study of persons age above 50 and above
- Biennial interviews
- Interviews with both members of a couple
- Multidisciplinary content on health, health services, labour force, economic status, and family structure and transfers
- Linkages to administrative records
- Rapid and public release of data
- Currently in 44 countries and still growing

Many features of the HRS model allow for well-informed policy decisions, such as a rigorous and science-based agenda, respect for local knowledge, longitudinal focus, and public access to data. As population ageing becomes a major global policy concern in developing and developed countries alike, the HRS model has inspired the expansion of similar studies around the world. The Mexican Health and Ageing Study (MHAS), which launched in 2001, was the first such effort in a developing country. Similar studies are also underway in Asia; the most recent are the Korean Longitudinal Study on Ageing (KLoSA), the Japanese Study of Aging and Retirement (JSTAR), and the China Health and Retirement Longitudinal Study (CHARLS). The LASI is India's first and the largest amongst the global HRS family.

## 1.7 BACKGROUND AND NEED FOR THE LASI

The alarming population projections and dramatic shift in age-structure call for robust and internationally harmonized data on ageing. Although adult health and ageing is a subject that is being increasingly investigated, there are currently no comprehensive and internationally comparable national survey data in India that cover and connect the full range of topics necessary to understand the health, economic, social, and psychological aspects of the ageing process. The LASI is designed to fill this gap.

Sustainable development requires that we address the unacceptable number of older people who live in poverty, lack adequate income security, experience threats to personal safety (for example, through elder abuse or unmet needs in disasters), and have limited access to health and social care (Lansley, McCreddie & Tinker, 2004). Despite several state policy and programme initiatives, there is still a considerable policy vacuum in the absence of scientific evidence on India's older population. As no sufficiently broad, nationally representative dataset is currently available in India, comprehensive, new scientific data are needed to conduct analyses of the health, economic, and social challenges relating to population ageing and formulate mid- and long-term policies and programmes to address these and other challenges presented by population ageing. Considering the void in scientific data, the LASI project was launched under the aegis of MoHFW, Government of India. The LASI is a national landmark in scientific research to allow a better understanding of India's elderly health problems and population ageing processes. The LASI will play an important role of informing the design of appropriate evidence-based policies for older adults and the elderly in the country.

The LASI would be the one-stop platform to provide information to policymakers; from demography to economic well-being to health status, the LASI is designed to serve as a reservoir of scientific evidence for the country's policymakers and bureaucrats to make informed policy decisions on the issues of ageing. The LASI Wave 1 constitutes a comprehensive demographic profile of 72250 older adults age 45 and above including their spouses less than age 45 years. This information will help us estimate the age and sex distribution, education level, family size, age at marriage, and migration patterns of the elderly population in India. The LASI data could also be used to analyse the relationship between the various demographic characteristics of the elderly population and their impact on health status, economic wellbeing, and social and employment status. Additionally, the longitudinal data of the LASI would help in studying the demography, health, and economics of ageing transition in India and its states.

### 1.7.1 The LASI Pilot

The LASI pilot was successfully carried out in 2010 to test survey tools and protocols, and to understand the ways to strengthen the process for the main survey. A sample of 1,600 older adults 45 and above was drawn using stratified, multistage area probability sampling design. After a series of pre-pilot studies designed to test the instrument, pilot data was collected through face-to-face interviews conducted over a period of three months. Descriptive analysis of the data was performed and the lessons from the analysis were used for the launch of a full-scale LASI survey.

The LASI pilot survey was conducted in four states: Karnataka, Kerala, Punjab, and Rajasthan. To capture regional variation, we included two northern states (Punjab and Rajasthan) and two southern states (Karnataka and Kerala). Karnataka and Rajasthan were included in WHO's SAGE, which enabled us to compare our findings with the SAGE data. The inclusion of Kerala and Punjab demonstrates our aim to obtain a broader representation of India, wherein geographical variations, accompanied by socioeconomic and cultural differences call for careful study and deliberation.

**Table 1.4 Number of households, number of interviews with LASI age-eligible individuals, number of biomarker responses, and response rates according to the place of residence covered in the LASI pilot, 2010**

| Results                                             | Urban        | Rural        | Total        |
|-----------------------------------------------------|--------------|--------------|--------------|
| <b>Household interviews</b>                         |              |              |              |
| Household selected                                  | 300          | 725          | 1025         |
| Household interviewed                               | 280          | 669          | 950          |
| Household response rate <sup>1</sup>                | <b>93.33</b> | <b>92.28</b> | <b>92.68</b> |
| <b>Individual interviews</b>                        |              |              |              |
| Number of age-eligible individuals                  | 495          | 1266         | 1761         |
| Number of age-eligible individuals interviewed      | 472          | 1211         | 1683         |
| Individual response rate <sup>2</sup>               | <b>95.35</b> | <b>95.66</b> | <b>95.57</b> |
| <b>Biomarker interviews</b>                         |              |              |              |
| Number of eligible persons for biomarkers           | 472          | 1211         | 1683         |
| Number of eligible persons who completed biomarkers | 423          | 1107         | 1530         |
| Biomarker response rate <sup>3</sup>                | <b>89.62</b> | <b>91.41</b> | <b>90.91</b> |
| <b>Dried blood samples (DBS) collection</b>         |              |              |              |
| Number of persons who consented for DBS             | 366          | 1053         | 1419         |
| Number of DBS collected                             | 348          | 1008         | 1356         |
| <b>DBS response rate<sup>4</sup></b>                | <b>95.1</b>  | <b>95.7</b>  | <b>95.6</b>  |

Note

This table is based on an unweighted sample. Eligible individuals were persons aged 45+ years and their spouses less than 45 years.

1. Indicates the number of households interviewed/households selected.
2. Indicates the number of eligible individuals interviewed/number of age-eligible individuals.
3. Indicates the number of eligible biomarkers completed/number of eligible biomarkers.
4. Indicates the number of dried blood samples (DBS) collected/ number of eligible individuals consented for DBS.

The LASI pilot sought information on households and older individuals in the respective households. The analysis of LASI pilot data revealed insightful evidence on reported and measured health status, social network characteristics, income and consumption, retirement, and pensions of the ageing population. Details about the methodology, findings, and recommendations are presented in the LASI-Pilot India Report.

Learnings from the LASI pilot survey have guided the implementation of the first wave of a large-scale, national- and state-representative panel survey on the health, economic status, and social behaviours of older people in India, with sufficient statistical power to test the hypotheses in subpopulations of interest.

## **1.8 THE LONGITUDINAL AGEING STUDY IN INDIA (LASI), MAIN WAVE 1**

The LASI is a full-scale national survey of scientific investigation of the health, economics, and social determinants and consequences of population ageing in India. The LASI is a nationally representative survey of 72,250 older adults age 45 and above across all states and union territories of India. LASI is envisioned to be conducted every 2 years for the next 25 years. It is the world's largest and India's first longitudinal ageing study. It is well-positioned to evaluate the effect of changing policies on the behavioural outcomes in India. In the LASI, internationally harmonized has been collected, enabling cross-state analyses and the cross-national analyses of ageing, health, economic status, and social behaviours, which lays the foundation for national and state-level policies to address the challenges presented by increasing disease burden and population ageing in India. The LASI's public, internationally harmonized data and de-identified panel data will also allow for cross-national comparative research studies on ageing.

### **Key Features of LASI**

- A nationally representative longitudinal survey of 72,250 older adults age 45 and above in all of India's states and union territories in Wave 1, 2017–19, includes 31, elderly age 60 and above
- World's largest and India's first longitudinal ageing study
- Biennial survey of all the LASI Wave 1 participants
- First two waves: 2016–21, long-term goal to continue the survey for 25 years
- Internationally harmonized, de-identified panel data
- Adopts state-of-the-art technology in sample management
- Lays the foundation for national- and state-level policies to address the challenges of increasing disease burden and population ageing in India and cross-national comparative research studies on ageing

### ***1.8.1 The LASI Main Wave: Goals, Objectives, and Outcomes***

The main goal of the LASI is to collect longitudinal data on the burden of disease, functional health, healthcare, and the social and economic wellbeing of older adults based on internationally comparable research design and tools and to adopt cutting edge scientific methods to provide the foundation for credible and acceptable data for national policy and long-term scientific research. The LASI's key objective is to provide credible and comprehensive scientific evidence based on demographics, household economic status, chronic health conditions, symptom-based health conditions, functional health, mental health (cognition and depression), biomarkers, health insurance and healthcare utilization, family and social networks, welfare programmes, work and employment, retirement, satisfaction, and life expectations.

The first national wave of the LASI provides in-depth data on ageing, social relationships, social support, family, and life satisfaction to help determine the specific needs, circumstances, and views of ageing adults in the light of changing social and familial circumstances. All measures, while specific and sensitive to the Indian context, have been harmonized to the greatest possible extent with its international sister surveys on ageing and retirement. This is done in order to provide a valuable source for comparison and to work towards providing a comprehensive picture of population ageing in India and comparative studies of global population ageing.



## LASI GOALS

1. To develop and implement a nationally representative, longitudinal survey of adult health and ageing in India
2. To provide data that are internationally harmonized with the HRS and its sister studies around the world to enable cross-national comparative studies that will advance understanding of how different institutions, cultures, and policies influence ageing
3. To provide de-identified data to the research community in a timely manner
4. To provide data that will have a strong foundation for national and state-level policymaking and will aid policymakers and researchers around the world in examining how policies and programmes affect population behaviours, health outcomes, and the resulting influences on society
5. To provide a foundation in India for innovative, rigorous, multidisciplinary studies of ageing that will inform policy and advance scientific knowledge

The LASI is designed to simultaneously generate data, raise awareness of the health issues of older people, and inform public policies in India and its states. The LASI provides a great opportunity to examine how different healthcare policies and institutions influence healthcare utilization and health outcomes using innovative and comparable measures of health, including the direct assessment of biological measures. The use of biomarkers enables us to study health outcomes without self-reporting biases that may be differentially associated with the socio-economic spectrum and access to health services. These biomarker measures also provide additional insights on the true levels of disease prevalence as well as the extent of undiagnosed conditions and effective management of chronic diseases in India.

## SPECIFIC OBJECTIVES OF THE LASI

### Objective-1 Health: Disease burden and risk factors

- To provide robust estimates of the prevalence of communicable diseases and non-communicable diseases (NCDs) for adults and elderly population
- To compare self-reported and measured health conditions and provide an overall assessment of the total burden of diseases
- To understand the risk factors and social determinants of communicable and non-communicable diseases
- To study the demography of ageing transition including the cause of death, life expectancy at older ages, etc.

### Objective-2 Health care and health care financing

- To assess the coverage and pattern of health care utilization by diseases
- To study the episodes of health care utilization by choice of health care sources and provider preferences
- To assess household health expenditure, disease-specific health care costs, sources of health care financing, out-of-pocket health expenditure (OUP), catastrophic health expenditure (CHE) and the extent of medical impoverishment
- To assess household health expenditure on various services of health
- To study access to health insurance, type of health insurance, diseases covered, and family coverage under health insurance

### Objective-3 Social: Family and social network, social welfare and security

- To study family and social networks including multigenerational family structure, living arrangement and networks, social support, financial support, social connectedness, and life satisfaction
- To examine the financial support/remittances received and provided to family members among the older population
- To study care taking of family members who are unable to perform daily activities
- To study social participation, decision making and the perception on lack of companionship, isolation, ill-treatment, and the satisfaction of older people with life

### Objective-4 Economic: Income, wealth and expenditure

- To assess the economic well-being of older persons and their economic vulnerability: major domains include household income, expenditure, assets and debts
- To study the economically active older population, workforce participation across older ages and across different sectors and job characteristics, employment, retirement (official and non-official), pension (commercial, public pension, old age pension), perceived economic security, vulnerability and expectations
- To assess housing conditions, poverty, and food security among the older population

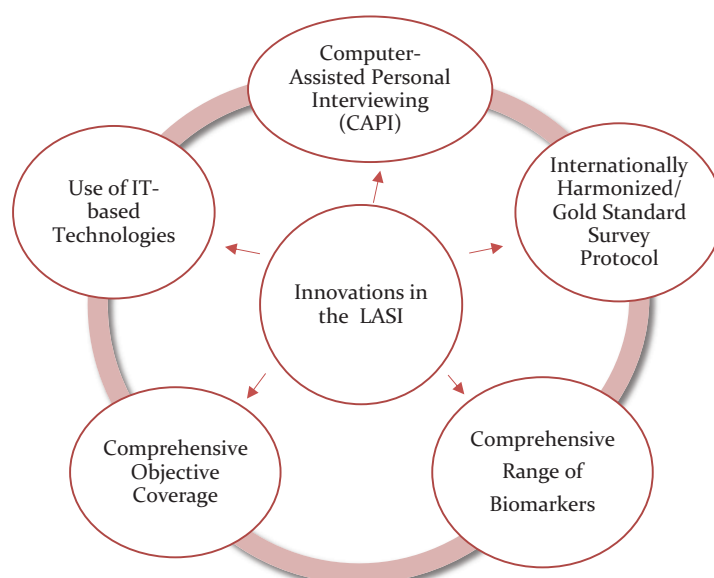
With the goals and objectives mentioned above, the LASI will help in expanding the scope of health and social security policy and programmes, and contribute to landmark national- and state-level policy and programmes in India. LASI will contribute greatly in expanding the NPHCE and the social and economic security programmes planned to be initiated by the Ministry of Social Justice and Empowerment (MoSJE).

The expected outcomes of the LASI are as follows:

- Prioritisation of healthcare spending, the expansion of healthcare infrastructure, and the promotion of innovations to meet healthcare challenges, including care for bed-ridden elderly
- Contribution in developing a comprehensive health and social security policy and programme framework and policies to deal with the economic challenges posed by ageing, as per the requirements of the Social and Economic Security Programme to be initiated by the MoSJE
- Creation of national and international scientific value through internationally comparable scientific multidisciplinary data; therefore, enhancing the understanding of the science of healthy ageing and contributing to the national and global research agenda
- Contribution in prevention and control of the heavy burden of NCDs and disability among older adults and the elderly population of India.
- Provide a database to expand and monitor the NPHCE initiated by the MoHFW
- Help in establishing a range of preventive and curative healthcare programmes for the older population and the most vulnerable among the older persons.

### ***1.8.2 Innovations in the LASI***

LASI is the first dataset in India that will provide a longitudinal database for designing policies and programmes in the broad domains of social, health, and economic wellbeing of the older population. The LASI adopts the state of the art large-scale survey protocol and field implementation strategies. Space limitations preclude a detailed review of existing studies such as the NFHS, the SAGE, and the India Human Development Survey (IHDS). While all these studies have notable strengths, they lack one or more of the following attributes: broadly representative samples, an expansive topical focus, harmonization with HRS, a longitudinal aspect, coverage of comprehensive biomarkers, and use of computer-assisted personal interview (CAPI) technology. No other survey in India collects such detailed data on income, assets, and consumption together with health and biomarker data other than the LASI.



### ***1.8.2.1 Innovation in sample and data management***

Our survey protocol uses state-of-the-art technology in sample management interviewing, CAPI, and data processing. These contribute to faster data release, accelerating scientific discovery. These technologies ensure data quality through built-in checks in CAPI as well as real-time data monitoring with an automated data quality control protocol. Most of the population surveys in India use paper and pencil for data collection, which delays data sharing with the public, among other disadvantages. We developed an automated quality control protocol during the pilot study, building on the Sample Management Software (SMS) and CAPI technologies associated with RAND's information system, MMIC™ (Multimode Interviewing Capability). CAPI directly records the responses of survey participants. This method requires field teams to be outfitted with laptop computers pre-loaded with survey questions asked of respondents in a face-to-face interview. Field teams input responses directly into a laptop computer, thereby limiting data entry processes as well as minimizing data recording and entry errors. Using this protocol in the full-scale, the LASI allows the monitoring of fieldwork progress and checks the quality of collected information by examining data (e.g., for internal inconsistencies and missingness) at the level of interviewers and state fieldwork agencies.

### ***1.8.2.2 Innovation in measuring health and healthcare utilization***

Another innovative feature of the LASI survey instrument is the collection of biomarkers, which can be analysed to provide researchers with data on direct health examinations. Given the lack of access in our sample to health care and proper diagnoses, we directly measure biological markers and performance measures instead of relying solely on self-reports. We also recognize the widespread use of healers and traditional medicine, differentiating between types of health care providers. Biomarkers include:

1. Physiological Assessments - blood pressure, lung function test, vision test;
2. Anthropometric Measurements- height and weight, waist and hip circumference;
3. Performance-Based Measurements- grip strength, balance test, and timed walk; and
4. Molecular Markers- hs\_C- reactive protein, glycosylated hemoglobin, hemoglobin, cytomegalovirus/Epstein-Barr virus.

The inclusion of biomarkers and other health assessments is particularly important for developing countries such as India, where access to health care and awareness about health conditions are limited. As a result, undiagnosed diseases are more common in developing countries than in developed countries.

### ***1.8.2.3 Information technology-based innovations***

The LASI uses the latest IT-based technologies. The LASI uses geographic information system (GIS) for thematic mapping and community analysis of the information at the community level. It uses Barcode technology for correct matching and anonymizing data.

### ***1.8.2.4 Comprehensive coverage of subjects***

The LASI instrument collects information about the physical and social environment (e.g., water quality, sanitation, and crime in the neighbourhood), allowing multi-level analyses of a broad range of psychological, social, and behavioural risk factors (e.g., measuring social connectedness in addition to traditional social network questions) of health, and social and economic wellbeing of the older adults. LASI also collected information at the community level in addition to household and individual level information.

## 2. METHODOLOGY

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### 2.1 STUDY POPULATION

The target population for the Longitudinal Ageing Study in India (LASI) Wave 1 included all Indian adults and elderly men and women age **45 and above** and their spouses who reside in the same household, irrespective of age. **There is no upper age limit for the selection of LASI respondents, including the collection of biomarkers.** The age of 45 is chosen to (a) harmonize this survey with its sister studies, the worldwide Health and Retirement Study (HRS) surveys<sup>1</sup>; (b) allow the measurement of pre-retirement behaviour, as people often begin to change their labour market, health, and consumption behaviours before they retire; and (c) determine the early onset of chronic diseases among adults before they reach older ages. Non-communicable chronic diseases are typically present in individuals age 55 or older in many developed countries, but their onset occurs in India a decade earlier, at age 45 or older (Arokiasamy, 2018). The selection of age 45 in India is important to study ageing and health transition from prime adult ages.

In accordance with the conventional practice for other population-based surveys, the LASI sampling frame included only household population. Persons living in collective living arrangements, such as nursing homes, long-term dependent or care facilities, boarding houses, messes, hotels, residential hotels, rescue homes, jails, prisons, army camps, boarding schools, ashrams, etc. were not considered as household population, and therefore, not included in the survey.

The eventual unit of observation of the LASI is a **LASI-eligible household (LEH)**. An LEH is a household with at least one-member age 45 and above. A ‘household’ is defined as comprising one or more individuals residing in a residential structure with a common cooking arrangement to prepare meals. From the selected households, the LASI included all men and women age 45 and above and their respective spouses, irrespective of their age. In other words, ***all married and non-married men and women age 45 and above and their spouses in selected households were interviewed.*** Existing survey data, such as the National Family Health Survey (NFHS-3), indicated that about two-thirds of households in India were expected to have a LASI age-eligible person. About half of these households were expected to have one age-eligible person (including spouses less than age 45), and another half were expected to have two or more age-eligible persons (and spouses less than age 45) but mostly two.

The LASI survey canvassed a household cover screen, popularly known as a household roster, which collects a set of key characteristics of each member of the sampled households. This cover screen was completed in all the age-eligible and non-age-eligible selected households. It provides information for present and future waves of the LASI and is used to:

- Identify LASI age-eligible households as well as individuals age 45 and above and their spouses, irrespective of age.
- Identify the key informant, the most knowledgeable person in the household, who can provide information on the household’s economic condition.

The cover screen also serves as the sampling frame for subsequent LASI Waves in addition to providing baseline household data.

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<sup>1</sup> The Korean Longitudinal Study of Aging and the China Health and Retirement Survey also employ age cut-offs of 45, whereas the HRS, the English Longitudinal Study of Ageing, and the Survey of Health, Ageing, and Retirement in Europe employ age cut-offs of 50. Because of India’s shorter life expectancy, we choose an age cut-off of 45.



## 2.2 STUDY DESIGN

The LASI is a biennial panel survey representative of the older and elderly population age 45 and above for India and its states and union territories, as existed at the time of planning of the survey. It aims to follow a representative sample of the population age 45 and above (including spouses, irrespective of age) every two years for the next 25 years with refreshment samples for attrition due to death, dislocation, non-contact, and refusal. The LASI includes all age-eligible persons in LEHs. Wave 1 of the LASI covered a panel sample of 72,250 individuals age 45 and above and their spouses, including 31,464 elderly age 60 and above and 6,749 oldest-old persons age 75 and above from 35 states and union territories of India (excluding Sikkim).

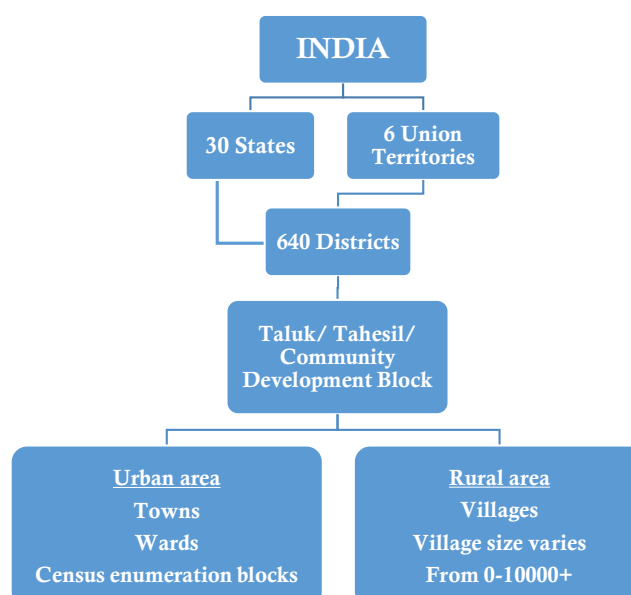
The LASI is designed to provide reliable estimates of all health outcomes and social and economic well-being indicators for older adults age 45 and above, including spouses less than age 45 representative to India's population and also for all of *its 30 states and 6 union territories according to 2011 census of India* (RGI, 2011). In addition, the LASI is designed to provide representative estimates for the four selected metropolitan cities of Delhi, Kolkata, Mumbai, and Chennai, representing the northern, eastern, western, and southern parts of India, respectively.

## 2.3 SAMPLING DESIGN

The main objective of the LASI is to study the health status and the social and economic well-being of older adults in India. The sampling design for the LASI survey is governed by its overall objectives. Therefore, the LASI adopted a ***multistage stratified area probability cluster sampling design*** to arrive at the eventual units of observation: older adults age 45 and above and their spouses irrespective of age. The goal was to select a representative sample in each stage of sample selection.

India is a union comprising 30 states and 6 union territories with a population of 1,211 million (Census of India, 2011) at the time of the survey. India's states vary significantly with respect to geography, culture, population size, health conditions, demographics, and socio-economic characteristics. For administration and development planning, the states are further divided into districts, sub-districts (Talukas/Tehsils/Blocks), villages, cities, and towns. India's hierarchical administrative divisions are presented in Figure 2.1.

**Figure 2.1 Administrative divisions of India**



### **2.3.1 Sampling frame**

Within each state, LASI Wave 1 adopted a three-stage sampling design in rural areas and a four-stage sampling design in urban areas. In each state/UT, the first stage involved the selection of Primary Sampling Units (PSUs), that is, sub-districts (Tehsils/Talukas), and the second stage involved the selection of villages in rural areas and wards in urban areas in the selected PSUs. In rural areas, households were selected from selected villages in the third stage. However, sampling in urban areas involved an additional stage. Specifically, in the third stage, one Census Enumeration Block (CEB) was randomly selected in each in urban area. In the fourth stage, households were selected from this CEB (Figure 2.2).

The sampling frame (universe) in the first stage was the list of sub-districts (Tehsils/Talukas) according to the 2011 census. In rural areas, the sampling frame in the second stage was the villages in all selected sub-districts/Talukas according to the 2011 census. In urban areas, the sampling frame for the second stage consisted of all the wards in all selected sub-districts. The list of CEBs in each selected ward was the sampling frame in the third stage.

To obtain the sampling frame for the selection of households from secondary sampling units (SSUs), a mapping and household listing operation was carried out in the sampled SSUs (i.e. villages in rural areas and CEBs in urban areas). All of the listed households in selected villages/CEBs (i.e. the SSUs) formed the sampling frame for the selection of households.

Detailed information related to the sampling frame from the 2011 census is provided in Appendix I.

### **2.3.2 Stages of sample selection**

**Stage 1: Selection of Primary Sampling Unit (PSU):** In the first stage, the selection of PSUs (sub-districts or Tehsils/Talukas), the number of targeted PSUs in a state were allocated proportionally to each sub-state region (level 1 stratification). In each region, the PSUs were selected using Probability Proportional to Size (PPS) sampling with the number of households in a PSU as the size measure.

#### **Explicit (level 1) and Implicit (level 2) Stratification**

The first level of stratification was geographic regions, with a group of districts forming a contiguous region (adopted from National Sample Survey Office regional classifications).

Within each of these regions, all the PSUs (sub-districts) were explicitly stratified using one or more of the following stratifying variables: 1) total number of households in a sub-district, 2) level of female literacy, 3) the proportion of Scheduled caste and Scheduled tribe population, and 4) the proportion of males engaged in the non-agricultural sector. Before the selection of PSUs from each stratum using the PPS sampling technique, the sub-districts were arranged according to the level of female literacy (implicit stratification) to ensure a representative sample of sub-districts with varying levels of social development.

In each state, the stratification and selection processes for stage 1 sampling units can be summarized as follows:

- The first level of stratification involved stratifying all the sub-districts into homogenous strata. All the sub-districts were stratified by geographical regions with a group of districts forming a contiguous region, and within each region by any one or more of the following criteria: i) sub-district population size, ii) proportion of SC/ ST population in sub-district and iii) the proportion of males engaged in the non-agricultural sector. In addition to these explicit stratification, further implicit stratification was done by arranging all the sub-districts within a stratum according to female literacy.
- The target number of PSUs to be selected from each stratum was proportional to the stratum size.
- The target number of PSUs from all the sub-districts within a stratum were selected by PPS sampling.

**Stage 2 and 3: Selection of Secondary Sampling Unit (SSU):** The second stage involved the selection of a fixed number of SSUs, which are villages in rural areas and wards in urban areas, from the selected PSUs. Urban and rural areas form the third level of stratification in the context of the overall LASI sampling design. Within each selected PSU, five SSUs are selected. These five SSUs were allocated proportionally to rural (villages) and urban areas (urban wards). Following the allocation across rural and urban areas, the required numbers of SSUs were selected using PPS sampling, taking the number of households in an SSU as the measure of size. SSUs (large size villages) in rural areas with approximately more than 500 HHs underwent another sampling stage. These large size villages were further segmented.

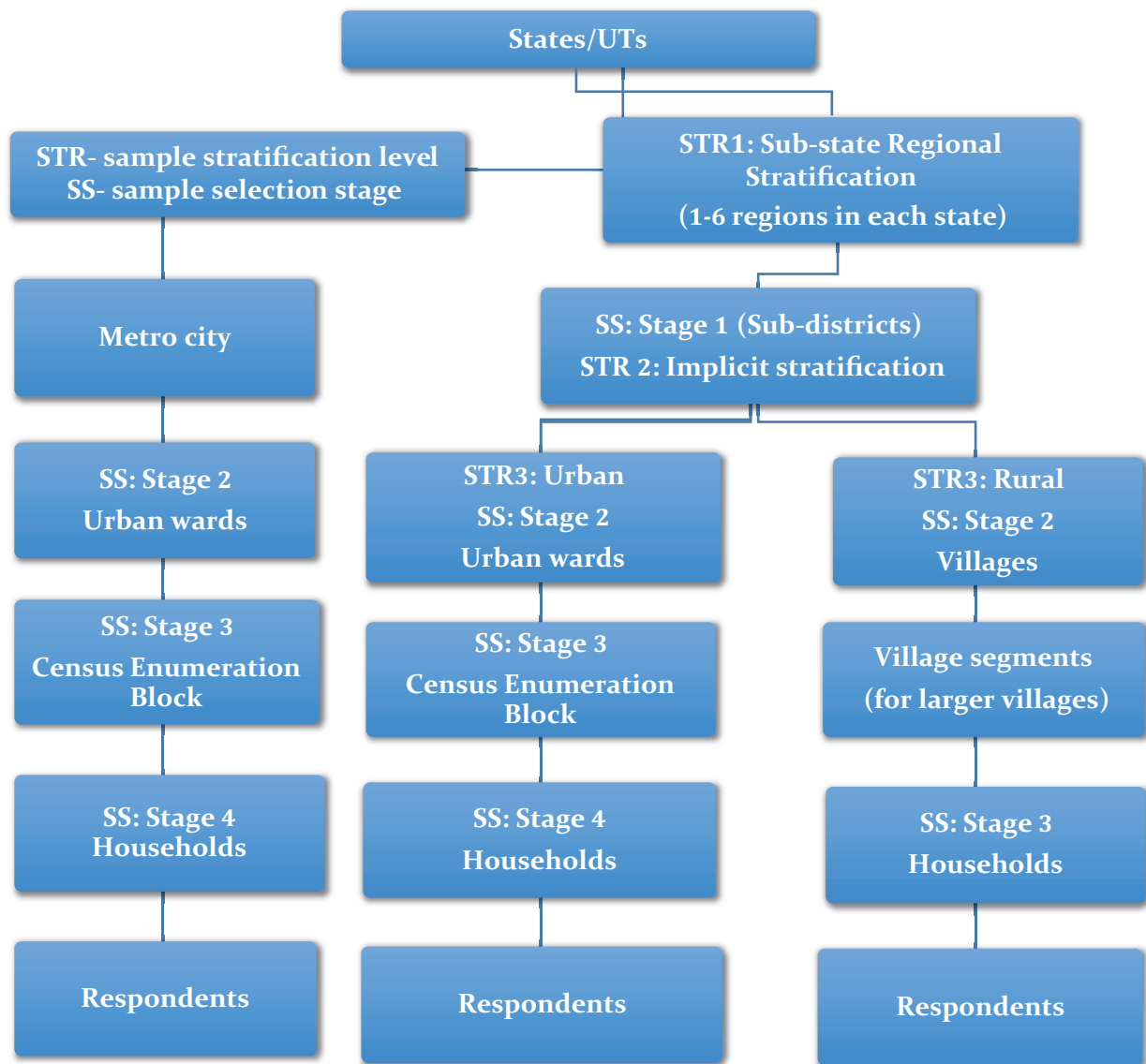
Sample selection in urban areas involved an additional stage of sample selection (stage 3). In the third stage, from each urban ward, one CEB was randomly selected.

- The third-level stratification involved the selection of villages (SSUs) and urban wards (CEB-SSUs) according to the rural and urban proportions of the population in each PSU.

**Stage 3 and 4: Selection of Households (HH):** In rural areas, the third stage involved the selection of a fixed number of HHs (i.e. 32) from each selected village or village segments (for villages with more than 500 HHs). In urban areas, the fourth stage of selection involved the selection of a fixed number of HHs (i.e. 35) from each selected CEB.

No readily available sampling frame for HHs exists in India, unlike in other developed countries (e.g. a master address file in the US). Therefore, a separate mapping and house listing exercise was carried out in all the SSUs for HH selection in both rural and urban areas. The listed HHs from the selected SSUs were used as the sampling frame for HH selection.

**Figure 2.2 Schematic representation of three level stratification and stages of sample selection**



### 2.3.3 Oversampling of metro cities and 65+ older population

**Metropolitan cities:** The selection of metropolitan areas included four metropolitan cities in India as part of a national urban sample; in addition to Delhi (state), which represents the north region, the cities of Kolkata, Mumbai, and Chennai represented the three major regions of east, west, and south respectively. The goal is to obtain representative samples for each of these four metropolitan cities to generate city-specific indicators and to contribute to regional and national urban indicators.

Three-stage probability sampling was adopted for each of the four major cities.

- In the **first stage**, 40 PSUs of the city wards were drawn for each of these 4 major cities using PPS sampling. All of the wards in each city, defined according to the 2011 Census of India, served as the sampling frame in the first stage of sample selection. Each urban ward is comprised of a large number of CEBs of more or less the same size (125-150 HHs). These CEBs formed the SSUs. For Delhi, the sample selection included 40 wards from Delhi city and 10 SSUs from the rest of Delhi.
- In the **second stage**, one CEB from each selected ward was selected at random. In this stage, all CEBs in the selected ward formed the sampling frame. One CEB was randomly selected from each ward primarily because the selection of more than one CEB from a selected ward would reduce the number of first-stage sampling units (40 urban wards), which would have resulted in an increase in the design effect.
- In the **third stage**, 31 HHs from each CEB were selected for administering the survey using systematic sampling.

**Elderly population age 65 years and above:** Based on the sampling design of the LASI described here, the sample population of the elderly age 65 and above would not be sufficient for detailed analyses of the elderly population at the state level and across the socio-economic spectrum, at least for the first two waves. Therefore, it was decided to oversample the HHs with at least one-person age 65 and above to increase the sample size for the elderly age 65 and above. Specifically, in the first wave, in addition to the fixed number of 28 HHs in rural areas and 31 HHs in urban areas, 4 additional HHs with at least one elderly person age 65 and above were sampled in each village and CEB.

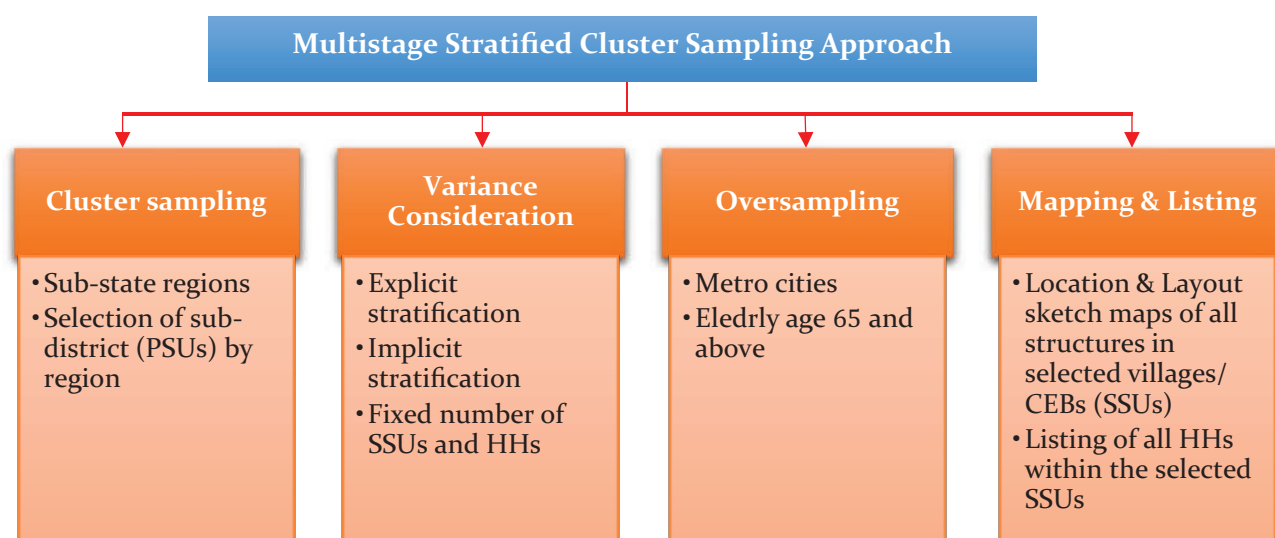
To obtain the sampling frame of HHs with person(s) age 65 and above, information about the number of person(s) age 65 and above was collected as part of the house-listing process. These four additional HHs were randomly selected from the HHs with at least one-member age 65 and above. It is important to note that, in these 4 additional HHs, not only older person(s) age 65 and above and their spouses as well as any other HH members age 45 and above and their spouses (irrespective of age) were also interviewed to be consistent with the LASI sample design.

In summary, the main design considerations for LASI are:

- The sampling units must be well-defined geographic/administrative units.
- The sampling units must contain enough household units to support a longitudinal survey.
- The selected sampling areas should not be sparsely spread with unreasonable travel requirements, and should be accessible to teams to conduct several follow-up surveys.



**Figure 2.3 Key sampling principles in the LASI**



## 2.4 SAMPLE SIZE

The major objective of the LASI is to estimate the prevalence of chronic diseases among older adults and the elderly population across the socioeconomic spectrum in India and its states and union territories. A previous population-based survey of individuals age 50 and above (WHO-SAGE, wave-1, India, 2007) provided estimates of the prevalence of different chronic diseases among men: arthritis (18%), hypertension (17%), asthma (9%), diabetes (7%), angina (6%), lung dysfunction (5%), depression (4%), and stroke (2%).

### Sample size estimation

#### Assumptions:

- prevalence of any disease of 5 percent
- design effect of 2
- the margin of error of 2 percentage points with 95 percent level of confidence

Required sample size to estimate prevalence, under the above-mentioned assumptions, is:

$$N = z_{1-\alpha/2}^2 * \frac{p(1-p)}{d^2} * \text{design effect}$$

Where: d=margin of error; p=proportion of population with a particular disease;  
 $\alpha$ =level of significance (5%)

$$= 1.96^2 * \frac{(0.05*0.95)}{0.02*0.02} * 2 = 912 \text{ (minimum sample of 1,000 for the smallest states)}$$

Based on the previously estimated disease prevalence and this calculation, a sample size of 1,000 individuals age 45 and above (including their spouses less than 45 years) in each state or union territory was considered the minimum necessary sample size to obtain reliable estimates of disease prevalence by state or union territory and by social and economic stratum. It is still possible to estimate the prevalence of a disease that may be lower than the assumed prevalence of 5% with the proposed sample size, considering the average prevalence of chronic diseases, however the margin of error will be higher in such cases.

As the states and union territories differ greatly in size, the sample was allocated proportionate to the size of the states and union territories. Additionally, the LASI provides estimates for the cities of Delhi, Mumbai, Kolkata, and Chennai, and, thus, the sample sizes of the states to which these cities belong were increased accordingly. The criteria used to allocate the sample across states and sub-state regions are shown in Tables 2.1 and 2.2.

### 2.4.1 Sample allocation

The minimum estimated sample size is 1,000 age-eligible persons for the smallest states or union territories. A larger sample size was considered for states with larger populations, larger geographic spreads, and more heterogeneity in socio-economic conditions to ensure that the sample represents the target population in each state. A larger sample size was also considered to ensure a sufficient sample size in the follow-up waves of the LASI in case attrition becomes significant due to death, migration, or non-response. In addition, the sample size was increased in Delhi, West Bengal, Tamil Nadu, and Maharashtra, where estimates were also required for the four selected metro cities. Tables 2.1 and 2.2 provide the state-wise sample size allocation according to the population sizes of the states as per the 2011 census.

**Table 2.1 State-wise estimated sample sizes according to the 2011 census of India**

| Population categories (2011 census)        | States                                                                                                                                                                                                                                                                                                               | Sampled households                                   |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>More than 150 million</b>               | Uttar Pradesh (199.8 million)                                                                                                                                                                                                                                                                                        | 4,000                                                |
| <b>150-100 million</b>                     | Maharashtra (112.4 million)<br>Bihar (104.1 million)                                                                                                                                                                                                                                                                 | 3,000<br>3,000                                       |
| <b>100-75 million</b>                      | West Bengal (91.3 million), Madhya Pradesh (72.6 million),<br>Tamil Nadu (72.1 million)                                                                                                                                                                                                                              | 2,000+1,000 (Kolkata)<br>2,500 2,000+1,000 (Chennai) |
| <b>75-25 million</b>                       | Rajasthan (68.5 million), Karnataka (61.1 million)<br>Gujarat (60.4 million), Andhra Pradesh (49.4 million), Odisha (42 million),<br>Telangana (35.3 million), Kerala (33.4 million), Jharkhand (33 million),<br>Assam (31.2 million), Punjab (27.7 million), Chhattisgarh (25.5 million),<br>Haryana (25.4 million) | 2,000 – 1,625                                        |
| <b>25 million and less</b>                 | Jammu and Kashmir (12.5 million), Uttarakhand (10.1 million)<br>Himachal Pradesh (6.9 million), Goa (1.5 million)                                                                                                                                                                                                    | 1,250                                                |
| <b>North-Eastern states (except Assam)</b> | Mizoram, Manipur, Nagaland, Arunachal Pradesh, Tripura, Sikkim,<br>Meghalaya                                                                                                                                                                                                                                         | 1,000                                                |
| <b>Union Territories</b>                   | Chandigarh, Puducherry, Andaman & Nicobar Islands, Dadra & Nagar<br>Haveli, Daman & Diu, Lakshadweep                                                                                                                                                                                                                 | 1,000                                                |
| <b>Metro cities</b>                        | Kolkata (14.1 million), Chennai (8.7 million), Mumbai (18.4 million), Delhi<br>(16.8 million)                                                                                                                                                                                                                        | 1,000 and<br>1250 (Delhi)                            |

**Table 2.2 Targeted sample size for India and its states and union territories, LASI, Wave 1**

| State/cities              | Number of PSUs | Number of SSUs from each PSU | Total Number of SSUs | Targeted HHs from each SSU | Total number of HHs | Targeted age-eligible individuals |
|---------------------------|----------------|------------------------------|----------------------|----------------------------|---------------------|-----------------------------------|
| Uttar Pradesh             | 32             | 5                            | 160                  | 25                         | 4,000               | 4,000                             |
| Maharashtra-Rest          | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Maharashtra-Mumbai        |                |                              | 40                   | 25                         | 1,000               | 1,000                             |
| Maharashtra-Total         |                |                              | 120                  | 25                         |                     |                                   |
| Bihar                     | 24             | 5                            | 120                  | 25                         | 3,000               | 3,000                             |
| West Bengal-Rest          | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| West Bengal-Kolkata       |                |                              | 40                   | 25                         | 1,000               | 1,000                             |
| West Bengal-Total         |                |                              | 120                  | 25                         |                     |                                   |
| Andhra Pradesh            | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Telangana                 | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Madhya Pradesh            | 20             | 5                            | 100                  | 25                         | 2,500               | 2,500                             |
| Tamil Nadu-Rest           | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Tamil Nadu-Chennai        |                |                              | 40                   | 25                         | 1,000               | 1,000                             |
| Tamil Nadu-Total          |                |                              | 120                  | 25                         |                     |                                   |
| Rajasthan                 | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Karnataka                 | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Gujarat                   | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Orissa                    | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Kerala                    | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Jharkhand                 | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Punjab                    | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Chhattisgarh              | 13             | 5                            | 65                   | 25                         | 1,625               | 1,625                             |
| Haryana                   | 13             | 5                            | 65                   | 25                         | 1,625               | 1,625                             |
| Delhi- Rest               | 2*             | 5                            | 10                   | 25                         | 250                 | 250                               |
| Delhi Metropolitan city   |                |                              | 40                   | 25                         | 1,000               | 1,000                             |
| Delhi                     |                |                              | 50                   | 25                         |                     |                                   |
| Assam                     | 16             | 5                            | 80                   | 25                         | 2,000               | 2,000                             |
| Arunachal Pradesh         | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Manipur                   | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Meghalaya                 | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Mizoram                   | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Nagaland                  | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Tripura                   | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Sikkim                    | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Jammu & Kashmir           | 10             | 5                            | 50                   | 25                         | 1,250               | 1,250                             |
| Uttarakhand               | 10             | 5                            | 50                   | 25                         | 1,250               | 1,250                             |
| Himachal Pradesh          | 10             | 5                            | 50                   | 25                         | 1,250               | 1,250                             |
| Goa                       | 10             | 5                            | 50                   | 25                         | 1,250               | 1,250                             |
| Chandigarh                | 8*             | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Puducherry                | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Andaman & Nicobar Islands | 8              | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Dadra & Nagar Haveli      | 8*             | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Daman & Diu               | 8*             | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| Lakshadweep               | 8*             | 5                            | 40                   | 25                         | 1,000               | 1,000                             |
| <b>India</b>              | <b>456</b>     |                              | <b>2,440</b>         |                            | <b>61,000</b>       | <b>61,000</b>                     |

Note

PSUs: tehsils/ taluks. SSUs: villages/CEB. Age eligible persons: aged 45 and above and their spouses, irrespective of age.

\* for these states, a total number of 40 SSUs is directly selected, as the number of sub districts was not sufficient.

## 2.5 SAMPLE COVERAGE AND CHARACTERISTICS

**Table 2.3 Household roster completed, age-eligible households, and individuals interviewed across states/UTs of India, LASI Wave 1, 2017-18**

| State/UTs                      | HH Rosters Completed<br>(age-eligible and non-age-eligible) | Age-Eligible HHs | Age-eligible HH Interviews Completed | Age-eligible Individuals Identified | Individual Interviews Completed |
|--------------------------------|-------------------------------------------------------------|------------------|--------------------------------------|-------------------------------------|---------------------------------|
| Haryana                        | 1,821                                                       | 1,285            | 1,251                                | 2,391                               | 1,898                           |
| Delhi                          | 1,283                                                       | 776              | 754                                  | 1,494                               | 1,319                           |
| Rajasthan                      | 2,200                                                       | 1,336            | 1,302                                | 2,493                               | 2,244                           |
| Uttar Pradesh                  | 4,721                                                       | 2,820            | 2,747                                | 4,965                               | 4,567                           |
| Bihar                          | 3,336                                                       | 2,109            | 2,083                                | 3,828                               | 3,520                           |
| Chhattisgarh                   | 1,943                                                       | 1,259            | 1,189                                | 2,272                               | 2,055                           |
| Madhya Pradesh                 | 2,790                                                       | 1,727            | 1,690                                | 3,241                               | 2,914                           |
| Gujarat                        | 2,159                                                       | 1,579            | 1,455                                | 3,039                               | 2,341                           |
| Daman & Diu (UT)               | 1,236                                                       | 662              | 577                                  | 1,271                               | 991                             |
| Dadra & Nagar Haveli (UT)      | 1,370                                                       | 741              | 631                                  | 1,373                               | 1,090                           |
| Karnataka                      | 2,018                                                       | 1,555            | 1,488                                | 2,981                               | 2,420                           |
| Goa                            | 1,147                                                       | 958              | 877                                  | 1,857                               | 1,427                           |
| Lakshadweep (UT)               | 894                                                         | 694              | 627                                  | 1,328                               | 1,139                           |
| Kerala                         | 1883                                                        | 1,542            | 1,411                                | 3,000                               | 2,497                           |
| Tamil Nadu                     | 3,248                                                       | 2,176            | 2,150                                | 3,845                               | 3,530                           |
| Puducherry (UT)                | 1,173                                                       | 848              | 839                                  | 1,542                               | 1,428                           |
| Jammu & Kashmir                | 1,435                                                       | 963              | 957                                  | 1,813                               | 1,613                           |
| Himachal Pradesh               | 1,081                                                       | 838              | 805                                  | 1,683                               | 1,388                           |
| Uttarakhand                    | 1,256                                                       | 878              | 863                                  | 1,566                               | 1,358                           |
| Punjab                         | 1769                                                        | 1,296            | 1,234                                | 2,519                               | 2,124                           |
| Chandigarh (UT)                | 1,107                                                       | 708              | 651                                  | 1,373                               | 1,026                           |
| Arunachal Pradesh              | 1,163                                                       | 704              | 702                                  | 1,291                               | 1,215                           |
| Nagaland                       | 1,207                                                       | 803              | 799                                  | 1,367                               | 1,316                           |
| Manipur                        | 1,180                                                       | 862              | 860                                  | 1,594                               | 1,369                           |
| Mizoram                        | 1,188                                                       | 765              | 732                                  | 1,410                               | 1,246                           |
| Tripura                        | 1,099                                                       | 748              | 721                                  | 1,374                               | 1,195                           |
| Assam                          | 2,281                                                       | 1,540            | 1,511                                | 2,817                               | 2,366                           |
| West Bengal                    | 3,201                                                       | 2,296            | 2,279                                | 4,428                               | 3,933                           |
| Jharkhand                      | 2,236                                                       | 1,451            | 1,408                                | 2,758                               | 2,464                           |
| Odisha                         | 2,306                                                       | 1,670            | 1,645                                | 3,102                               | 2,917                           |
| Maharashtra                    | 3,293                                                       | 2,446            | 2,421                                | 4,675                               | 3,973                           |
| Andhra Pradesh                 | 2,264                                                       | 1,568            | 1,511                                | 2,854                               | 2,679                           |
| Andaman & Nicobar Islands (UT) | 1,089                                                       | 736              | 725                                  | 1,347                               | 1,244                           |
| Telangana                      | 2,272                                                       | 1,487            | 1,418                                | 2,703                               | 2,475                           |
| Meghalaya                      | 666                                                         | 636              | 636                                  | 1,056                               | 969                             |
| <b>India</b>                   | <b>65,342</b>                                               | <b>44,462</b>    | <b>42,949</b>                        | <b>82,650</b>                       | <b>72,250</b>                   |

**Table 2.4 Household and individual response rate, states/UTs, India, LASI Wave 1, 2017-18**

| State/UTs                      | Household Response Rate |             |             | Individual Response Rate |             |             |
|--------------------------------|-------------------------|-------------|-------------|--------------------------|-------------|-------------|
|                                | Total                   | Rural       | Urban       | Total                    | Rural       | Urban       |
| Haryana                        | 96.8                    | 96.9        | 96.8        | 79.3                     | 80.1        | 77.6        |
| Delhi                          | 96.1                    | 90.0        | 96.2        | 88.2                     | 78.8        | 88.4        |
| Rajasthan                      | 97.2                    | 97.5        | 95.8        | 90.0                     | 91.3        | 85.5        |
| Uttar Pradesh                  | 96.8                    | 98.5        | 91.1        | 91.9                     | 94.3        | 83.9        |
| Bihar                          | 98.4                    | 98.6        | 97.3        | 92.0                     | 92.1        | 90.6        |
| Chhattisgarh                   | 94.4                    | 96.3        | 86.5        | 90.4                     | 91.3        | 86.8        |
| Madhya Pradesh                 | 97.3                    | 98.3        | 95.0        | 89.9                     | 92.2        | 84.5        |
| Gujarat                        | 91.8                    | 94.4        | 88.2        | 77.0                     | 81.7        | 70.9        |
| Daman & Diu (UT)               | 86.0                    | 88.3        | 84.8        | 78.0                     | 77.1        | 78.5        |
| Dadra & Nagar Haveli (UT)      | 85.1                    | 86.1        | 83.4        | 79.7                     | 83.4        | 73.7        |
| Karnataka                      | 94.6                    | 96.6        | 90.7        | 81.1                     | 82.0        | 79.3        |
| Goa                            | 91.0                    | 91.1        | 91.0        | 76.7                     | 73.1        | 79.3        |
| Lakshadweep (UT)               | 90.1                    | 89.8        | 90.2        | 85.9                     | 91.4        | 84.3        |
| Kerala                         | 88.9                    | 90.1        | 87.7        | 83.3                     | 84.6        | 81.9        |
| Tamil Nadu                     | 98.0                    | 98.8        | 97.4        | 91.8                     | 94.1        | 90.3        |
| Puducherry (UT)                | 98.2                    | 99.6        | 97.6        | 92.5                     | 95.1        | 91.3        |
| Jammu & Kashmir                | 96.2                    | 98.4        | 90.7        | 88.9                     | 90.0        | 85.9        |
| Himachal Pradesh               | 95.2                    | 95.0        | 96.3        | 82.5                     | 83.3        | 77.1        |
| Uttarakhand                    | 97.7                    | 97.6        | 98.0        | 86.8                     | 88.8        | 82.0        |
| Punjab                         | 93.4                    | 94.5        | 91.0        | 84.2                     | 86.4        | 78.9        |
| Chandigarh (UT)                | 89.4                    | 88.8        | 89.4        | 74.3                     | 68.4        | 74.3        |
| Arunachal Pradesh              | 99.2                    | 98.9        | 100.0       | 94.0                     | 93.1        | 97.1        |
| Nagaland                       | 99.3                    | 99.3        | 99.1        | 96.3                     | 97.7        | 92.9        |
| Manipur                        | 99.5                    | 99.8        | 99.0        | 85.9                     | 89.1        | 80.0        |
| Mizoram                        | 94.8                    | 96.3        | 93.5        | 88.4                     | 90.6        | 86.5        |
| Tripura                        | 96.1                    | 97.4        | 92.2        | 87.1                     | 89.1        | 81.1        |
| Assam                          | 98.1                    | 98.4        | 95.5        | 84.0                     | 84.3        | 81.9        |
| West Bengal                    | 98.4                    | 99.7        | 97.2        | 88.8                     | 90.4        | 87.2        |
| Jharkhand                      | 96.0                    | 97.2        | 91.7        | 89.2                     | 90.2        | 85.8        |
| Orissa                         | 98.1                    | 98.8        | 94.4        | 93.8                     | 95.4        | 86.5        |
| Maharashtra                    | 98.1                    | 99.7        | 96.6        | 84.5                     | 89.1        | 80.3        |
| Andhra Pradesh                 | 95.6                    | 96.6        | 92.9        | 93.9                     | 95.0        | 90.8        |
| Andaman & Nicobar Islands (UT) | 98.5                    | 98.3        | 98.9        | 92.3                     | 93.0        | 90.9        |
| Telangana                      | 94.9                    | 97.6        | 89.4        | 91.6                     | 94.4        | 86.4        |
| <b>India</b>                   | <b>95.8</b>             | <b>97.2</b> | <b>93.4</b> | <b>87.3</b>              | <b>89.6</b> | <b>83.6</b> |



## 2.6 LASI SURVEY INSTRUMENTS

The LASI survey instrument comprised of the following three survey schedules, whose contents are summarized below:

- (i) **Household Survey Schedule:** This schedule was administered to one per HH to all consenting randomly selected HHs, and the information was collected from one or more knowledgeable adults in the HH. It includes the following modules: Household Roster (Cover Screen), Housing and Environment, Household Consumption, Household Assets and Debts, Household Income, and Household Health Insurance.

The HH survey started with the HH roster (cover screen), which contains questions about the demographics of each HH member, deaths in the last two years, and details about the deceased HH members. The roster also provides information about the key informants for the following HH modules: (1) housing and environment, consisting of questions about the HH's physical dwelling, electricity, water facility, sanitation, and indoor air pollution; (2) consumption, designed to collect data on both market-purchased and home-produced consumption at the HH level, food consumption in the last 7 days, non-food consumption in the last year, and HH health expenditures for outpatient and inpatient care; (3) assets and debts, including detailed questions appropriate to the Indian context and residential history; (4) HH income, which attempts to determine the total income of all HH members from all sources, including public transfers and remittances from non-HH members; and 5) HH health insurance, designed to collect information on health insurance coverage for each member of the HH.

- (ii) **Individual Survey Schedule:** This schedule was administered to each consenting respondent age 45 and above and their spouses (irrespective of age) in the sampled HHs. The individual survey was designed to collect detailed information about individuals in the following sections. (1) The demographics module includes age (month and year of birth), sex, religion, caste, marital status, literacy, education, and language. (2) The work, retirement, and pension module includes questions about past and current work, including self-employment and agriculture; job characteristics; earnings from work; and retirement, which includes questions on official retirement pensions that are designed to reflect India's growing pension scheme. (3) The health modules consist of questions about overall health and specific chronic diseases, organ-based chronic health conditions; symptom-based health conditions; endemic diseases; health events, including injuries and falls; women's health; functional health; health behaviour; and food security. (4) The mental health module includes cognition, orientation, immediate and delayed memory, arithmetic, executive function, verbal fluency, and object naming; in the depression section, the Centre for Epidemiologic Studies Depression scale (CES-D) and the Composite International Diagnostic Interview scale-Short Form (CIDI-SF) are included. (5) The healthcare services utilization and healthcare financing module is designed to capture access to and use of different types of healthcare providers and health insurance coverage. (6) The family and social networks module includes detailed questions about all immediate family members, including alive and deceased parents, children, and siblings; social activities; and psychosocial measures of life satisfaction, emotional proximity, social status, physical and social characteristics of the neighbourhood, and experience of ill treatment. (7) The social welfare scheme module includes awareness and utilization of social security programmes aimed at the elderly, awareness and utilization of the various concessions given to the elderly, and awareness of the Maintenance of Welfare of Parents and Senior Citizens Act. (8) The experimental modules include time use, expectations, social connectedness, and vignettes.

In addition, the LASI includes an individual module on (9) biomarkers and direct health examination. The functional health markers are blood pressure, pulse rate, a lung function test (spirometry), and a vision test (near and distance visual impairment); the performance-based markers are grip strength, timed walk, and balance tests; and the anthropometric measurements are height, weight, waist circumference, and hip circumference. Additionally, dried blood spot (DBS) samples were collected for testing of a variety of molecular markers, including hs-C-reactive protein (hs-CRP), glycosylated haemoglobin (HbA1c), haemoglobin (Hb), Cytomegalovirus (CMV)/ Epstein-Barr Virus (EBV).

**(iii) Community Survey Schedule:** This survey is administered at the community level (i.e. villages in rural areas and CEBs in urban areas) and is designed to be answered by several key informants, including village-level elected representatives, panchayat staff, and government health programme staff and community leaders. The community schedule includes sections on population characteristics, infrastructure and common resources, the accessibility and availability of healthcare services, and the coverage of health and social welfare programmes.

## 2.7 SURVEY IMPLEMENTATION

### 2.7.1 House-listing

**Selection of HHs from villages/CEBs:** HHs were randomly selected from the HH list for each of the SSUs (rural villages and urban CEBs) using the HH listing frame, in which each of the HHs were serially numbered. HHs were selected in two phases. For CEBs, 31 HHs were selected from all HHs listed in the CEB (irrespective of their eligibility criteria) using the systematic random sampling method. Then, 4 additional HHs were selected from all HHs that had at least one-member age 65 or above (after excluding the HHs already selected in stratum 1). A similar approach was used for rural areas, with 28 and 4 HHs, respectively.

- In rural areas, of the 28 HHs in each site, 17-20 are likely to have at least one-member age 45 and above in addition to the 4 HHs selected with elderly members age 65 and above.
- In urban areas, of the 31 HHs in each site, 20 are likely to have at least one-member age 45 and above, in addition to the 4 HHs selected with elderly members age 65 and above.
- These sample size for each SSU was chosen to achieve the target sample size of a minimum of 28 completed interviews, and also to ensure that a sufficient sample size can be achieved in the follow-up waves considering the possibility of significant attrition due to mortality, mobility, or non-response.

**Merging of smaller villages:** All the villages in the selected sub-districts form the rural sampling frame. All villages with 5 to 49 HHs were merged with nearby villages to form larger village units. From this larger-merged village frame, the desired number of SSUs was selected using PPS.

**Segmentation of larger villages:** All villages with more than 500 HHs were segmented into smaller segments, as preparing a sampling frame of HHs in a large village is resource intensive. Further, using PPS sampling, two segments were systematically selected from all segments of segmented villages.

However, in all the northeast states (i.e. Assam, Meghalaya, Manipur, Arunachal Pradesh, Mizoram, Tripura, Nagaland, and Sikkim), Jammu & Kashmir, and all union territories (i.e. Andaman & Nicobar, Lakshadweep, Dadra & Nagar Haveli, Daman & Diu, Puducherry, and Chandigarh), villages with more than 300 HHs were segmented into smaller segments. Further, using PPS sampling, two segments were selected from all the segments in the segmented villages.

### ***2.7.2 Recruitment, training, and field work***

The LASI is a large-scale national survey operation covering all thirty states and six union territories of India. A survey of such magnitude with the methodological complexities of longitudinal design requires detailed planning, careful implementation, and strategic management. The feasibility of the survey implementation, protocols, and instruments were tested in a pilot LASI conducted in 2010 (Arokiasamy, 2011). The many stages of planning and LASI field implementation are described in the remainder of this section.

#### ***2.7.2.1 LASI survey manuals***

To standardize the questionnaire conventions, field protocols, and procedures across all the states, different manuals have been prepared and used for national-level training of trainers, state-level training of field investigators, and fieldwork supervision and monitoring. The manuals are comprehensive to ensure standardization, quality control, and control of non-sampling errors.

The specific manuals used for the LASI are as follows. The first is a mapping and listing manual which describes the essential steps for drawing location and layout maps of the selected sampling areas and listing all the structures and residential HHs. The second is a survey interview manual which contains comprehensive instructions for carrying out interviews, question-by-question protocols, outcome measures, and a detailed discussion of the questionnaires. The manual also provides the purpose of each question and ways to ask each question, probe for the answers, and record answer codes. Instructions for using a mini laptop (CAPI) for interviews and saving and downloading data are also provided in the interviewer manual. Third, because the biomarker section of the LASI includes a comprehensive range of physical tests and biomarkers, the biomarker manual provides instructions for conducting various direct health examinations for biological markers. Fourth, the supervisor's manual describes the roles and responsibilities of supervisors for all of the field work. This manual contains a list of items that must be carried by the supervisor and that are needed to implement the field survey, including field forms. Fifth, the CAPI manual covers details about the hardware, logins, error logins, main screen, and preferences and also provides details about the procedure for transferring data from an individual investigator's computer to the project-dedicated server with the help of supervisors' logins. The manuals also provide checklists for each part of the process.

#### ***2.7.2.2 Training of trainers***

Training of the field survey team is imperative not only to ensure that the participants have a good understanding of all the field tools and procedures but also to convince them of the importance of conducting the survey and adhering to all the survey protocols for conducting the survey. In each state, mapper and lister team trainings were conducted for 7 days, including field practice in both rural and urban areas. Each state agency conducted 35 days of training, including 5 days of field practice for interviewers and supervisors. Trainers trained by IIPS conducted these training workshops. The IIPS-appointed project officers for the state were present throughout each state's training. IIPS project coordinators, project managers, health coordinators, and senior project officers monitored these trainings, helped with training, and ensured that these trainings were conducted in accordance with the LASI's training guidelines and survey protocols. After each training, the capabilities and skills of each investigator were assessed to ensure that the investigators were capable of handling their assigned responsibilities. Throughout the training period, it was ensured that all the interviewers and investigators received a thorough understanding of the objectives and meanings of questions and extensive practice with the respective modules. The interviewers were trained for CAPI-based schedules to gain experience and to have better insights into the implementation of the survey protocol.

### ***2.7.2.3 State-level field investigators training***

Training of the field survey team is imperative not only to ensure that the participants have a good understanding of all the field tools and procedures but also to convince them of the importance of conducting the survey and adhering to all the protocols for conducting the survey. In each state, mapper and lister team trainings were conducted for 7 days, including field practice in both rural and urban areas. Each state agency conducted 35 days of training, including 5 days of field practice for interviewers and supervisors. Trainers trained by IIPS conducted these training workshops. The IIPS-appointed project officers for the state were present throughout each state's training. IIPS project coordinators, project managers, health coordinators, and senior project officers monitored these trainings, helped with training, and ensured that these trainings were conducted in accordance with LASI's training guidelines and survey protocols. After each training, the capabilities and skills of each investigator were assessed to ensure that the investigators were capable of handling their assigned responsibilities. Throughout the training period, it was ensured that all the interviewers and investigators received a thorough understanding of the objectives and meanings of questions and extensive practice with the respective modules. The interviewers were trained for CAPI-based schedules to gain experience and to have better insights into the implementation of the survey protocol.

### ***2.7.2.4 Main survey implementation***

The implementation of LASI fieldwork at the state level was sub-contracted to state-level field agencies. The main field survey was implemented in three phases with 130 field teams comprising 6 members. Each team consisted of one field supervisor, two female investigators, two male investigators, and one health investigator. The number of interviewing teams in each state varied according to the sample size for the state, and the interviewers were recruited by the state field agencies, taking into consideration their educational qualifications, previous experience with large-scale surveys, and other relevant qualifications. Each supervisor was responsible for obtaining sample HH lists and maps for each area where his/her team was working and for organizing travel and accommodation logistics for his/her team. Supervisors were also responsible for contacting local authorities to inform them about the survey and to gain their support and cooperation, securing all supplies and equipment necessary for their teams to complete their assigned interviews, and communicating any field problems to the field or senior coordinators at IIPS. Before commencing fieldwork, teams met with local officials and community leaders and shared printed informational brochures, including press releases in local newspapers, to heighten awareness and increase response rates.

### 2.7.2.5 Duration of the LASI field survey

The LASI field survey was conducted across 34 states from April 2017 to December 2018. The start and end dates by states or union territory are provided in Table 2.5

**Table 2.5 Start and end dates of survey, states/UTs, LASI Wave 1, 2017-19**

| Phase 1 States/UTs        | Survey Months 2017            |
|---------------------------|-------------------------------|
| Haryana                   | April- August, 2017           |
| Delhi                     | April- August, 2017           |
| Rajasthan                 | April- August, 2017           |
| Uttar Pradesh             | April- September, 2017        |
| Bihar                     | May- September, 2017          |
| Chhattisgarh              | April- August, 2017           |
| Madhya Pradesh            | April- August, 2017           |
| Gujarat                   | May- August, 2017             |
| Daman & Diu (UT)          | April- July, 2017             |
| Dadra & Nagar Haveli (UT) | April-July, 2017              |
| Karnataka                 | April- August, 2017           |
| Goa                       | May- August, 2017             |
| Lakshadweep (UT)          | September- December, 2017     |
| Kerala                    | June-October, 2017            |
| Tamil Nadu                | July- December, 2017          |
| Puducherry (UT)           | September- December, 2017     |
| Phase 2 States/UTs        | Survey Months, 2017-18        |
| Himachal Pradesh          | December 2017- February, 2018 |
| Uttarakhand               | December 2017- February,2018  |
| Punjab                    | May- February, 2019           |
| Chandigarh (UT)           | May- December, 2018           |
| Arunachal Pradesh         | April- September, 2018        |
| Nagaland                  | April- September, 2018        |
| Manipur                   | April- September, 2018        |
| Mizoram                   | April- September, 2018        |
| Phase 3 States/UTs        | Survey Months, 2018-19        |
| Jammu & Kashmir           | May- September, 2018          |
| Tripura*                  | August, 2018- January, 2019   |
| Meghalaya                 | July-December, 2019           |
| Assam*                    | June 2018- January, 2019      |
| West Bengal*              | July, 2018- January, 2019     |
| Jharkhand*                | August, 2018- February, 2019  |
| Odisha                    | August- December, 2018        |
| Maharashtra               | August- April, 2018           |
| Andhra Pradesh            | July- February, 2018          |
| Andaman & Nicobar         | July- December, 2018          |
| Telangana                 | July-November, 2018           |

\*Survey completed in 2018 however revisit of few SSUs were done in 2019.



**Privacy, Ethics and Informed Consent:** To maximize the cooperation of the sampled HHs and individuals, participants were provided with information brochures explaining the purpose of the survey, ways of protecting their privacy, and the safety of the health assessments as part of the ethics protocols. As per ethics protocols, consent forms were administered to each HH and age-eligible individual. In accordance with Human Subjects Protection, four consent forms were used in the LASI: Household Informed Consent, Individual Informed Consent, Consent for Blood Samples Collection for Storage and Future Use (DBS), and Proxy Consent. As part of the ethics protocols, participants were also provided with biomarker results report cards and referral letters if participant health measurements were outside the normal range.

**Supervision, Monitoring, and Quality Control:** Owing to the large size and complexity of the survey design, a three-tiered supervision and monitoring mechanism was implemented to minimize non-sampling error and ensure data quality. The monitoring procedures adopted during data collection are summarized below. Supervisors were given 10% of the completed HHs for validation with a randomly selected set of questions. Field teams were provided feedback based on direct observations, supervisor validations, and quality control analyses of the server to minimize errors. CAPI use and daily data transfers were also provided to give feedback to field agencies and teams to help ensure data quality. Section-wise and interviewer-wise error rates were provided on a regular basis, and state field agencies were asked to conduct briefing sessions with the teams.

## **2.8 SAMPLE WEIGHT**

### **2.8.1 Need for survey weights**

The LASI adopted a multistage stratified area probability cluster sampling design with stage stratification and 3-4 stages of sample selection. Therefore, to represent the LASI outcome indicators at the national and state levels, survey weights are required at the HH and individual levels. The purpose of the weights is to compensate for unequal selection probabilities at various levels of selection and to compensate for non-response. The LASI sample weight computation process consisted of the aggregation of selection probabilities in three stages at the PSU, SSU, and HH levels in addition to non-response and post-stratification adjustments to accurately represent the population characteristics.

The survey weight of a sampled person is the (estimated) number of individuals in the population which the person represents. For example, in the LASI, the number of HHs selected from each village (SSU) and CEB (SSU) is fixed at 32 and 35, respectively, irrespective of SSU size. This equal allocation of last-stage sampling units (HHs) in multi-stage cluster sampling is useful for managing interviewer workload in the field. However, this strategy leads to differential sampling rates for HHs belonging to different SSUs. Survey weights incorporate these differential sampling rates as well as adjustments for non-response and mismatches between the sampling and population distributions through post-stratification.

A weighted mean (or weighted proportion, e.g., prevalence of hypertension), where the weights are the survey weights, can estimate the true population mean (or proportion) in an approximately unbiased manner, whereas ignoring the survey weights in an analysis can lead to substantial bias. The extent of inefficiency depends on the variability in the survey weights. A small proportion of individuals with large weights can lead to substantial inefficiency. However, for descriptive analysis, it is usually recommended to consider weighted analysis, as the weighted estimator and its confidence interval offers a valid description of the population and the estimator (Korn and Graubard, 2011a).

## 2.8.2 Components of survey weights

Design weight: The design weight (or base weight) is the component of the survey weight that accounts for differences in selection probabilities, as follows from the sampling design. It is defined as the inverse of the inclusion probability of the HH or individual in the sample. In the LASI, the ultimate sampling unit is an HH. Within a selected HH, all adults and elderly men and women age **45 and above** and their spouses irrespective of age who resided in the sampled HHs were included in the sample. Hence, the design weight corresponding to the individual was the same as the design weight of the HH, as HH selection was the last stage of sample selection.

In the case of a three to four-stage sampling design, as in the LASI, the inclusion probability of an HH is the product of the inclusion probability in the first stage of sampling and the conditional inclusion probabilities in the later stage of sampling. Detailed calculations of design weights are given below.

The probability of selecting the  $k$ th HH from the  $a$ th state is  $\pi_{ka}$  where;  $a = 1, \dots, 35$ . The quantity  $\pi_{ka}$  is calculated as follows:

$$\begin{aligned}\pi_{ka} &= \text{Prob. (selecting the } k\text{th HH in the } a\text{th state)} \\ &= \text{Prob. (selecting the } k\text{th HH} \mid k\text{th HH} \in j\text{th SSU)} \\ &\quad \times \text{Prob. (selecting the } j\text{th SSU} \mid j\text{th SSU} \in i\text{th PSU)} \\ &\quad \times \text{Prob. (selecting the } i\text{th PSU from state } a) \\ &= P_{3kj} \times P_{2ji} \times P_{1ia}\end{aligned}$$

Now, for first-stage selection of PSUs using PPS sampling,

$$\begin{aligned}P_{1ia} &= \text{Prob. (selecting the } i\text{th PSU from state } a) \\ &= \frac{n_a x_i}{\sum_{i \in U_a} x_i};\end{aligned}$$

where  $n_a$  is the number of sampled PSUs selected from the  $a$ th (sub)state,  $x_i$  is the size measure (number of HHs) for the  $i$ th PSU, and  $U_a$  is the set of all PSUs belonging to the  $a$ th (sub)state. They were selected using a stratified sampling design. Selection probabilities were calculated separately for each sub-state region within a state.

Within a selected PSU, SSUs were selected separately from urban and rural areas. Consequently, second-stage selection probabilities were calculated separately for urban and rural areas of a PSU.

$$\begin{aligned}P_{2ji} &= \text{Prob. (selecting the } j\text{th SSU} \mid j\text{th SSU} \in i\text{th PSU)} \\ &= \frac{n_{iR} x_j}{\sum_{j \in U_{iR}} x_j}; \text{ for rural areas,} \\ &= \frac{n_{iU} x_j}{\sum_{j \in U_{iU}} x_j} \times \frac{1}{C_j}; \text{ for urban areas,}\end{aligned}$$

where  $n_{iR}$  and  $n_{iU}$  are the number of sampled villages and urban wards selected from the  $i$ th PSU, respectively;  $x_j$  is the size measure (number of HHs) for the  $j$ th village or urban CEB;  $U_{iR}$  and  $U_{iU}$  are the set of all villages and urban CEBs belonging to the  $i$ th PSU;  $C_j$  is the number of CEBs in the  $j$ th urban ward.

For third-stage selection of HHs from a selected SSU, we used systematic random sampling (SRS) method. Note that the SSU is a village in rural areas and a CEB in urban areas.

$$P_{3kj} = \text{Prob. (selecting the } k\text{th HH} \mid k\text{th HH} \in j\text{th SSU)}$$

$$= \begin{cases} \frac{n_R}{x_{sj}} \times \frac{S_j}{S_j}; & \text{for rural areas,} \\ \frac{n_U}{x_j}; & \text{for urban areas,} \end{cases}$$

where  $n_R$  (32) and  $n_U$  (35) are the number of sampled HHs from a village (or a village segment) and a CEB, respectively. For large villages (having approximately more than 500 HHs), as known after house-listing, segmentation was considered and  $s_j$  segments were randomly selected from the total number of segments ( $S_j$ ) in the large village. If no segmentation was needed, then  $s_j = S_j = 1$ . The quantity  $x_{sj}$  is the total number of HHs in the selected segments of the  $j$ th village and  $x_j$  is the total number of HHs in the  $j$ th CEB.

To select 32 HHs from a sampled village and 35 HHs from a sampled CEB, 28 or 31 HHs, respectively, were first selected from the total number of HHs listed in the village or CEB. Additionally, 4 HHs were selected from the total number of HHs having at least one member in the age group of 65 or above (after excluding already-selected HHs). Therefore, the selection probabilities for the HHs were calculated separately in these two stages of HH selection.

For each sampled HH, the design weight was calculated as:  $1/(P_{3kj} \times P_{2ji} \times P_{1ia})$ .

**Non-response:** Design weight was adjusted to account for non-response at the HH level. In LASI, non-response occurred only at the last stage of sampling (HH selection) as 100% coverage of PSUs (first stage) and SSUs (second stage) was achieved as per the sampling plan.

Non-response-adjusted weight is calculated as HH design weight  $\times$  (1/response rate). HH-level response rate is defined as the number of HHs which participated in the survey divided by the total number of age-eligible sampled HHs. For HH-level response rate calculation, HH participation was defined as the sampled HH having at least one individual who participated in the survey. For stage 1 of HH selection, the eligibility criterion was defined as the sampled HH having at least one member in the age group of 45 or above. The denominator for stage 1 of HH selection included only age-eligible HHs (identified through HH roster) out of 28 and 31 assigned HHs for rural and urban SSUs, respectively. To calculate the response rate for HHs selected in the second stage of sample selection, the denominator was 4. The numerator for both conditions was the number of HH participated.

**Post-stratification:** To reduce the bias in estimating outcome indicators due to differential coverage, post-stratification adjustments of the non-response-adjusted weights were performed. To this end, the non-response-adjusted survey weights were multiplied by a constant factor within a post-stratum so that the sum of the post-stratification adjusted weights matches with known external control totals, which are considered more reliable. External control totals were obtained from projections based on the recent census as well as from a survey having a larger sample size so that it can estimate the demographic distribution of the population with better accuracy. In addition to adjusting for sampling distributions, post-stratification also improves the accuracy of estimators by reducing their variability.

### 2.8.3 Two sets of survey weights

In the LASI, two sets of survey weights are of interest. One set of weights was used for generating national-level indicators, and another set is used to produce state-level indicators. Each set had the following different types of weights:

**Household weight:** The detailed calculation of non-response-adjusted weights at the HH level was described in the previous section. For the post-stratification adjustment of weights, we considered two post-strata (urban and rural) at the HH level. The external control totals were the number of HHs with at least one-member age 45 or above in specific post-strata (rural or urban). External control total estimates were obtained from NFHS-4 (2015-16).

$T_{ma}$  denotes the known control total number of HHs with at least one member age 45 or above in the  $m$ th post-stratum of state (obtained from NFHS-4), and  $w_{ka}^{(nr)}$  is the non-response-adjusted HH-level weight for the  $k$ th sampled HH from state  $a$ , as derived in the previous section. Then, the HH-level post-stratification adjusted weight  $w_{ka}^{(p)}$  is defined by

$$w_{ka}^{(p)} = w_{ka}^{(nr)} \frac{T_{ma}}{\sum_j \delta_{jma} w_{ja}^{(nr)}}, \text{ for } k \in m\text{th postratum, where}$$

$$\delta_{jma} = \begin{cases} 1, & \text{if the } j\text{th household belongs to the } m\text{th poststratum of state } a \\ 0, & \text{otherwise} \end{cases}$$

Note that  $w_{ka}^{(p)}$  is the final state-level HH weight used for estimating HH-level indicators at the state level.

For the national-level survey weights, non-response-adjusted HH-level weights were multiplied by a constant factor within a post-stratum so that the sum of the post-stratification adjusted weights matches with known external control totals at the national level.

**Individual weight:** Within a selected HH, all adults and elderly men and women age 45 and above and their spouses, irrespective of age, who resided in the sampled HHs were included in the sample. Hence, the design weight corresponding to the individual was the same as the design weight of the HH, as HH selection was the last stage of sample selection.

The design weight was adjusted for the individual-level non-response rate and subsequently were subject to post-stratification adjustments at the state and national level. It was calculated as individual design weight  $\times$  (1/response rate). The response rate is defined as the number of individuals who participated individual interviews divided by the total number of age-eligible individuals in the sampled age-eligible HHs. For post-stratification adjustments, the external control totals (total number of individuals age 45 and above in urban and rural areas) were obtained from the population projections based on the 2011 Census.

**Response rate:** In the LASI, two types of response rates were used: the HH response rate and the individual response rate. The HH response rate is defined as the number of HHs which participated in the survey divided by the total number of age-eligible sampled HHs. The individual response rate is defined as the number of individuals who participated in the survey divided by the total number of eligible individuals in the age-eligible sampled HHs. For stratum 1, the eligibility criteria are defined as individuals age 45 or above. For stratum 2, the eligibility criteria are defined as individuals age 65 or above.

Table 2.4 provides state-wise rural-urban HH and individual response rates by state or union territory. For India as a whole, the overall HH response rate is 96%, and the overall individual response rate is 87%. The HH response rate in urban areas is lower (93%) than the rural response rate (97%). Similarly, the individual response rate is higher in rural (89.6%) than in urban areas (83.6%). Across states, the HH response rate ranges from 99% in Arunachal Pradesh to 85% in Dadra & Nagar Haveli. The individual response rate ranges from 96% in Nagaland to 74% in Chandigarh.



**Table 2.6 Percent distribution of sample characteristics of age-eligible households, state/UTs, LASI Wave 1, 2017-18**

| States/Union Territory      | HH size      |               |               |              | HH having        |                  |               | Place of residence |               |              |              | Religion of the head of HH |                 |                 |                      | Caste of the head of HH |              |              |              | MPCE quintile |              |                      |  |  |
|-----------------------------|--------------|---------------|---------------|--------------|------------------|------------------|---------------|--------------------|---------------|--------------|--------------|----------------------------|-----------------|-----------------|----------------------|-------------------------|--------------|--------------|--------------|---------------|--------------|----------------------|--|--|
|                             | 1-2          | 3-4           | 5-6           | 7 or more    | Below 60 members | Above 60 members | Rural         | Urban              | Hindu         | Muslim       | Christian    | Other                      | Scheduled tribe | Scheduled caste | Other backward class | None of the above       | Poorest      | Poorer       | Middle       | Richer        | Richest      | Number of households |  |  |
| Chandigarh                  | 15.3         | 32.0          | 39.2          | 13.6         | 54.9             | 45.1             | 1.4           | 98.6               | 75.2          | 3.2          | 0.8          | 20.8                       | 1.0             | 20.3            | 18.9                 | 59.8                    | 8.8          | 8.5          | 16.3         | 20.3          | 46.2         | 651                  |  |  |
| Delhi                       | 7.3          | 30.7          | 39.1          | 23.0         | 57.0             | 43.0             | 2.1           | 97.9               | 75.9          | 16.3         | 0.9          | 6.9                        | 0.8             | 22.6            | 22.3                 | 54.3                    | 19.6         | 23.7         | 18.3         | 19.0          | 19.4         | 754                  |  |  |
| Haryana                     | 10.0         | 23.8          | 39.4          | 26.9         | 58.1             | 41.9             | 61.9          | 38.1               | 89.2          | 7.2          | 0.1          | 3.6                        | 0.3             | 21.7            | 32.8                 | 45.1                    | 15.9         | 21.6         | 21.9         | 24.2          | 16.3         | 1,251                |  |  |
| Himachal Pradesh            | 10.4         | 33.5          | 39.8          | 16.4         | 51.4             | 48.6             | 88.6          | 11.4               | 98.2          | 0.4          | 0.1          | 1.4                        | 4.8             | 33.1            | 15.7                 | 46.4                    | 8.1          | 14.7         | 17.6         | 22.8          | 36.8         | 805                  |  |  |
| Jammu & Kashmir             | 5.4          | 21.0          | 39.3          | 34.3         | 59.0             | 41.0             | 68.0          | 32.0               | 28.8          | 70.2         | 0.2          | 0.8                        | 4.4             | 9.5             | 10.2                 | 76.0                    | 4.2          | 8.7          | 16.7         | 29.0          | 41.3         | 957                  |  |  |
| Punjab                      | 10.9         | 26.9          | 41.8          | 20.3         | 52.4             | 47.6             | 76.1          | 23.9               | 25.8          | 0.7          | 0.7          | 72.8                       | 0.6             | 45.9            | 17.5                 | 36.0                    | 5.2          | 10.4         | 20.9         | 27.4          | 36.2         | 1,234                |  |  |
| Rajasthan                   | 17.5         | 22.1          | 32.5          | 27.9         | 54.6             | 45.4             | 73.5          | 26.5               | 93.8          | 3.7          | 0.0          | 2.5                        | 14.5            | 22.5            | 41.8                 | 21.3                    | 19.4         | 21.2         | 18.8         | 21.7          | 19.0         | 1,302                |  |  |
| Uttarakhand                 | 20.9         | 29.1          | 29.8          | 20.2         | 50.3             | 49.7             | 69.9          | 30.1               | 86.8          | 11.5         | 0.8          | 0.9                        | 4.1             | 20.7            | 16.5                 | 58.8                    | 20.2         | 19.5         | 21.5         | 19.4          | 19.5         | 863                  |  |  |
| Chhattisgarh                | 23.1         | 23.7          | 32.2          | 21.0         | 64.5             | 35.5             | 77.0          | 23.0               | 96.2          | 1.8          | 1.1          | 0.9                        | 34.7            | 11.2            | 46.8                 | 7.3                     | 44.4         | 25.2         | 13.0         | 10.3          | 7.1          | 1,189                |  |  |
| Madhya Pradesh              | 21.6         | 25.6          | 30.0          | 22.7         | 54.3             | 45.7             | 70.3          | 29.8               | 88.5          | 9.5          | 0.2          | 1.7                        | 14.8            | 16.6            | 49.8                 | 18.9                    | 23.2         | 21.2         | 16.7         | 21.5          | 17.4         | 1,690                |  |  |
| Uttar Pradesh               | 14.3         | 21.6          | 30.7          | 33.5         | 54.6             | 45.4             | 77.9          | 22.1               | 85.8          | 13.4         | 0.1          | 0.7                        | 1.3             | 27.9            | 43.0                 | 27.8                    | 26.5         | 25.3         | 21.8         | 14.9          | 11.6         | 2,747                |  |  |
| Bihar                       | 16.6         | 19.9          | 28.3          | 35.2         | 53.5             | 46.5             | 88.4          | 11.6               | 80.2          | 19.6         | 0.0          | 0.2                        | 2.7             | 21.4            | 54.3                 | 21.6                    | 30.2         | 26.5         | 20.0         | 13.6          | 9.8          | 2,083                |  |  |
| Jharkhand                   | 15.1         | 23.9          | 32.4          | 28.7         | 54.1             | 45.9             | 74.8          | 25.3               | 79.3          | 12.0         | 5.2          | 3.6                        | 19.4            | 11.2            | 52.4                 | 17.0                    | 26.2         | 26.4         | 21.2         | 15.5          | 10.7         | 1,408                |  |  |
| Odisha                      | 20.9         | 36.8          | 29.8          | 12.6         | 55.0             | 45.0             | 83.2          | 16.8               | 88.0          | 1.1          | 10.9         | 0.0                        | 28.0            | 18.9            | 34.4                 | 18.8                    | 33.6         | 22.5         | 19.2         | 14.4          | 10.4         | 1,645                |  |  |
| West Bengal                 | 19.8         | 35.8          | 30.6          | 13.8         | 55.4             | 44.6             | 64.0          | 36.1               | 79.5          | 18.5         | 0.2          | 1.8                        | 5.5             | 30.4            | 13.2                 | 51.0                    | 17.9         | 23.8         | 22.1         | 20.6          | 15.7         | 2,279                |  |  |
| Arunachal Pradesh           | 18.9         | 30.7          | 32.4          | 18.0         | 74.3             | 25.7             | 79.0          | 21.0               | 22.1          | 0.8          | 52.5         | 24.7                       | 80.5            | 4.8             | 1.2                  | 13.6                    | 14.4         | 12.0         | 19.7         | 21.5          | 32.3         | 702                  |  |  |
| Assam                       | 11.7         | 37.1          | 35.4          | 15.9         | 64.7             | 35.4             | 83.5          | 16.5               | 74.6          | 22.3         | 2.0          | 1.1                        | 15.1            | 9.7             | 39.6                 | 35.5                    | 23.3         | 25.0         | 19.6         | 18.2          | 14.0         | 1,511                |  |  |
| Manipur                     | 16.3         | 31.5          | 34.1          | 18.1         | 45.1             | 54.9             | 62.3          | 37.7               | 43.6          | 7.7          | 32.5         | 16.2                       | 34.7            | 9.1             | 25.2                 | 31.1                    | 7.7          | 14.9         | 16.4         | 25.7          | 35.4         | 860                  |  |  |
| Meghalaya                   | 8.9          | 24.1          | 29.2          | 37.8         | 54.0             | 46.1             | 77.3          | 22.7               | 13.5          | 0.4          | 81.0         | 5.2                        | 92.8            | 3.3             | 0.4                  | 3.6                     | 27.1         | 20.9         | 19.7         | 15.6          | 16.7         | 636                  |  |  |
| Mizoram                     | 16.2         | 23.9          | 32.3          | 27.6         | 46.6             | 53.4             | 45.7          | 54.3               | 0.6           | 0.2          | 99.2         | 0.0                        | 98.4            | 0.8             | 0.5                  | 0.3                     | 21.6         | 20.9         | 23.2         | 18.0          | 16.4         | 732                  |  |  |
| Nagaland                    | 33.6         | 34.2          | 23.9          | 8.4          | 45.5             | 54.5             | 72.3          | 27.8               | 5.5           | 5.2          | 89.3         | 0.1                        | 89.4            | 4.5             | 0.4                  | 5.7                     | 13.2         | 13.8         | 14.7         | 24.7          | 33.6         | 799                  |  |  |
| Tripura                     | 20.6         | 41.8          | 26.3          | 11.3         | 54.7             | 45.3             | 68.3          | 31.7               | 88.5          | 0.4          | 4.4          | 6.8                        | 30.3            | 28.8            | 25.8                 | 15.1                    | 15.8         | 17.0         | 21.9         | 23.7          | 21.6         | 721                  |  |  |
| Dadra & Nagar Haveli        | 17.0         | 30.4          | 29.7          | 23.0         | 69.9             | 30.2             | 37.7          | 62.3               | 83.1          | 8.9          | 5.6          | 2.4                        | 54.2            | 1.5             | 18.9                 | 25.4                    | 29.9         | 17.1         | 19.1         | 14.5          | 19.3         | 631                  |  |  |
| Daman & Diu                 | 22.9         | 36.7          | 24.8          | 15.6         | 46.1             | 53.9             | 11.2          | 88.8               | 92.7          | 3.0          | 2.3          | 2.0                        | 15.5            | 14.7            | 45.2                 | 24.7                    | 19.1         | 17.4         | 18.7         | 22.8          | 22.0         | 577                  |  |  |
| Goa                         | 14.0         | 41.0          | 33.7          | 11.4         | 42.9             | 57.1             | 37.6          | 62.4               | 79.5          | 3.6          | 16.8         | 0.1                        | 14.0            | 4.9             | 23.1                 | 58.0                    | 6.3          | 10.5         | 18.8         | 23.4          | 40.9         | 877                  |  |  |
| Gujarat                     | 17.1         | 26.0          | 33.2          | 23.7         | 54.2             | 45.8             | 56.4          | 43.6               | 88.2          | 10.6         | 0.8          | 0.5                        | 19.2            | 11.0            | 43.0                 | 26.8                    | 17.9         | 21.2         | 21.5         | 22.3          | 17.1         | 1,455                |  |  |
| Maharashtra                 | 19.0         | 29.5          | 32.5          | 19.0         | 51.5             | 48.5             | 53.9          | 46.1               | 77.7          | 12.4         | 1.1          | 8.8                        | 8.1             | 16.8            | 35.8                 | 39.3                    | 21.5         | 22.6         | 19.8         | 18.5          | 17.6         | 2,421                |  |  |
| Andaman & Nicobar Islands   | 19.3         | 34.3          | 33.7          | 12.7         | 55.0             | 45.0             | 61.2          | 38.8               | 59.1          | 7.2          | 33.5         | 0.2                        | 20.0            | 17.0            | 21.2                 | 41.8                    | 11.1         | 13.3         | 21.8         | 22.2          | 31.6         | 725                  |  |  |
| Andhra Pradesh              | 34.3         | 31.5          | 27.1          | 7.1          | 57.8             | 42.2             | 68.7          | 31.3               | 81.9          | 5.2          | 12.5         | 0.4                        | 5.9             | 21.2            | 46.6                 | 26.3                    | 11.5         | 15.7         | 18.8         | 25.2          | 28.9         | 1,511                |  |  |
| Karnataka                   | 16.2         | 35.9          | 32.7          | 15.1         | 57.8             | 42.2             | 65.9          | 34.1               | 85.2          | 14.2         | 0.0          | 0.6                        | 4.8             | 15.4            | 69.4                 | 10.4                    | 9.4          | 13.5         | 23.4         | 22.4          | 31.4         | 1,488                |  |  |
| Kerala                      | 20.8         | 39.0          | 29.5          | 10.7         | 44.2             | 55.8             | 50.6          | 49.4               | 58.3          | 19.5         | 22.0         | 0.3                        | 1.2             | 8.4             | 53.3                 | 37.1                    | 15.8         | 18.6         | 19.6         | 19.9          | 26.1         | 1,411                |  |  |
| Lakshadweep                 | 12.9         | 25.5          | 26.8          | 34.8         | 47.2             | 52.8             | 12.4          | 87.6               | 0.5           | 99.1         | 0.3          | 0.0                        | 92.7            | 1.7             | 4.8                  | 0.8                     | 37.8         | 22.2         | 17.5         | 11.5          | 11.0         | 627                  |  |  |
| Puducherry                  | 31.2         | 33.3          | 29.1          | 6.4          | 46.9             | 53.1             | 30.9          | 69.1               | 90.3          | 4.9          | 4.8          | 0.0                        | 0.9             | 17.6            | 73.6                 | 7.9                     | 27.3         | 25.5         | 20.4         | 16.5          | 10.4         | 839                  |  |  |
| Tamil Nadu                  | 37.5         | 34.3          | 23.3          | 5.0          | 50.6             | 49.4             | 49.3          | 50.7               | 89.5          | 3.4          | 7.0          | 0.1                        | 1.1             | 16.7            | 80.0                 | 2.2                     | 24.8         | 18.7         | 20.9         | 19.5          | 16.1         | 2,150                |  |  |
| Telangana                   | 30.4         | 30.2          | 28.6          | 10.9         | 57.6             | 42.4             | 63.9          | 36.1               | 84.5          | 10.7         | 3.5          | 1.3                        | 5.8             | 19.4            | 59.1                 | 15.7                    | 15.7         | 18.1         | 19.9         | 22.5          | 23.9         | 1,418                |  |  |
| <b>India</b>                | <b>19.8</b>  | <b>29.1</b>   | <b>31.0</b>   | <b>20.2</b>  | <b>54.7</b>      | <b>45.3</b>      | <b>68.4</b>   | <b>31.6</b>        | <b>81.1</b>   | <b>12.4</b>  | <b>2.9</b>   | <b>3.5</b>                 | <b>8.9</b>      | <b>20.1</b>     | <b>44.9</b>          | <b>26.1</b>             | <b>21.1</b>  | <b>21.1</b>  | <b>20.3</b>  | <b>19.1</b>   | <b>18.5</b>  | <b>42,949</b>        |  |  |
| <b>Number of households</b> | <b>8,130</b> | <b>12,791</b> | <b>13,501</b> | <b>8,527</b> | <b>24,068</b>    | <b>18,881</b>    | <b>27,576</b> | <b>15,373</b>      | <b>31,348</b> | <b>5,212</b> | <b>4,340</b> | <b>2,049</b>               | <b>7,499</b>    | <b>7,523</b>    | <b>16,080</b>        | <b>11,847</b>           | <b>8,591</b> | <b>8,590</b> | <b>8,589</b> | <b>8,590</b>  | <b>8,589</b> | <b>42,949</b>        |  |  |

## 2.9 SAMPLE CHARACTERISTICS OF THE LASI AGE-ELIGIBLE HHs

Table 2.6 presents the sample characteristics of LASI age-eligible HHs (at least one-member age 45 and above) for each state and union territory of India. Of all surveyed LASI age-eligible HHs in India, 20% have 1-2 members, 29% have 3-4 members, 31% have 5-6 members, and 20% have more than 7 members. Fifty-five percent of the age-eligible HHs had members with age less than 60, whereas 45% had members age 60 and above. The state pattern shows that the percentage of HHs with members age 60 and above is higher than the national average in the states of Kerala (56%), Lakshadweep (53%), Puducherry (53%), Tamil Nadu (49%), Himachal Pradesh (49%), Punjab (48%), Rajasthan (45%), and Uttarakhand (50%). However, the proportion of HHs with only members less than 60 years of age is comparatively higher than the national average in the states of Assam (65%), Haryana (58%), Jammu & Kashmir (59%), Chhattisgarh (65%), Dadra & Nagar Haveli (70%), Andhra Pradesh (58%), and Karnataka (58%).

By residence, 68% of LASI age-eligible HHs in India are in rural areas, and the remaining 32% are in urban areas. The percentage share of HHs in urban areas in the major states of India range from 51% in Tamil Nadu to 12% in Bihar. Eighty-one percent of the heads of LASI age-eligible HHs in India are Hindus, 12% are Muslim, 3% are Christian, and 4% are another religion. Across the major states of India, the percentage share of LASI age-eligible HHs with heads belonging to the Hindu religion ranges from 98% in Himachal Pradesh to 26% in Punjab. The percentage share of age-eligible HHs with heads belonging to the Muslim religion is comparatively higher in the states of Assam (22%), Kerala and Bihar (20%), West Bengal (19%), and Delhi (16%). The percentage share of LASI age-eligible HHs with Christian heads is comparatively higher in the states of Kerala (22%), Goa (17%), and Andhra Pradesh (12%) and in the north-eastern states of Mizoram (99%), Nagaland (89%), and Meghalaya (81%).

Overall, in India, 9% of heads of LASI age-eligible HHs belong to Scheduled tribe, 20% belong to Scheduled caste, 45% belong to other backward class, and 26% belong to none of these. Across the major states of India, the percentage share of LASI age-eligible HH heads belonging to a Scheduled tribe is comparatively higher in the states of Chhattisgarh (35%), Odisha (28%), Gujarat (19%), Madhya Pradesh (15%), Jharkhand (19%), Rajasthan (15%), and Goa (14%). The percentage share of HH heads belonging to Scheduled caste is higher in the states of Punjab (46%), West Bengal (30%), Andhra Pradesh (21%), Bihar (21%), Uttar Pradesh (28%), Himachal Pradesh (33%), Haryana (22%), Rajasthan (23%), Himachal Pradesh (33%), and Tripura (29%). Across the states of India, the share of HHs in the poorest MPCE quintile is higher in the states of Odisha (34%), Bihar (30%), Uttar Pradesh (27%), Madhya Pradesh (23%), Chhattisgarh (44%), and Rajasthan (19%).

**Table 2.7 Percent distribution of sample characteristics of age-eligible individual survey participants, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age          |          | Sex    |        | Marital status    |         | Place of residence                    |        |        | Religion |        |           | Caste  |                 | Educational Attainment |                      |              |              |                   | Current working status |                               |                   |                                              |              |        |
|---------------------------|--------------|----------|--------|--------|-------------------|---------|---------------------------------------|--------|--------|----------|--------|-----------|--------|-----------------|------------------------|----------------------|--------------|--------------|-------------------|------------------------|-------------------------------|-------------------|----------------------------------------------|--------------|--------|
|                           | less than 60 | Above 60 | Male   | Female | Currently married | Widowed | Divorced/ Separated/ Deserted/ others | Rural  | Urban  | Hindu    | Muslim | Christian | Others | Scheduled tribe | Scheduled caste        | Other backward class | None of them | No Schooling | less than 5 years | 5-9 years completed    | 10 or more years of schooling | currently working | worked in the past but currently not working | never worked | Number |
| Chandigarh                | 60.3         | 39.7     | 45.0   | 55.0   | 77.8              | 19.2    | 3.0                                   | 1.0    | 99.0   | 78.0     | 2.9    | 0.8       | 18.4   | 1.0             | 20.3                   | 17.7                 | 61.0         | 23.3         | 6.8               | 23.1                   | 46.8                          | 35.0              | 22.7                                         | 42.3         | 1,026  |
| Delhi                     | 62.0         | 38.0     | 44.8   | 55.3   | 81.0              | 18.0    | 1.1                                   | 1.7    | 98.3   | 76.5     | 16.9   | 1.1       | 5.6    | 0.8             | 24.2                   | 20.1                 | 55.0         | 38.1         | 2.7               | 24.3                   | 35.0                          | 35.3              | 20.6                                         | 44.1         | 1,319  |
| Haryana                   | 52.2         | 47.8     | 40.6   | 59.4   | 74.4              | 24.2    | 1.4                                   | 63.3   | 36.7   | 91.6     | 5.2    | 0.0       | 3.2    | 0.2             | 21.7                   | 30.3                 | 47.8         | 53.8         | 4.1               | 21.1                   | 21.0                          | 33.9              | 26.4                                         | 39.7         | 1,898  |
| Himachal Pradesh          | 52.7         | 47.4     | 40.2   | 59.8   | 76.0              | 21.9    | 2.1                                   | 91.2   | 8.8    | 97.2     | 0.3    | 0.1       | 2.4    | 4.8             | 25.7                   | 17.4                 | 52.1         | 34.0         | 9.5               | 31.1                   | 25.4                          | 55.2              | 29.6                                         | 15.2         | 1,388  |
| Jammu & Kashmir           | 50.9         | 49.1     | 43.2   | 56.9   | 79.1              | 19.1    | 1.7                                   | 68.8   | 31.2   | 77.8     | 71.1   | 0.3       | 0.8    | 4.6             | 8.8                    | 7.8                  | 78.8         | 63.0         | 2.3               | 16.7                   | 18.1                          | 20.6              | 17.6                                         | 61.9         | 1,613  |
| Punjab                    | 52.2         | 47.8     | 43.1   | 56.9   | 76.4              | 21.4    | 2.2                                   | 63.8   | 36.2   | 29.9     | 0.8    | 0.5       | 68.8   | 1.4             | 38.2                   | 19.1                 | 41.3         | 43.4         | 5.2               | 29.4                   | 22.1                          | 28.3              | 20.8                                         | 50.9         | 2,124  |
| Rajasthan                 | 50.1         | 49.9     | 42.5   | 57.5   | 79.0              | 20.2    | 0.7                                   | 75.0   | 25.0   | 93.7     | 3.3    | 0.0       | 3.0    | 15.0            | 22.4                   | 40.2                 | 22.5         | 64.1         | 7.2               | 15.9                   | 12.9                          | 45.8              | 32.7                                         | 21.5         | 2,244  |
| Uttarakhand               | 50.7         | 49.3     | 41.1   | 58.9   | 75.2              | 23.4    | 1.4                                   | 70.9   | 29.2   | 86.7     | 11.8   | 0.9       | 0.6    | 4.5             | 20.1                   | 16.1                 | 59.4         | 45.8         | 6.3               | 27.6                   | 20.3                          | 41.3              | 28.1                                         | 30.6         | 1,358  |
| Chhattisgarh              | 61.6         | 38.4     | 44.1   | 55.9   | 76.4              | 21.4    | 2.2                                   | 76.6   | 23.4   | 96.3     | 1.5    | 1.2       | 1.0    | 33.0            | 11.2                   | 47.2                 | 8.7          | 60.7         | 11.2              | 17.3                   | 10.8                          | 57.1              | 28.3                                         | 14.7         | 2,055  |
| Madhya Pradesh            | 52.4         | 47.6     | 46.4   | 53.6   | 79.0              | 18.7    | 2.3                                   | 72.5   | 27.5   | 87.9     | 10.2   | 0.1       | 1.7    | 14.3            | 15.5                   | 51.2                 | 19.1         | 52.8         | 12.8              | 20.6                   | 13.7                          | 48.4              | 30.8                                         | 20.8         | 2,914  |
| Uttar Pradesh             | 50.6         | 49.4     | 45.5   | 54.5   | 75.1              | 23.0    | 1.9                                   | 79.6   | 20.4   | 86.1     | 13.1   | 0.0       | 0.8    | 1.4             | 26.6                   | 42.4                 | 29.7         | 58.3         | 5.4               | 19.2                   | 17.1                          | 42.8              | 22.6                                         | 34.6         | 4,567  |
| Bihar                     | 46.1         | 53.9     | 44.1   | 55.9   | 80.4              | 18.5    | 1.1                                   | 88.0   | 12.0   | 82.4     | 17.4   | 0.0       | 0.2    | 2.6             | 21.5                   | 53.7                 | 22.1         | 65.5         | 4.6               | 16.1                   | 13.8                          | 43.5              | 23.0                                         | 33.5         | 3,520  |
| Jharkhand                 | 51.8         | 48.2     | 42.0   | 58.0   | 78.8              | 19.7    | 1.5                                   | 74.9   | 25.1   | 80.2     | 11.9   | 4.7       | 3.2    | 18.0            | 10.9                   | 52.7                 | 18.4         | 55.1         | 8.6               | 19.9                   | 16.4                          | 47.3              | 25.1                                         | 27.5         | 2,464  |
| Odisha                    | 56.0         | 44.0     | 43.2   | 56.8   | 77.2              | 20.2    | 2.6                                   | 84.8   | 15.2   | 89.2     | 1.0    | 9.8       | 0.0    | 26.7            | 18.7                   | 35.3                 | 19.3         | 45.7         | 17.7              | 24.4                   | 12.1                          | 49.5              | 16.8                                         | 33.7         | 2,917  |
| West Bengal               | 59.5         | 40.5     | 41.2   | 58.8   | 77.2              | 20.5    | 2.4                                   | 62.4   | 37.7   | 80.3     | 17.6   | 0.2       | 1.9    | 4.5             | 29.8                   | 12.3                 | 53.5         | 42.2         | 15.2              | 24.4                   | 18.2                          | 45.6              | 20.4                                         | 34.0         | 3,933  |
| Arunachal Pradesh         | 75.7         | 24.4     | 45.6   | 54.4   | 82.7              | 15.1    | 2.2                                   | 79.3   | 20.7   | 21.2     | 0.9    | 53.5      | 24.4   | 80.7            | 4.9                    | 39.0                 | 36.9         | 38.7         | 14.7              | 27.6                   | 19.1                          | 45.9              | 18.6                                         | 35.5         | 2,366  |
| Assam                     | 64.1         | 35.9     | 40.5   | 59.5   | 75.5              | 21.9    | 2.6                                   | 82.5   | 17.5   | 76.2     | 21.5   | 1.6       | 0.7    | 14.9            | 9.2                    | 27.6                 | 31.3         | 40.6         | 7.2               | 21.8                   | 30.4                          | 55.9              | 34.0                                         | 10.0         | 1,369  |
| Manipur                   | 53.3         | 46.7     | 42.0   | 58.0   | 75.5              | 20.4    | 4.1                                   | 62.8   | 37.2   | 45.3     | 7.9    | 32.8      | 14.0   | 34.1            | 8.1                    | 26.5                 | 33.3         | 37.2         | 24.1              | 22.4                   | 16.3                          | 55.2              | 19.7                                         | 25.2         | 969    |
| Meghalaya                 | 57.9         | 42.1     | 38.0   | 62.0   | 67.6              | 25.1    | 7.4                                   | 78.6   | 21.4   | 12.2     | 0.8    | 81.4      | 5.7    | 92.9            | 3.6                    | 0.3                  | 3.3          | 37.2         | 24.1              | 22.4                   | 16.3                          | 55.2              | 19.7                                         | 25.2         | 969    |
| Mizoram                   | 55.1         | 45.0     | 45.9   | 54.1   | 74.3              | 17.6    | 8.1                                   | 47.9   | 52.1   | 0.7      | 0.1    | 99.2      | 0.0    | 98.4            | 0.6                    | 0.5                  | 0.5          | 14.1         | 33.0              | 33.7                   | 19.2                          | 49.8              | 27.7                                         | 22.5         | 1,246  |
| Nagaland                  | 51.0         | 49.0     | 43.4   | 56.6   | 77.9              | 17.1    | 5.0                                   | 72.7   | 27.3   | 6.5      | 3.6    | 89.7      | 0.1    | 89.3            | 5.0                    | 0.4                  | 5.4          | 42.8         | 11.8              | 25.0                   | 20.4                          | 51.6              | 23.0                                         | 25.4         | 1,316  |
| Tripura                   | 60.7         | 39.3     | 40.6   | 59.4   | 78.1              | 20.5    | 1.4                                   | 68.6   | 31.4   | 89.1     | 0.2    | 3.7       | 7.1    | 29.3            | 28.5                   | 24.4                 | 17.8         | 35.1         | 16.1              | 36.7                   | 12.1                          | 50.0              | 18.3                                         | 31.7         | 1,195  |
| Dadra & Nagar Haveli      | 61.2         | 38.8     | 45.2   | 54.8   | 81.0              | 17.0    | 2.0                                   | 47.2   | 52.9   | 82.9     | 7.7    | 7.1       | 2.4    | 61.7            | 1.4                    | 18.5                 | 18.4         | 49.6         | 13.0              | 16.9                   | 20.4                          | 66.3              | 21.5                                         | 12.2         | 1,090  |
| Daman & Diu               | 52.5         | 47.5     | 38.6   | 61.4   | 72.4              | 24.4    | 3.2                                   | 21.3   | 78.7   | 93.4     | 2.8    | 3.1       | 0.7    | 15.7            | 13.4                   | 46.8                 | 24.1         | 30.4         | 15.3              | 32.3                   | 22.0                          | 37.6              | 40.9                                         | 21.5         | 991    |
| Goa                       | 54.4         | 45.7     | 39.9   | 60.2   | 75.5              | 21.6    | 2.9                                   | 33.5   | 66.5   | 77.0     | 5.3    | 17.4      | 0.3    | 12.4            | 4.2                    | 22.3                 | 61.1         | 27.5         | 14.6              | 24.9                   | 33.1                          | 26.2              | 30.2                                         | 43.5         | 1,427  |
| Gujarat                   | 55.0         | 45.0     | 41.7   | 58.3   | 75.5              | 22.3    | 2.2                                   | 58.1   | 41.9   | 88.9     | 9.8    | 0.9       | 0.5    | 19.4            | 12.0                   | 42.2                 | 26.5         | 40.8         | 18.0              | 24.7                   | 16.6                          | 50.9              | 35.2                                         | 14.0         | 2,341  |
| Maharashtra               | 51.1         | 48.9     | 40.1   | 59.9   | 75.2              | 22.5    | 2.3                                   | 58.2   | 41.8   | 79.6     | 11.4   | 0.7       | 8.2    | 7.8             | 16.0                   | 36.8                 | 39.5         | 39.9         | 15.6              | 21.4                   | 23.1                          | 51.9              | 30.5                                         | 17.7         | 3,973  |
| Andaman & Nicobar Islands | 59.2         | 40.8     | 45.3   | 54.7   | 78.6              | 18.3    | 3.1                                   | 61.6   | 38.4   | 58.5     | 7.8    | 33.6      | 0.1    | 20.2            | 16.6                   | 19.8                 | 43.5         | 38.6         | 10.5              | 30.3                   | 20.7                          | 28.7              | 24.7                                         | 46.6         | 1,244  |
| Andhra Pradesh            | 58.0         | 42.0     | 41.9   | 58.1   | 76.1              | 21.4    | 2.6                                   | 70.1   | 29.9   | 82.7     | 5.2    | 12.0      | 0.2    | 6.3             | 19.1                   | 53.0                 | 21.5         | 57.2         | 7.8               | 19.8                   | 15.3                          | 49.8              | 30.3                                         | 19.9         | 2,679  |
| Karnataka                 | 59.9         | 40.1     | 39.0   | 61.0   | 74.4              | 22.5    | 3.1                                   | 64.8   | 35.2   | 86.6     | 11.1   | 1.9       | 0.4    | 4.0             | 13.2                   | 73.4                 | 9.4          | 46.4         | 13.9              | 16.9                   | 22.8                          | 51.5              | 27.9                                         | 20.7         | 2,420  |
| Kerala                    | 48.4         | 51.6     | 38.5   | 61.5   | 74.6              | 21.5    | 3.9                                   | 51.8   | 48.2   | 58.8     | 18.5   | 22.7      | 0.1    | 1.3             | 7.6                    | 52.7                 | 38.4         | 9.2          | 19.5              | 29.9                   | 41.4                          | 27.0              | 30.5                                         | 42.5         | 2,497  |
| Lakshadweep               | 52.4         | 47.6     | 38.0   | 62.0   | 72.9              | 24.0    | 3.2                                   | 11.9   | 88.1   | 0.6      | 99.3   | 0.0       | 0.1    | 93.1            | 1.6                    | 4.5                  | 0.7          | 22.3         | 19.1              | 37.0                   | 21.6                          | 19.0              | 21.2                                         | 59.8         | 1,139  |
| Puducherry                | 53.1         | 46.9     | 39.1   | 60.9   | 65.2              | 23.4    | 11.4                                  | 29.9   | 70.1   | 91.3     | 3.9    | 4.8       | 0.0    | 0.8             | 17.5                   | 73.9                 | 7.8          | 31.2         | 8.0               | 30.6                   | 30.2                          | 38.5              | 22.5                                         | 39.0         | 1,428  |
| Tamil Nadu                | 54.1         | 45.9     | 39.6   | 60.4   | 65.2              | 24.8    | 10.0                                  | 50.7   | 49.4   | 90.3     | 3.3    | 6.2       | 0.2    | 1.1             | 16.1                   | 81.6                 | 1.2          | 41.5         | 10.0              | 28.4                   | 20.1                          | 47.3              | 26.0                                         | 26.7         | 3,530  |
| Telangana                 | 55.4         | 44.6     | 40.7   | 59.4   | 72.9              | 25.1    | 2.0                                   | 64.9   | 35.1   | 84.6     | 10.6   | 3.6       | 1.1    | 5.9             | 18.1                   | 64.1                 | 12.0         | 65.8         | 7.3               | 11.5                   | 15.5                          | 51.0              | 32.3                                         | 16.8         | 2,475  |
| India                     | 53.6         | 46.4     | 42.2   | 57.8   | 75.6              | 21.6    | 2.7                                   | 67.9   | 32.1   | 82.1     | 11.0   | 3.4       | 3.6    | 8.2             | 19.5                   | 44.5                 | 27.9         | 49.1         | 10.7              | 21.5                   | 18.7                          | 45.7              | 26.2                                         | 28.1         |        |
| Number                    | 40,786       | 31,464   | 30,569 | 41,681 | 55,396            | 14,593  | 2,261                                 | 46,534 | 25,716 | 52,973   | 8,667  | 7,215     | 3,395  | 12,509          | 12,046                 | 27,184               | 20,511       | 33,211       | 8,054             | 16,909                 | 14,076                        | 32,990            | 17,964                                       | 21,296       | 72,250 |

## 2.10 SAMPLE CHARACTERISTICS OF THE LASI AGE-ELIGIBLE INDIVIDUAL OF SURVEY PARTICIPANTS

Table 2.7 presents the sample characteristics of LASI age-eligible individual survey participants age 45 and above, including their spouses less than age 45, by states/UTs. Overall, 54% individuals interviewed in the LASI are age 45–59, including their spouses, and 46% are age 60 and above. Across the states, the percentage share of individuals interviewed age 60 and above is comparatively higher in the states of Haryana (48%), Bihar (54%), Rajasthan (50%), Jharkhand (48%), Uttar Pradesh (49%), and Madhya Pradesh (48%). The percentage share of individuals interviewed age 45–59, including spouses less than 45 is greater than the national average in the states of Delhi (62%), Chhattisgarh (62%), Assam (64%), Karnataka (60%), West Bengal (60%), Odisha (56%), Gujarat (55%), Andhra Pradesh (58%), and Telangana (55%).

Overall, in India 58% of LASI age-eligible participants are women, and 42% are men. The percentage share of female age-eligible survey participants is greater than the national average in the states of West Bengal (59%), Haryana (59%), Himachal Pradesh (60%), Uttarakhand (59%), Assam (60%), Goa (60%), Maharashtra (60%), Karnataka (61%), Kerala (62%), Tamil Nadu (60%), and Telangana (59%).

In India, 68% of LASI age-eligible respondents are from rural areas, and 32% are from urban areas. In the majority of the states, the percentage share of LASI age-eligible respondents from rural areas is higher than the national average. Eighty-two percent of LASI age-eligible individuals are Hindu, 11% are Muslim, 3% are Christian, and 4% are other religions. A higher proportion of age-eligible individuals are Muslims in the states of Assam (22%), Kerala (18%), West Bengal (18%), Bihar (17%), and Delhi (17%).

In India overall, 76% of the age-eligible respondents are currently married, 22% are widowed, and 3% are divorced, separated, or deserted. A higher proportion of age-eligible individuals are widowed in the states of Tamil Nadu (25%), Telangana (25%), Karnataka (23%), Haryana (24%), Uttar Pradesh (23%), and Uttarakhand (23%). The percentage share of divorced, separated, and deserted individuals is higher in the states of Tamil Nadu (10%), Puducherry (11%), and north-eastern states of Meghalaya (7%) and Mizoram (8%).

Forty-nine percent of LASI age-eligible respondents have had no schooling, 11% have had less than 5 years of schooling, 22% have had 5–9 years of schooling and 19% have had 10 or more years of schooling. The percentage share of LASI age-eligible respondents with no schooling is higher than the national average in the states of Uttar Pradesh (58%), Chhattisgarh (61%), Rajasthan (64%), Bihar (66%), Jharkhand (55%), and Telangana (66%), whereas the percentage share of LASI age-eligible respondents with 10 or more years of schooling is comparatively higher in the states of Delhi (35%), Himachal Pradesh (25%), Punjab (22%), Goa (33%), Kerala (41%), Karnataka (23%), and Maharashtra (23%).

Forty-six percent of LASI age-eligible respondents are currently working, 26% worked in the past but are not currently working, and 28% never worked. The percentage of currently working LASI age-eligible respondents is higher than the national average in the states of Himachal Pradesh (55%), Maharashtra (52%), Chhattisgarh (57%), Karnataka (52%), and Telangana (51%).

**Figure 2.4 Percentage of age-eligible HHs with age 60 and above members, LASI, Wave 1, 2017-18**

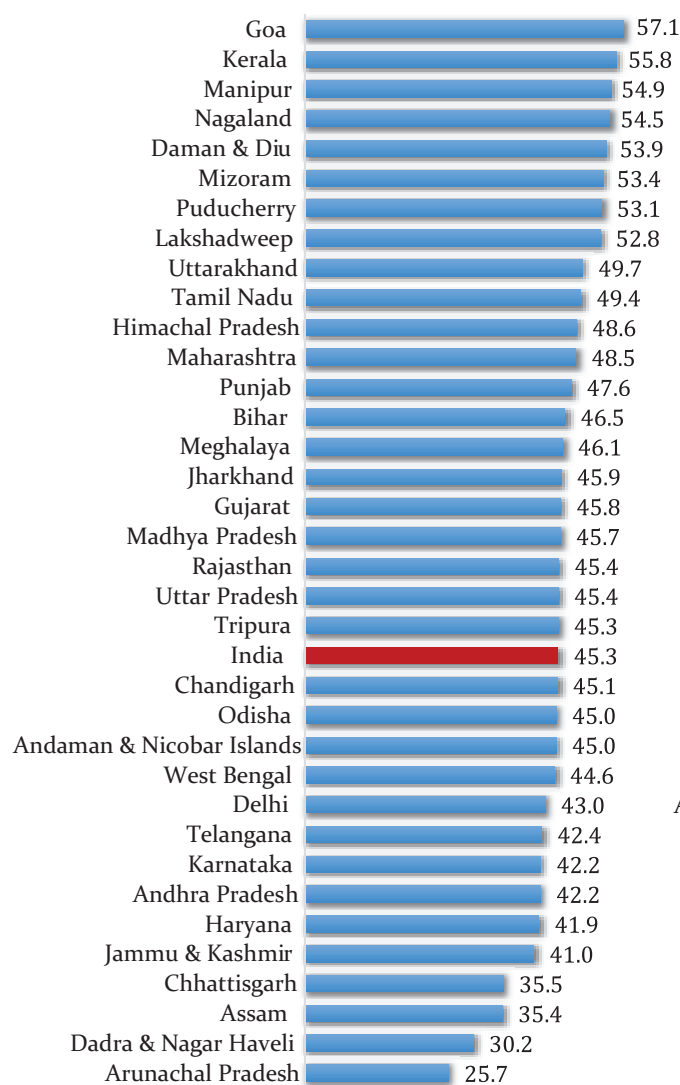
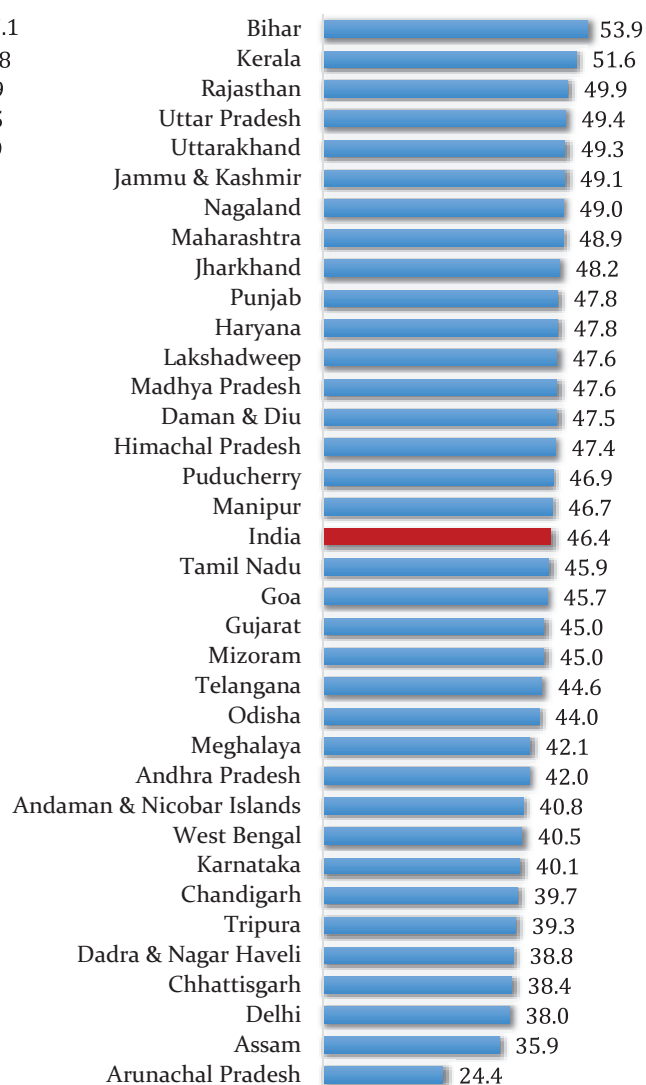


**Figure 2.5 Percentage of age-eligible individuals age 60 and above, LASI, Wave 1, 2017-18**





### 3. HOUSEHOLD POPULATION CHARACTERISTICS, HOUSING, AND ENVIRONMENT

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In the Longitudinal Aging Survey in India (LASI), a household roster, referred to as ‘cover screen’, was canvassed among all sampled households to collect a set of key information about each member of the sampled household. The household cover screen included questions on socio-demographics: name of the household member, resident status, relationship to the head of the household, sex, age, educational attainment, and marital status. In addition, information was collected on the caste and religion of the head of the household and on the death of any household member in the two years prior to the survey. This included the name of the deceased, age, sex, year, and month of death, the main cause of death and the decedent’s relationship with the head of the household.

The cover screen was completed for all sampled households including age-eligible and non-age-eligible households. The information collected from the cover screen is used in:

- identifying LASI age-eligible households and individuals age 45 years and above and their spouses, regardless of their age.
- identifying the key informant or the most knowledgeable person from the household who would provide information on the household’s economic condition.
- establishing baseline household data to serve as a sampling frame for subsequent waves of LASI.

To complete the cover screen accurately, the terms **household**, **head of the household**, and **member of the household** are defined as follows. These definitions have been adopted from the Census of India.

**Household:** A ‘household’ constitutes a group of persons who normally live together and take their meals from a common kitchen unless exigencies of work prevent any of them from doing so. Persons in a household may be related, unrelated, or a mix of both.

**Head of the household:** ‘A member of the household who is recognized to be so by the other household members as the head of the household’. This person may be acknowledged as the head on the basis of age (older), sex (generally, but not necessarily, male), and economic status (main provider) of the member, or any other reason. The household members determine who heads the household.

**Member of the household:** A household may comprise one person or a group of persons who usually live together and eat from the same kitchen.

**Usual resident:** A person who has lived at the place of enumeration (this house) for 6 months or more during the last year or intends to live there for at least 6 months in the next year. It also includes those members who were elsewhere at the time of the survey for a short period (less than 6 months) but intend to return in the future.

The resident status of the household members was identified based on the following inclusion and exclusion criteria.

| Inclusion Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Exclusion Criteria                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>A person who has lived at the place of enumeration (this house) for 6 months or more during the last year or intends to live there for at least 6 months in the next year. This may include a pregnant woman who has gone to her natal house for delivery and is expected to return to the household soon and 'rotating' parents, or older people who have lived in the household for more than 6 months during the last year.</li> </ul> | <ul style="list-style-type: none"> <li>A person who has neither lived at the place of enumeration for 6 months during the last year nor intends to live there for at least 6 months in the future.</li> <li>People living in institutions such as old age homes, mental asylums, ashrams, and religious homes, and incarcerated people (prison inmates). Institutions are excluded in the LASI sampling realm.</li> </ul> |

### 3.1 HOUSEHOLD POPULATION CHARACTERISTICS

#### 3.1.1 Age-sex distribution

In the LASI survey, the total household population is 3,00,017 from 65,506 sampled households. Table 3.1 presents the distribution of the household population of India by five-year age groups and broad age groups by sex and residence. The age-sex distribution of the household population of India is depicted in a population pyramid (Figure 3.1). The proportion of population according to broad age groups is as follows: 27% are children age 0-14 years, 61% are the working-age population age 15-59 years, and 13% are the elderly, age 60 and above. The population pyramid illustrates that India's population is relatively young; however, the pyramid also shows a substantial decline in fertility in India over the last 10 years. The proportion of children aged 0-4 is 9% in rural areas as compared to 7% in urban areas. Urban India has a comparatively higher share (65%) of the working-age population in the age group 15-59 than has rural India (59%).

**Figure 3.1 Population pyramid, India, LASI Wave 1, 2017-18**

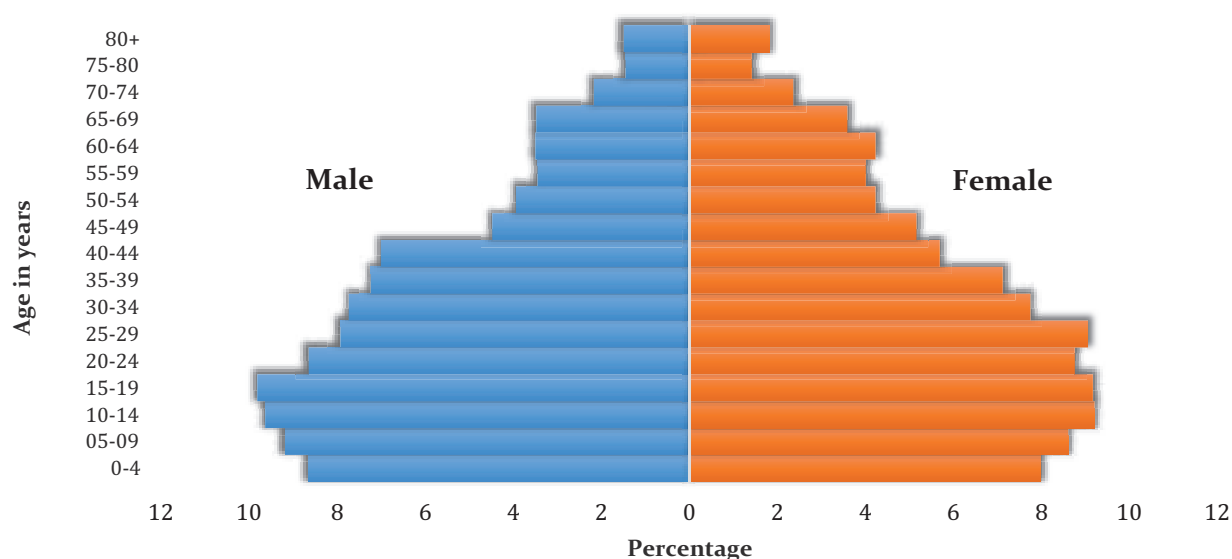


**Table 3.1 Percent distribution of household population by sex and place of residence according to age group, India, LASI Wave 1, 2017-18**

| Age group                  | Rural         |               |                 | Urban         |               |                 | Total           |                 |                 |
|----------------------------|---------------|---------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|
|                            | Male          | Female        | Total           | Male          | Female        | Total           | Male            | Female          | Total           |
| <b>Five-year age group</b> |               |               |                 |               |               |                 |                 |                 |                 |
| 0-4                        | 9.0           | 8.7           | 8.8             | 7.9           | 6.6           | 7.3             | 8.7             | 8.0             | 8.3             |
| 5-9                        | 9.9           | 9.3           | 9.6             | 7.8           | 7.2           | 7.5             | 9.2             | 8.6             | 8.9             |
| 10-14                      | 10.4          | 9.6           | 10.0            | 8.2           | 8.4           | 8.3             | 9.7             | 9.2             | 9.4             |
| 15-19                      | 10.0          | 9.9           | 10.0            | 9.4           | 7.6           | 8.5             | 9.8             | 9.2             | 9.5             |
| 20-24                      | 8.7           | 8.7           | 8.7             | 8.5           | 8.8           | 8.6             | 8.7             | 8.8             | 8.7             |
| 25-29                      | 8.0           | 8.1           | 8.1             | 7.8           | 11.0          | 9.3             | 7.9             | 9.1             | 8.5             |
| 30-34                      | 6.9           | 7.2           | 7.0             | 9.6           | 8.9           | 9.3             | 7.8             | 7.7             | 7.8             |
| 35-39                      | 6.8           | 6.6           | 6.7             | 8.1           | 8.1           | 8.1             | 7.3             | 7.1             | 7.2             |
| 40-44                      | 6.5           | 5.4           | 5.9             | 8.2           | 6.2           | 7.2             | 7.0             | 5.7             | 6.4             |
| 45-49                      | 4.3           | 5.0           | 4.7             | 4.8           | 5.6           | 5.2             | 4.5             | 5.2             | 4.8             |
| 50-54                      | 3.7           | 4.0           | 3.9             | 4.4           | 4.7           | 4.5             | 4.0             | 4.2             | 4.1             |
| 55-59                      | 3.3           | 4.1           | 3.7             | 3.7           | 3.8           | 3.8             | 3.5             | 4.0             | 3.7             |
| 60-64                      | 3.6           | 4.2           | 3.9             | 3.3           | 4.2           | 3.7             | 3.5             | 4.2             | 3.9             |
| 65-69                      | 3.6           | 3.6           | 3.6             | 3.3           | 3.5           | 3.4             | 3.5             | 3.6             | 3.5             |
| 70-74                      | 2.4           | 2.4           | 2.4             | 1.8           | 2.2           | 2.0             | 2.2             | 2.4             | 2.3             |
| 75-79                      | 1.4           | 1.5           | 1.5             | 1.6           | 1.2           | 1.4             | 1.5             | 1.4             | 1.4             |
| 80 +                       | 1.5           | 1.7           | 1.6             | 1.6           | 2.1           | 1.8             | 1.5             | 1.8             | 1.7             |
| <b>Broad age group</b>     |               |               |                 |               |               |                 |                 |                 |                 |
| 0-14                       | 29.3          | 27.5          | 28.4            | 24.0          | 22.2          | 23.1            | 27.5            | 25.8            | 26.7            |
| 15-59                      | 58.3          | 59.1          | 58.7            | 64.5          | 64.7          | 64.6            | 60.3            | 60.9            | 60.6            |
| 60+                        | 12.4          | 13.4          | 12.9            | 11.6          | 13.2          | 12.4            | 12.1            | 13.4            | 12.7            |
| <b>Number</b>              | <b>96,384</b> | <b>95,998</b> | <b>1,92,383</b> | <b>54,804</b> | <b>52,825</b> | <b>1,07,629</b> | <b>1,51,188</b> | <b>1,48,823</b> | <b>3,00,012</b> |

**Table 3.2 Percent distribution of household population by broad age group according to place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Rural       |             |             |                 | Urban       |             |             |                 | Total       |             |             |                 |
|---------------------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|-----------------|
|                           | 0-14        | 15-59       | 60+         | Number          | 0-14        | 15-59       | 60+         | Number          | 0-14        | 15-59       | 60+         | Number          |
| <b>India</b>              | <b>28.4</b> | <b>58.7</b> | <b>12.9</b> | <b>1,92,383</b> | <b>23.1</b> | <b>64.6</b> | <b>12.4</b> | <b>1,07,629</b> | <b>26.7</b> | <b>60.6</b> | <b>12.7</b> | <b>3,00,012</b> |
| <b>North</b>              |             |             |             |                 |             |             |             |                 |             |             |             |                 |
| Chandigarh                | 31.1        | 63.8        | 5.2         | 114             | 21.3        | 65.4        | 13.3        | 4,680           | 21.5        | 65.4        | 13.1        | 4,794           |
| Delhi                     | 19.5        | 71.3        | 9.2         | 113             | 25.4        | 66.3        | 8.3         | 5,960           | 25.3        | 66.4        | 8.3         | 6,073           |
| Haryana                   | 27.7        | 59.6        | 12.7        | 6,304           | 24.8        | 64.6        | 10.6        | 3,120           | 26.6        | 61.5        | 11.9        | 9,424           |
| Himachal Pradesh          | 20.9        | 62.0        | 17.1        | 4,377           | 21.0        | 67.8        | 11.2        | 756             | 20.9        | 62.6        | 16.5        | 5,133           |
| Jammu & Kashmir           | 28.6        | 60.9        | 10.5        | 5,949           | 20.3        | 66.5        | 13.2        | 1,866           | 26.2        | 62.5        | 11.3        | 7,815           |
| Punjab                    | 21.3        | 63.5        | 15.2        | 5,881           | 21.4        | 65.9        | 12.7        | 2,621           | 21.4        | 64.4        | 14.2        | 8,502           |
| Rajasthan                 | 31.7        | 56.8        | 11.5        | 8,400           | 25.0        | 64.7        | 10.3        | 2,480           | 30.0        | 58.8        | 11.2        | 10,880          |
| Uttarakhand               | 26.8        | 58.6        | 14.7        | 4,002           | 26.4        | 62.4        | 11.2        | 1,786           | 26.7        | 59.8        | 13.5        | 5,788           |
| <b>Central</b>            |             |             |             |                 |             |             |             |                 |             |             |             |                 |
| Chhattisgarh              | 27.5        | 61.9        | 10.6        | 6,956           | 25.9        | 66.1        | 8.0         | 1,939           | 27.1        | 62.9        | 10.0        | 8,895           |
| Madhya Pradesh            | 27.9        | 59.7        | 12.4        | 9,444           | 24.9        | 64.0        | 11.2        | 3,759           | 27.1        | 60.9        | 12.1        | 13,203          |
| Uttar Pradesh             | 33.8        | 56.1        | 10.1        | 19,787          | 26.4        | 63.1        | 10.5        | 5,455           | 32.1        | 57.7        | 10.2        | 25,242          |
| <b>East</b>               |             |             |             |                 |             |             |             |                 |             |             |             |                 |
| Bihar                     | 36.5        | 51.4        | 12.2        | 15,692          | 29.4        | 59.2        | 11.5        | 1,790           | 35.6        | 52.3        | 12.1        | 17,482          |
| Jharkhand                 | 31.6        | 55.0        | 13.4        | 8,985           | 25.7        | 62.7        | 11.6        | 2,335           | 30.2        | 56.9        | 12.9        | 11,320          |
| Odisha                    | 24.6        | 60.9        | 14.4        | 7,762           | 22.5        | 64.0        | 13.5        | 1,645           | 24.3        | 61.5        | 14.3        | 9,407           |
| West Bengal               | 24.0        | 63.7        | 12.3        | 7,009           | 18.9        | 65.3        | 15.9        | 6,310           | 22.3        | 64.3        | 13.5        | 13,319          |
| <b>Northeast</b>          |             |             |             |                 |             |             |             |                 |             |             |             |                 |
| Arunachal Pradesh         | 33.0        | 60.6        | 6.5         | 3,992           | 24.9        | 71.5        | 3.5         | 1,139           | 31.0        | 63.2        | 5.8         | 5,131           |
| Assam                     | 27.9        | 62.5        | 9.5         | 8,971           | 21.1        | 67.0        | 12.0        | 1,154           | 26.9        | 63.2        | 9.9         | 10,125          |
| Manipur                   | 27.4        | 60.0        | 12.6        | 3,663           | 21.6        | 62.2        | 16.3        | 1,645           | 25.3        | 60.8        | 13.9        | 5,308           |
| Meghalaya                 | 38.1        | 54.9        | 7.1         | 5,089           | 24.9        | 67.6        | 7.5         | 887             | 35.4        | 57.5        | 7.1         | 5,976           |
| Mizoram                   | 29.9        | 58.7        | 11.4        | 2,824           | 27.2        | 62.8        | 10.0        | 2,997           | 28.5        | 60.9        | 10.7        | 5,821           |
| Nagaland                  | 28.2        | 58.4        | 13.5        | 2,956           | 24.2        | 63.7        | 12.2        | 1,482           | 26.9        | 60.1        | 13.0        | 4,438           |
| Tripura                   | 24.4        | 62.7        | 12.9        | 3,294           | 20.1        | 67.2        | 12.7        | 1,051           | 23.2        | 64.0        | 12.8        | 4,345           |
| <b>West</b>               |             |             |             |                 |             |             |             |                 |             |             |             |                 |
| Dadra & Nagar Haveli      | 26.1        | 63.5        | 10.4        | 3,292           | 24.4        | 69.5        | 6.1         | 2,605           | 25.0        | 67.3        | 7.7         | 5,897           |
| Daman & Diu               | 18.6        | 67.4        | 14.0        | 1,331           | 20.2        | 66.7        | 13.1        | 3,526           | 20.0        | 66.8        | 13.2        | 4,857           |
| Goa                       | 21.6        | 64.6        | 13.8        | 2,174           | 19.9        | 64.4        | 15.7        | 2,957           | 20.5        | 64.4        | 15.1        | 5,131           |
| Gujarat                   | 26.5        | 61.3        | 12.2        | 6,278           | 22.0        | 63.5        | 14.5        | 4,404           | 24.5        | 62.3        | 13.2        | 10,682          |
| Maharashtra               | 23.7        | 59.0        | 17.3        | 6,708           | 23.4        | 63.8        | 12.8        | 8,500           | 23.5        | 61.3        | 15.2        | 15,208          |
| <b>South</b>              |             |             |             |                 |             |             |             |                 |             |             |             |                 |
| Andaman & Nicobar Islands | 22.6        | 64.8        | 12.6        | 2,804           | 23.7        | 66.5        | 9.9         | 1,656           | 23.0        | 65.5        | 11.5        | 4,460           |
| Andhra Pradesh            | 21.7        | 63.2        | 15.1        | 6,011           | 22.5        | 64.6        | 12.9        | 2,590           | 22.0        | 63.6        | 14.4        | 8,601           |
| Karnataka                 | 24.5        | 61.3        | 14.2        | 6,153           | 22.3        | 66.2        | 11.6        | 3,130           | 23.6        | 63.3        | 13.1        | 9,283           |
| Kerala                    | 21.6        | 57.7        | 20.7        | 3,824           | 20.7        | 60.8        | 18.5        | 3,939           | 21.2        | 59.3        | 19.6        | 7,763           |
| Lakshadweep               | 24.9        | 65.9        | 9.2         | 1,069           | 21.9        | 65.0        | 13.1        | 3,801           | 22.3        | 65.1        | 12.6        | 4,870           |
| Puducherry                | 21.7        | 64.7        | 13.6        | 1,468           | 21.3        | 61.3        | 17.4        | 3,107           | 21.4        | 62.4        | 16.3        | 4,575           |
| Tamil Nadu                | 20.1        | 62.5        | 17.4        | 4,250           | 18.7        | 65.8        | 15.5        | 7,110           | 19.4        | 64.2        | 16.4        | 11,360          |
| Telangana                 | 23.6        | 61.5        | 14.9        | 5,457           | 24.9        | 63.9        | 11.2        | 3,447           | 24.2        | 62.5        | 13.4        | 8,904           |

**Figure 3.2 Percentage of elderly age 60 and above of household population, states/UTs, LASI Wave 1, 2017-18**

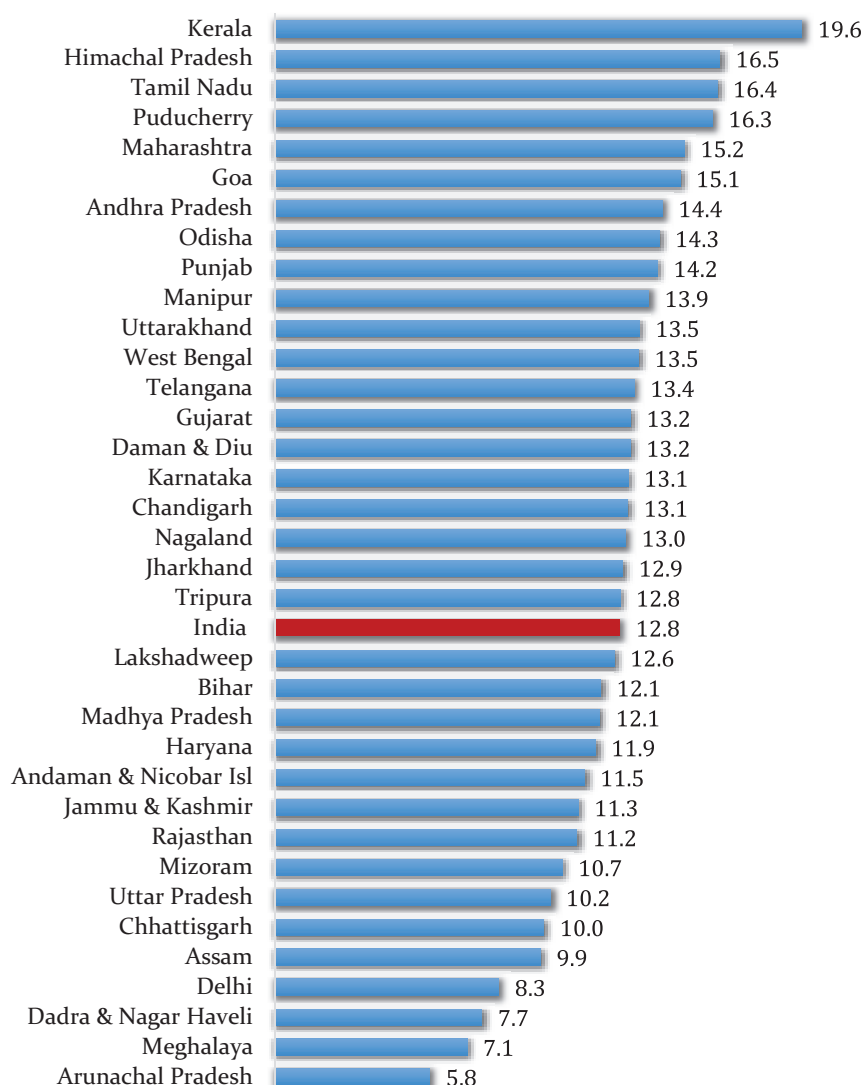


Figure 3.2 shows that of the total household population, the percentage of elderly age 60 and above is comparatively higher in the demographically advanced states of Kerala (20%), Himachal Pradesh (17%), Tamil Nadu (16%), Puducherry (16%), and Goa (15%), and this proportion is lowest in Arunachal Pradesh (6%). In 15 states/union territories, the proportion of elderly is less than the national average of 13%.



### 3.1.2 Sex ratio and dependency ratio

Figures 3.3 and 3.4 presents the sex ratio and dependency ratio in India according to place of residence.

The overall sex ratio of the household population of India (Figure 3.3) is 984 females per 1000 males. The sex ratio is higher in rural India (996) compared to that in urban India (964). The sex ratio in the children's age group 0-14 years is (932), which is higher in rural (941) than in urban (912) India and is in favour of males. The sex ratio of the elderly population in age 60 and above is 1065; higher in urban (1084) than in rural (1055) India and in favour of females. For the working age group of 15-59 years, the sex ratio is higher in rural areas (1011 females per 1000 males) than the ratio in urban areas (963) with a national average of 993.

The dependency ratio is an indicator of the demographic dependency in a population; that is, the number of 'dependents' needs to be supported by the working-age population, representing the relationship between the economically dependent and the economically active. The ratio specifies the potential effects of changes in the population age structure on social and economic development, pointing to broader trends in need of social support. The dependency ratio is defined as the ratio of the number of children (0-14 years) and older persons (60 and above) per 100 working-age population 15-59 years. The dependency ratio is classified as 'young dependency ratio' (0-14), 'old-age dependency ratio' (60 and above) and 'total dependency ratio' (young and old dependency ratio). The overall dependency ratio in India is 62 per 100 working-age population with young dependency ratio of 19 (Figure 3.4). The overall dependency ratio is slightly higher in rural areas (67 per 100 working-age population) than in urban areas (54 per 100 working-age population). The young dependency ratio is somewhat lower (36 per 100 working-age population) in urban areas than in rural areas (47 per 100 working-age population); on the contrary, the old-age dependency ratio is higher in rural than in urban India.

Figure 3.5 presents the percentage of age-eligible (45 years and above) population enrolled for the Aadhaar card. The Aadhaar card is a 12-digit unique identification number containing the demographic and biometric information of an individual and is issued to the residents of India. The Aadhaar card is issued by the Unique Identification Authority of India (UIDAI), Planning Commission, Government of India. In the LASI survey, information on enrolment for an Aadhaar card was collected from all age-eligible older adults age 45 years and above and their spouses, irrespective of their age. Overall, 94% of the older adults age 45 and above in India possess the Aadhaar card: 95% in urban India compared to 93% in rural India.

**Figure 3.3 Sex ratio of household population by age group and place of residence, India, LASI Wave 1, 2017-18**

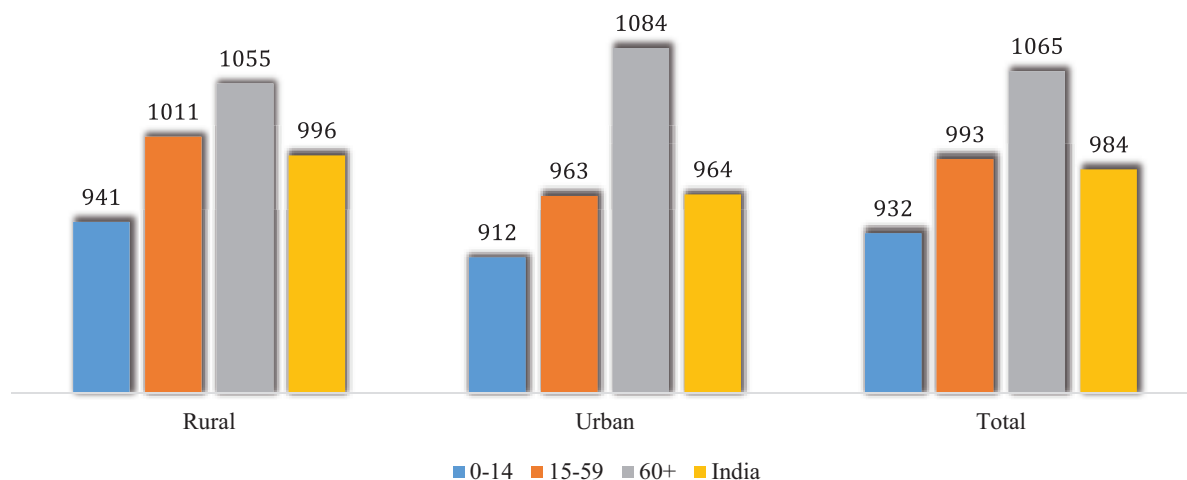


**Figure 3.4 Dependency ratio of household population by place of residence, India, LASI Wave 1, 2017-18**

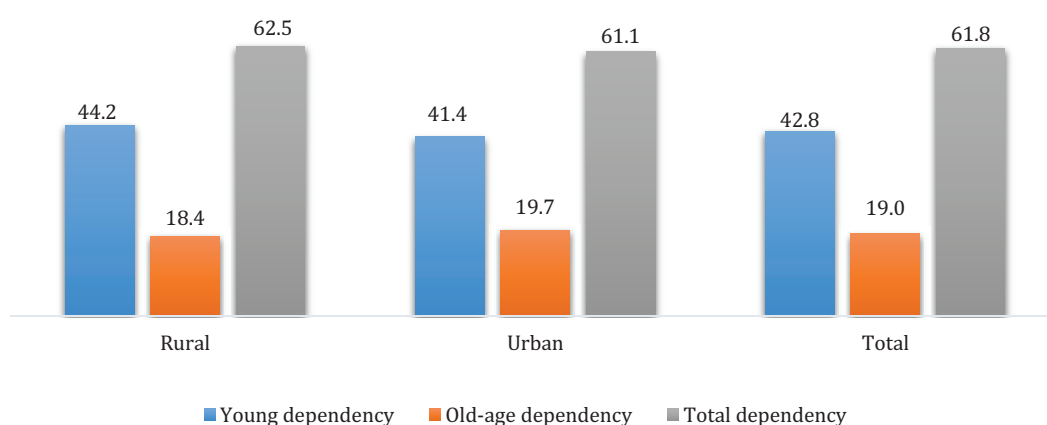


**Figure 3.5 Percentage of older adults age 45 and above, including spouses regardless of their age, with Aadhaar card by sex and place of residence, India, LASI Wave 1, 2017-18**

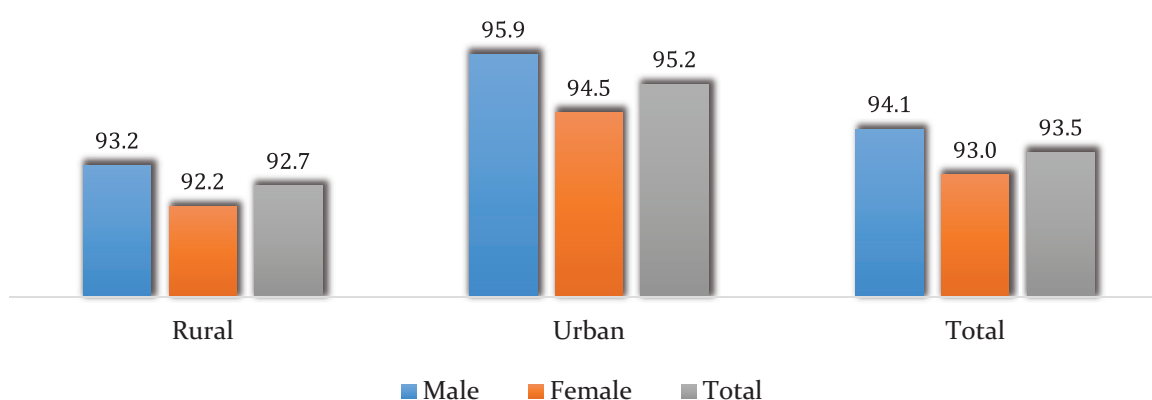


**Table 3.3 Sex ratio and dependency ratio of household population (all ages and elderly), states/UTs, LASI Wave 1, 2017-18**

| States/Union Territories  | Sex Ratio  |            |             | Dependency Ratio |             |             |             |
|---------------------------|------------|------------|-------------|------------------|-------------|-------------|-------------|
|                           | 0-14       | 15-59      | 60+         | All ages         | Young       | Old         | Total       |
| <b>India</b>              | <b>932</b> | <b>993</b> | <b>1066</b> | <b>984</b>       | <b>42.8</b> | <b>19.0</b> | <b>61.8</b> |
| <b>North</b>              |            |            |             |                  |             |             |             |
| Chandigarh                | 836        | 862        | 1085        | 879              | 35.3        | 17.1        | 52.4        |
| Delhi                     | 904        | 887        | 971         | 898              | 38.0        | 3.7         | 51.7        |
| Haryana                   | 837        | 884        | 1151        | 898              | 42.8        | 18.2        | 61.0        |
| Himachal Pradesh          | 866        | 1055       | 1033        | 1008             | 33.3        | 22.1        | 55.4        |
| Jammu & Kashmir           | 936        | 973        | 867         | 952              | 40.9        | 15.8        | 56.7        |
| Punjab                    | 845        | 930        | 947         | 913              | 33.8        | 20.9        | 54.7        |
| Rajasthan                 | 930        | 992        | 1159        | 990              | 50.3        | 18.5        | 68.8        |
| Uttarakhand               | 923        | 1085       | 1100        | 1041             | 44.6        | 21.0        | 65.6        |
| <b>Central</b>            |            |            |             |                  |             |             |             |
| Chhattisgarh              | 1032       | 1013       | 991         | 1016             | 42.9        | 15.5        | 58.4        |
| Madhya Pradesh            | 942        | 924        | 1070        | 944              | 47.7        | 18.3        | 66.0        |
| Uttar Pradesh             | 914        | 973        | 926         | 949              | 57.2        | 16.0        | 73.2        |
| <b>East</b>               |            |            |             |                  |             |             |             |
| Bihar                     | 924        | 1062       | 933         | 995              | 69.4        | 21.1        | 90.4        |
| Jharkhand                 | 929        | 987        | 980         | 968              | 53.7        | 19.7        | 73.4        |
| Odisha                    | 960        | 1125       | 1067        | 1074             | 39.3        | 22.2        | 61.5        |
| West Bengal               | 992        | 1003       | 1014        | 1002             | 33.7        | 19.8        | 53.5        |
| <b>Northeast</b>          |            |            |             |                  |             |             |             |
| Arunachal Pradesh         | 946        | 1015       | 817         | 980              | 48.4        | 10.5        | 58.9        |
| Assam                     | 987        | 1030       | 1072        | 1022             | 43.6        | 14.8        | 58.4        |
| Manipur                   | 1040       | 1117       | 1210        | 1108             | 42.1        | 21.1        | 63.1        |
| Meghalaya                 | 970        | 1028       | 1464        | 1034             | 60.8        | 12.8        | 73.6        |
| Mizoram                   | 942        | 1034       | 986         | 1002             | 48.1        | 16.2        | 64.3        |
| Nagaland                  | 880        | 1013       | 1006        | 975              | 44.6        | 23.8        | 68.4        |
| Tripura                   | 983        | 1020       | 1008        | 1010             | 36.6        | 18.8        | 55.4        |
| <b>West</b>               |            |            |             |                  |             |             |             |
| Dadra & Nagar Haveli      | 864        | 504        | 1270        | 853              | 39.1        | 13.5        | 52.6        |
| Daman & Diu               | 823        | 701        | 1278        | 774              | 28.9        | 15.9        | 44.8        |
| Goa                       | 1015       | 1010       | 1141        | 1030             | 31.5        | 22.9        | 54.3        |
| Gujarat                   | 880        | 985        | 1169        | 977              | 40.1        | 18.7        | 58.9        |
| Maharashtra               | 924        | 971        | 1133        | 980              | 37.7        | 21.3        | 59.0        |
| <b>South</b>              |            |            |             |                  |             |             |             |
| Andaman & Nicobar Islands | 1131       | 970        | 932         | 998              | 33.4        | 19.4        | 52.8        |
| Andhra Pradesh            | 958        | 1052       | 1037        | 1029             | 34.8        | 19.4        | 52.8        |
| Karnataka                 | 935        | 987        | 1112        | 989              | 38.6        | 20.8        | 59.4        |
| Kerala                    | 1018       | 1122       | 1203        | 1113             | 34.9        | 29.8        | 64.7        |
| Lakshadweep               | 867        | 1108       | 1057        | 1043             | 34.3        | 17.9        | 52.3        |
| Puducherry                | 917        | 1118       | 1299        | 1096             | 33.3        | 23.5        | 56.8        |
| Tamil Nadu                | 927        | 1014       | 1213        | 1022             | 30.4        | 22.1        | 52.5        |
| Telangana                 | 934        | 1049       | 1084        | 1025             | 37.4        | 20.2        | 57.6        |

Table 3.3 presents the sex ratio of the household population by broad age groups in states/UTs. The sex ratio of the household population is comparatively higher in the states of Manipur (1108), Kerala (1113), Puducherry (1096), and Tamil Nadu (1022), and lower in the states/UTs of Dadra & Nagar Haveli (853) and Daman & Diu (774). In 17 states/UTs, the sex ratio is more than 1000, while 13 states have sex ratio ranging from 900 to 1000 and five states have a sex ratio less than 900. The sex ratio among the elderly, age 60 and above, is greater than 1200 in the states/UTs of Puducherry (1299), Daman & Diu (1278), Tamil Nadu (1213), Manipur (1210), and Dadra & Nagar Haveli (1270). The sex ratio of the elderly population age 60 and above is lower in the states/UTs of Arunachal Pradesh (817), Jammu & Kashmir (867), Uttar Pradesh (926), Andaman & Nicobar Islands (932), Bihar (933) and Mizoram (986).

Table 3.3 also presents the dependency ratio across states/UTs. The overall dependency ratio is the highest in Bihar (90), followed by Jharkhand (73) and Uttar Pradesh (73), with the lowest in Dadra & Nagar Haveli (45). Twelve states/UTs have dependency ratio higher than the national average of 62. The young dependency ratio is comparatively higher in the demographically lagging states of Bihar (69), Uttar Pradesh (57), Jharkhand (54), and Rajasthan (50). The dependency ratio of the young population is comparatively lower (range of 30 to 40) in the demographically advanced southern and western Indian states. Other states/UTs from northern (Chandigarh, Delhi, Himachal Pradesh, and Punjab), eastern (Odisha, and West Bengal), and northeast (Tripura) India also have lower young dependency ratio. The old age dependency ratio is highest in Kerala (30) followed by Puducherry (24), Himachal Pradesh (22), and Tamil Nadu (22). In 16 states/UTs, the old age dependency ratio is greater than the national average of 19.

### ***3.1.3 Household size***

Table 3.4 presents the household size in rural and urban India by states/UTs. The mean household size in India is 5.7 persons per household; 40% of households have 4-5 members, 16% have 6 members, 28% have 7 and more members, and only 1% are single-member households. The households in urban India are slightly smaller (5.2) in size than those in rural India (5.9). A lesser proportion of urban households (35%) have 6 or more members residing than do rural households (48%).

The mean household size is greater than the national average in 11 states/UTs. The mean household size is as high as 7.3 in Lakshadweep and as low as 4.3 in Tamil Nadu. The mean household size is 6 or more in the states of Meghalaya (6.8), Uttar Pradesh (6.6), Bihar (6.6), Jammu & Kashmir (6.3), Haryana (6.3), Jharkhand (6.0), Mizoram (6.0), Gujarat (6.1), Rajasthan (6.1), and Uttarakhand (5.8).

**Table 3.4 Percent distribution of households by household size and mean household size according to place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Household size |            |            |             |             |             |             | Mean household size | Number of HH members |
|---------------------------|----------------|------------|------------|-------------|-------------|-------------|-------------|---------------------|----------------------|
|                           | 1              | 2          | 3          | 4           | 5           | 6           | 7+          |                     |                      |
| <b>India</b>              | <b>1.0</b>     | <b>5.2</b> | <b>9.8</b> | <b>19.7</b> | <b>20.2</b> | <b>15.7</b> | <b>28.3</b> | <b>5.7</b>          | <b>3,00,017</b>      |
| <b>Place of residence</b> |                |            |            |             |             |             |             |                     |                      |
| Rural                     | 1.1            | 5.2        | 8.3        | 17.3        | 19.7        | 16.3        | 32.2        | 5.9                 | 1,92,386             |
| Urban                     | 0.8            | 5.3        | 13.1       | 24.8        | 21.3        | 14.5        | 20.3        | 5.2                 | 1,07,631             |
| <b>States/UTs</b>         |                |            |            |             |             |             |             |                     |                      |
| <b>North</b>              |                |            |            |             |             |             |             |                     |                      |
| Chandigarh                | 0.7            | 5.2        | 9.9        | 23.3        | 21.9        | 19.7        | 19.4        | 5.4                 | 4,794                |
| Delhi                     | 0.8            | 3.0        | 8.4        | 20.7        | 24.9        | 15.8        | 26.2        | 5.6                 | 6,073                |
| Haryana                   | 0.7            | 2.5        | 6.3        | 15.8        | 20.5        | 17.8        | 36.4        | 6.3                 | 9,424                |
| Himachal Pradesh          | 0.7            | 3.2        | 9.5        | 17.9        | 21.2        | 23.7        | 23.9        | 5.7                 | 5,133                |
| Jammu & Kashmir           | 0.2            | 1.9        | 6.0        | 12.7        | 21.8        | 19.2        | 38.2        | 6.3                 | 7,816                |
| Punjab                    | 0.5            | 3.4        | 9.5        | 18.7        | 22.8        | 18.7        | 26.4        | 5.7                 | 8,502                |
| Rajasthan                 | 0.8            | 4.3        | 7.2        | 15.0        | 19.8        | 18.9        | 34.0        | 6.1                 | 10,880               |
| Uttarakhand               | 1.5            | 5.3        | 10.6       | 17.2        | 20.5        | 14.6        | 30.3        | 5.8                 | 5,788                |
| <b>Central</b>            |                |            |            |             |             |             |             |                     |                      |
| Chhattisgarh              | 1.3            | 5.9        | 7.5        | 18.7        | 21.2        | 17.2        | 28.3        | 5.6                 | 8,895                |
| Madhya Pradesh            | 0.9            | 5.1        | 9.2        | 19.2        | 21.1        | 15.7        | 28.8        | 5.6                 | 13,203               |
| Uttar Pradesh             | 0.6            | 3.3        | 5.5        | 12.8        | 18.5        | 16.6        | 42.7        | 6.6                 | 25,242               |
| <b>East</b>               |                |            |            |             |             |             |             |                     |                      |
| Bihar                     | 0.6            | 4.2        | 5.8        | 12.2        | 17.4        | 16.2        | 43.7        | 6.6                 | 17,482               |
| Jharkhand                 | 0.6            | 4.7        | 7.4        | 15.9        | 20.4        | 18.6        | 32.5        | 6.0                 | 11,320               |
| Odisha                    | 1.3            | 6.7        | 13.5       | 24.7        | 21.1        | 14.2        | 18.4        | 5.0                 | 9,407                |
| West Bengal               | 1.0            | 6.2        | 15.4       | 22.1        | 21.6        | 13.6        | 20.2        | 5.1                 | 13,320               |
| <b>Northeast</b>          |                |            |            |             |             |             |             |                     |                      |
| Arunachal Pradesh         | 2.5            | 6.3        | 9.9        | 19.1        | 20.4        | 15.9        | 26.0        | 5.3                 | 5,132                |
| Assam                     | 1.1            | 3.6        | 12.9       | 22.7        | 22.5        | 16.2        | 21.1        | 5.3                 | 10,125               |
| Manipur                   | 1.1            | 4.8        | 10.0       | 18.9        | 20.7        | 17.7        | 26.8        | 5.6                 | 5,308                |
| Meghalaya                 | 0.5            | 1.9        | 6.1        | 11.3        | 15.9        | 16.8        | 47.5        | 6.8                 | 5,976                |
| Mizoram                   | 1.1            | 4.3        | 6.9        | 13.8        | 18.7        | 19.2        | 36.0        | 6.0                 | 5,821                |
| Nagaland                  | 3.2            | 8.4        | 15.7       | 19.4        | 22.6        | 12.5        | 18.2        | 4.8                 | 4,438                |
| Tripura                   | 1.0            | 7.0        | 17.3       | 26.8        | 18.9        | 12.5        | 16.6        | 4.9                 | 4,345                |
| <b>West</b>               |                |            |            |             |             |             |             |                     |                      |
| Dadra & Nagar Haveli      | 0.8            | 6.1        | 11.1       | 22.1        | 20.0        | 13.4        | 26.5        | 5.4                 | 5,897                |
| Daman & Diu               | 2.0            | 6.9        | 14.6       | 21.3        | 18.4        | 11.3        | 25.6        | 5.3                 | 4,857                |
| Goa                       | 1.1            | 4.3        | 11.2       | 27.6        | 21.8        | 15.2        | 18.9        | 5.2                 | 5,132                |
| Gujarat                   | 0.8            | 4.4        | 7.2        | 16.7        | 19.2        | 17.8        | 33.9        | 6.1                 | 10,682               |
| Maharashtra               | 1.0            | 5.5        | 8.7        | 19.5        | 20.8        | 15.8        | 28.7        | 5.7                 | 15,208               |
| <b>South</b>              |                |            |            |             |             |             |             |                     |                      |
| Andaman & Nicobar Islands | 1.2            | 6.5        | 15.7       | 24.3        | 19.4        | 14.5        | 18.4        | 5.1                 | 4,460                |
| Andhra Pradesh            | 1.9            | 10.5       | 12.0       | 31.2        | 20.0        | 12.8        | 11.7        | 4.6                 | 8,601                |
| Karnataka                 | 0.7            | 4.6        | 12.6       | 24.0        | 20.9        | 15.1        | 22.2        | 5.6                 | 9,284                |
| Kerala                    | 1.2            | 6.7        | 13.3       | 23.9        | 22.9        | 13.7        | 18.2        | 5.0                 | 7,763                |
| Lakshadweep               | 1.0            | 2.6        | 7.2        | 11.3        | 14.7        | 12.9        | 50.3        | 7.3                 | 4,870                |
| Puducherry                | 1.9            | 9.8        | 13.7       | 31.6        | 21.8        | 11.4        | 9.8         | 4.5                 | 4,575                |
| Tamil Nadu                | 3.1            | 11.8       | 15.5       | 32.8        | 18.3        | 10.0        | 8.6         | 4.3                 | 11,360               |
| Telangana                 | 1.9            | 8.4        | 12.5       | 26.5        | 20.6        | 13.3        | 16.8        | 5.1                 | 8,904                |



### 3.1.4 Literacy rate and educational attainment

In the LASI survey, information on years of schooling and literacy was collected for each household member age 6 and above. Overall, 69% of females and 84% of males age 6 and above in India have ever attended school and 31% of females and 16% of males have never attended school. Seventeen percent of females completed 12 or more years of schooling compared to 23% of males. The percentage of household population with no schooling is higher in rural India than in urban India. The pattern is the same for both males and females. The proportion of both the male and female population that has never attended school shows an increase with age. A higher proportion of elderly men age 60 and above attended school than did elderly women (Table 3.5).

The median years of schooling is 8 years, which is slightly higher among males (9 years) than among females (8 years). The median years of schooling is higher in urban areas (10 years) than in rural areas (8 years). Median years of schooling show a declining trend with age, with a median of 10 years for individuals aged 15-24 and 8 years for those aged 75 and above. Among older adults age 45-59, the median years of schooling is 9 years among men compared to 8 years among women.

The literacy rate in India is 85% among males and 69% among females. The literacy rate was higher in urban India than rural India for both males and females. Among elderly age 75+, the literacy rate is 62% for males and 27% for females, whereas the literacy rate is 73% and 45% among male and female older adults (45-59 years) respectively.

The literacy rate is defined as the number of literate population age 6 years and above of the total population age 6 years and above. This is referred to as the 'effective literacy rate', which is calculated as follows:

$$\text{Effective literacy rate} = (\text{Number of literate persons age 6 and above} / \text{population age 6 and above}) \times 100$$

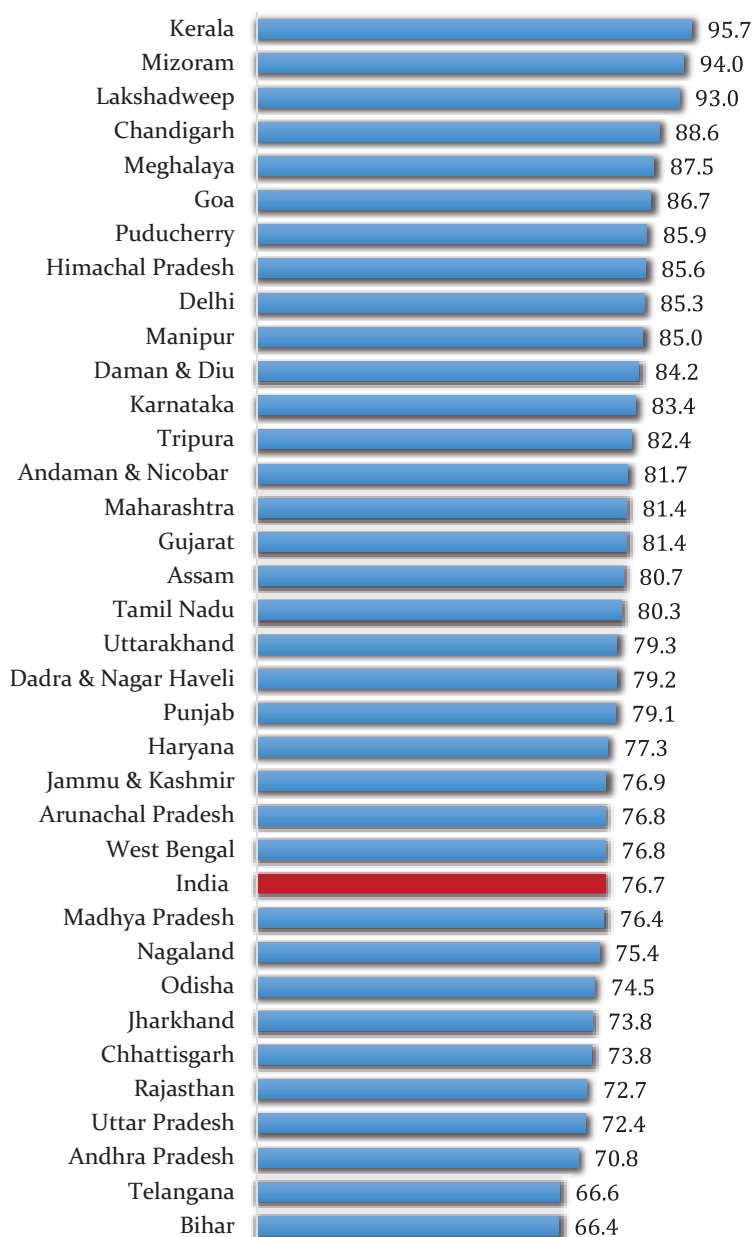
**Table 3.5 Literacy rate, median years of schooling, and educational attainment of household population, India, LASI Wave 1, 2017-18**

| Background characteristics | Literacy rate | Median years of schooling completed | Educational attainment1 |                   |                    |                    |                      |                           |
|----------------------------|---------------|-------------------------------------|-------------------------|-------------------|--------------------|--------------------|----------------------|---------------------------|
|                            |               |                                     | No schooling            | <5 years complete | 5-7 years complete | 8-9 years complete | 10-11 years complete | 12 or more years complete |
| Male                       |               |                                     |                         |                   |                    |                    |                      |                           |
| Age                        |               |                                     |                         |                   |                    |                    |                      |                           |
| <14                        | 94.0          | 4.0                                 | 6.0                     | 51.7              | 30.4               | 11.3               | 0.6                  | 0.0                       |
| 15-24                      | 94.5          | 10.0                                | 5.5                     | 3.1               | 11.1               | 22.9               | 22.0                 | 35.4                      |
| 25-44                      | 86.3          | 10.0                                | 13.7                    | 6.8               | 14.5               | 17.1               | 15.1                 | 32.9                      |
| 45-59                      | 72.7          | 9.0                                 | 27.3                    | 10.6              | 14.3               | 13.5               | 13.4                 | 20.9                      |
| 60-75                      | 63.1          | 8.0                                 | 36.9                    | 12.3              | 14.7               | 10.0               | 12.1                 | 14.0                      |
| 75+                        | 61.5          | 8.0                                 | 38.4                    | 14.8              | 12.8               | 5.6                | 12.4                 | 16.1                      |
| Total                      | 84.4          | 9.0                                 | 15.6                    | 15.8              | 16.8               | 15.6               | 13.1                 | 23.1                      |
| Place of residence         |               |                                     |                         |                   |                    |                    |                      |                           |
| Rural                      | 81.1          | 8.0                                 | 18.9                    | 17.5              | 18.2               | 17.1               | 12.0                 | 16.3                      |
| Urban                      | 91.0          | 10.0                                | 9.0                     | 12.6              | 13.8               | 12.7               | 15.3                 | 36.4                      |
| Female                     |               |                                     |                         |                   |                    |                    |                      |                           |
| Age                        |               |                                     |                         |                   |                    |                    |                      |                           |
| <14                        | 93.5          | 4.0                                 | 6.5                     | 49.4              | 30.9               | 12.3               | 0.8                  | 0.1                       |
| 15-24                      | 91.0          | 10.0                                | 9.0                     | 3.3               | 10.3               | 22.4               | 22.0                 | 33.0                      |
| 25-44                      | 70.7          | 10.0                                | 29.4                    | 6.8               | 14.4               | 12.8               | 11.8                 | 24.9                      |
| 45-59                      | 44.8          | 8.0                                 | 55.3                    | 9.0               | 11.7               | 7.4                | 7.3                  | 9.5                       |
| 60-75                      | 31.8          | 7.0                                 | 68.2                    | 8.5               | 8.8                | 4.6                | 5.7                  | 4.2                       |
| 75+                        | 26.7          | 7.0                                 | 73.3                    | 8.3               | 5.8                | 5.3                | 6.3                  | 1.0                       |
| Total                      | 69.0          | 8.0                                 | 31.0                    | 14.3              | 15.2               | 12.6               | 10.3                 | 16.7                      |
| Place of residence         |               |                                     |                         |                   |                    |                    |                      |                           |
| Rural                      | 62.1          | 8.0                                 | 37.9                    | 15.3              | 15.4               | 12.9               | 8.4                  | 10.1                      |
| Urban                      | 83.0          | 10.0                                | 17.0                    | 12.1              | 14.6               | 12.0               | 14.3                 | 30.0                      |
| Total                      |               |                                     |                         |                   |                    |                    |                      |                           |
| Age                        |               |                                     |                         |                   |                    |                    |                      |                           |
| <14                        | 93.7          | 4.0                                 | 6.3                     | 50.6              | 30.7               | 11.8               | 0.7                  | 0.0                       |
| 15-24                      | 92.8          | 10.0                                | 7.2                     | 3.2               | 10.7               | 22.6               | 22.0                 | 34.2                      |
| 25-44                      | 78.6          | 10.0                                | 21.4                    | 6.8               | 14.4               | 15.0               | 13.4                 | 29.0                      |
| 45-59                      | 58.0          | 9.0                                 | 42.0                    | 9.8               | 12.9               | 10.3               | 10.2                 | 14.9                      |
| 60-75                      | 46.8          | 8.0                                 | 53.2                    | 10.3              | 11.6               | 7.1                | 8.8                  | 8.9                       |
| 75+                        | 43.5          | 8.0                                 | 56.4                    | 11.4              | 9.2                | 5.5                | 9.2                  | 8.3                       |
| Total                      | 76.7          | 8.0                                 | 23.3                    | 15.1              | 16.0               | 14.1               | 11.7                 | 19.9                      |
| Place of residence         |               |                                     |                         |                   |                    |                    |                      |                           |
| Rural                      | 71.6          | 8.0                                 | 28.4                    | 16.4              | 16.8               | 15.0               | 10.2                 | 13.2                      |
| Urban                      | 87.0          | 10.0                                | 13.0                    | 12.4              | 14.2               | 12.4               | 14.8                 | 33.3                      |

Note

<sup>1</sup> Education attainment is categorised as: No schooling, <5 years: Less than primary school completed, 5-7 years: Primary school completed, 8-9 years: Middle school completed, 10-11 years: Matriculation/secondary school and above completed, 12 or more years: Intermediate/higher secondary/senior secondary and above completed.

**Figure 3.6 Literacy rate of household population, states/UTs, LASI Wave 1, 2017-18**



Note

The literacy rate is defined as the number of literate population age 6 years and above of the total population age 6 years and above.

Kerala has the highest literacy rate (96%) followed by Mizoram (94%), Lakshadweep (93%), and Chandigarh (89%), while the literacy rate is the lowest in the states of Uttar Pradesh (72%), Andhra Pradesh (71%), Telangana (67%), and Bihar (66%) (Figure 3.6).

**Table 3.6 Percent distribution of households by religion and caste/tribe of head of the household according to place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Religion    |             |            |            | Caste/Tribe                |                 |                 |                      | Number of head of the household |
|---------------------------|-------------|-------------|------------|------------|----------------------------|-----------------|-----------------|----------------------|---------------------------------|
|                           | Hindu       | Muslim      | Christian  | Sikh       | Buddhist/Jain/Jewish/Parsi | Scheduled caste | Scheduled tribe | Other backward class |                                 |
| <b>India</b>              | <b>79.6</b> | <b>14.2</b> | <b>3.1</b> | <b>1.6</b> | <b>1.5</b>                 | <b>21.0</b>     | <b>9.0</b>      | <b>47.3</b>          | <b>65,512</b>                   |
| Rural                     | 82.2        | 11.1        | 3.4        | 1.8        | 1.5                        | 24.9            | 12.0            | 44.1                 | 40,896                          |
| Urban                     | 74.6        | 20.1        | 2.5        | 1.1        | 1.7                        | 13.5            | 3.2             | 53.4                 | 24,616                          |
| <b>States/UTs</b>         |             |             |            |            |                            |                 |                 |                      |                                 |
| <b>North</b>              |             |             |            |            |                            |                 |                 |                      |                                 |
| Chandigarh                | 75.6        | 4.8         | 0.9        | 18.0       | 0.7                        | 22.5            | 0.7             | 18.8                 | 1,064                           |
| Delhi                     | 78.7        | 15.6        | 0.6        | 3.9        | 1.3                        | 27.4            | 1.1             | 22.9                 | 1,270                           |
| Haryana                   | 88.5        | 8.1         | 0.0        | 2.9        | 0.5                        | 24.4            | 0.5             | 33.2                 | 1,820                           |
| Himachal Pradesh          | 98.0        | 0.6         | 0.1        | 1.0        | 0.3                        | 29.9            | 5.5             | 16.9                 | 1,082                           |
| Jammu & Kashmir           | 27.0        | 72.2        | 0.1        | 0.7        | 0.1                        | 10.5            | 5.2             | 10.9                 | 1,435                           |
| Punjab                    | 34.2        | 0.7         | 1.1        | 63.7       | 0.3                        | 41.6            | 1.0             | 21.1                 | 1,769                           |
| Rajasthan                 | 93.7        | 3.8         | 0.0        | 1.5        | 1.0                        | 24.0            | 14.6            | 42.3                 | 2,195                           |
| Uttarakhand               | 84.3        | 13.9        | 0.6        | 0.8        | 0.4                        | 20.1            | 3.9             | 19.4                 | 1,256                           |
| <b>Central</b>            |             |             |            |            |                            |                 |                 |                      |                                 |
| Chhattisgarh              | 96.4        | 1.9         | 0.9        | 0.2        | 0.6                        | 11.5            | 35.4            | 45.4                 | 1,943                           |
| Madhya Pradesh            | 89.0        | 8.8         | 0.3        | 0.2        | 1.7                        | 17.9            | 15.4            | 50.6                 | 2,785                           |
| Uttar Pradesh             | 83.1        | 16.1        | 0.1        | 0.2        | 0.6                        | 29.1            | 1.4             | 43.6                 | 4,720                           |
| <b>East</b>               |             |             |            |            |                            |                 |                 |                      |                                 |
| Bihar                     | 80.0        | 19.8        | 0.0        | 0.0        | 0.2                        | 22.3            | 3.3             | 54.8                 | 3,325                           |
| Jharkhand                 | 83.9        | 9.4         | 4.4        | 0.1        | 2.2                        | 18.4            | 15.2            | 51.4                 | 2,237                           |
| Odisha                    | 87.4        | 0.9         | 11.6       | 0.0        | 0.0                        | 19.4            | 30.1            | 33.9                 | 2,311                           |
| West Bengal               | 75.0        | 23.1        | 0.1        | 0.0        | 1.8                        | 36.5            | 6.3             | 14.7                 | 3,205                           |
| <b>Northeast</b>          |             |             |            |            |                            |                 |                 |                      |                                 |
| Arunachal Pradesh         | 23.6        | 1.2         | 52.0       | 0.0        | 23.2                       | 7.2             | 89.8            | 1.5                  | 1,163                           |
| Assam                     | 72.3        | 25.0        | 2.0        | 0.0        | 0.7                        | 12.0            | 20.8            | 47.5                 | 2,281                           |
| Manipur                   | 43.0        | 9.5         | 33.0       | 0.0        | 14.5                       | 8.9             | 34.8            | 25.8                 | 1,180                           |
| Meghalaya                 | 11.6        | 0.3         | 84.2       | 0.0        | 4.0                        | 2.6             | 96.4            | 0.3                  | 1,066                           |
| Mizoram                   | 1.1         | 0.5         | 98.4       | 0.0        | 0.1                        | 0.8             | 98.6            | 0.6                  | 1,188                           |
| Nagaland                  | 6.3         | 12.3        | 81.3       | 0.0        | 0.1                        | 13.1            | 85.3            | 0.4                  | 1,207                           |
| Tripura                   | 87.1        | 0.5         | 5.2        | 0.0        | 7.3                        | 28.1            | 34.5            | 25.3                 | 1,098                           |
| <b>West</b>               |             |             |            |            |                            |                 |                 |                      |                                 |
| Dadra & Nagar Haveli      | 88.0        | 6.6         | 3.7        | 0.2        | 1.6                        | 3.1             | 41.3            | 29.1                 | 1,263                           |
| Daman & Diu               | 91.7        | 5.5         | 1.7        | 0.1        | 1.2                        | 16.4            | 15.1            | 43.5                 | 1,183                           |
| Goa                       | 78.8        | 5.5         | 15.4       | 0.1        | 0.1                        | 6.8             | 14.9            | 25.4                 | 1,181                           |
| Gujarat                   | 86.1        | 12.4        | 0.9        | 0.2        | 0.4                        | 10.9            | 18.6            | 43.7                 | 2,144                           |
| Maharashtra               | 77.7        | 12.7        | 0.8        | 0.0        | 8.8                        | 17.7            | 9.7             | 38.2                 | 3,300                           |
| <b>South</b>              |             |             |            |            |                            |                 |                 |                      |                                 |
| Andaman & Nicobar Islands | 62.4        | 7.6         | 29.9       | 0.1        | 0.1                        | 20.3            | 23.9            | 27.0                 | 1,090                           |
| Andhra Pradesh            | 81.3        | 5.8         | 12.4       | 0.0        | 0.5                        | 22.4            | 6.3             | 46.3                 | 2,264                           |
| Karnataka                 | 79.9        | 18.8        | 0.8        | 0.0        | 0.5                        | 13.3            | 3.7             | 71.1                 | 2,023                           |
| Kerala                    | 59.0        | 22.2        | 18.6       | 0.0        | 0.2                        | 9.1             | 2.7             | 56.0                 | 1,877                           |
| Lakshadweep               | 0.5         | 98.8        | 0.7        | 0.0        | 0.0                        | 1.6             | 92.3            | 5.3                  | 893                             |
| Puducherry                | 91.1        | 4.6         | 4.4        | 0.0        | 0.0                        | 17.9            | 1.0             | 74.0                 | 1,173                           |
| Tamil Nadu                | 89.5        | 3.3         | 7.1        | 0.0        | 0.2                        | 18.1            | 0.9             | 79.2                 | 3,249                           |
| Telangana                 | 83.3        | 12.0        | 3.8        | 0.4        | 0.5                        | 19.9            | 6.4             | 58.5                 | 2,272                           |

### 3.1.5 Religion, caste, and other characteristics of head of the household

Table 3.6 presents the percent distribution of households by religion and caste/tribe of the household head according to place of residence across states/UTs. Four-fifths (80%) of the household heads are Hindu, 14% are Muslim, 3% are Christians, 2% are Sikh, and 2 % are Buddhist/Jain/Jewish/Parsi. The proportion of Muslim headed households is higher in urban areas (20%) than in rural (11%) areas; whereas, the proportion of Christian household heads is higher in rural areas (3%) than in urban areas (2%). More than 90% of heads of household are Hindu in the states of Himachal Pradesh (98%), Chhattisgarh (96%), Rajasthan (94%), and Daman & Diu (92%). Muslim-headed households are predominant in Lakshadweep (99%) and Jammu & Kashmir (72%). Christian-headed households are most common in the states of Mizoram (98%), Nagaland (81%), Meghalaya (84%), and Arunachal Pradesh (52%). In India, 21% of household heads are Scheduled caste, 9% are Scheduled tribe, 47% are Other backward class and 23% are other caste. The percentage of Scheduled caste household heads varies from 42% in Punjab to 0.8% in Mizoram.

The majority of households surveyed in LASI are headed by males (85%) compared to only 15% by females (Table 3.7). This proportion does not vary by rural-urban residence. Eighty-two percent of household heads are currently married and 15% are widowed. Thirty-one percent of heads of household never attended school while 31% completed 10 or more years of schooling. Fifty-one percent of household heads from urban areas completed 10 or more years of schooling while only 20% of rural household heads completed 10 and more years of schooling. The median years of schooling is 10 years among urban household heads and 8 years among household heads from rural areas.

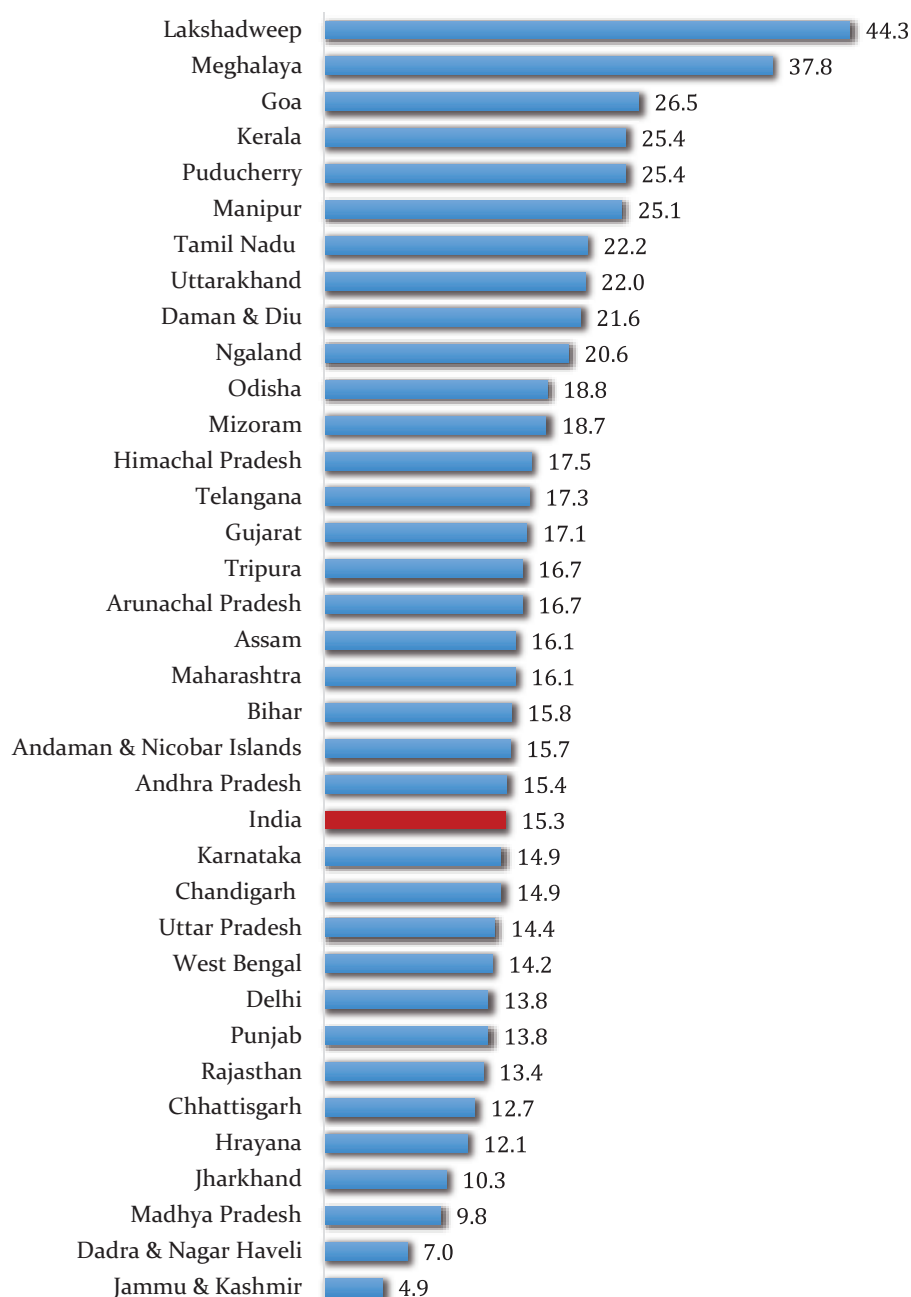
**Table 3.7 Percent distribution of head of the households by sex, marital status, educational attainment, and median years of schooling according to place of residence, India, LASI Wave 1, 2017-18**

| Characteristics of head of the household           | Place of residence |               |               |
|----------------------------------------------------|--------------------|---------------|---------------|
|                                                    | Rural              | Urban         | Total         |
| <b>Household headship</b>                          |                    |               |               |
| Male                                               | 84.6               | 85.1          | 84.7          |
| Female                                             | 15.4               | 14.9          | 15.3          |
| <b>Marital status of head of household</b>         |                    |               |               |
| Never married                                      | 1.3                | 3.2           | 2.0           |
| Currently married                                  | 82.1               | 81.3          | 81.8          |
| Widowed                                            | 15.5               | 14.2          | 15.0          |
| Others                                             | 1.1                | 1.3           | 1.2           |
| <b>Educational attainment of head of household</b> |                    |               |               |
| No schooling                                       | 38.2               | 18.2          | 31.2          |
| Less than 5 years complete                         | 11.6               | 7.9           | 10.3          |
| 5-9 years complete                                 | 30.4               | 23.4          | 27.9          |
| 10 or more years complete                          | 19.9               | 50.6          | 30.5          |
| <b>Total</b>                                       | 100.0              | 100.0         | 100.0         |
| <b>Median years of schooling</b>                   | 8.0                | 10.0          | 9.0           |
| <b>Number of households</b>                        | <b>40,894</b>      | <b>24,612</b> | <b>65,506</b> |

Figure 3.7 shows the percentage of female-headed households by states/UTs. The percentage of female-headed households is higher in the states/UTs of Lakshadweep (44%) and Meghalaya (38%), followed by Goa (27%), Puducherry (25%), and Kerala (25%). Female headship is lower in the states of Bihar (16%), Uttar Pradesh (14%), Rajasthan (13%), Chhattisgarh (13%), Jharkhand (10%), and Madhya Pradesh (10%), and it is lowest in Jammu & Kashmir (5%).



**Figure 3.7 Percentage of female-headed households, states/UTs, LASI Wave 1, 2017-18**



### **3.1.6 Household deaths in the last 2 years**

In the LASI survey, information was collected on the death of any usual member of the household during the two years prior to the survey. Death rate is calculated as the number of deaths per 1000 mid-year population during the two years prior to the survey. As the reference period in the LASI survey is the two years preceding the survey, the annual average number of deaths was calculated from the total number of deaths. An adjustment factor of 0.015 was used to interpolate the total population at mid-year of the survey period.

Table 3.8 presents the death rates of broad age-groups, by the states/UTs of India. The death rate is 7.7 per 1000 population in India during 2017-18. Among states/UTs, the death rate is higher than the national average in the states of Himachal Pradesh (9.5), West Bengal (9.2), Uttarakhand (8.6), Manipur (8.5), Jharkhand (8.4), Odisha (8.3), and Madhya Pradesh (8.3), and comparatively lower in the states/UTs of Meghalaya (3.6), Dadra & Nagar Haveli (4.6), and Andaman & Nicobar Islands (4.9). The death rate for the elderly population age 60 and above is 38.4 deaths per 1000 population. The death rate for the elderly age 60 and above is higher in the states of Arunachal Pradesh (50.4), Chhattisgarh (47.7), West Bengal (47.0), Madhya Pradesh (45.3), and Uttar Pradesh (44.5), and lower in the states/UTs of Meghalaya (19.7), Daman & Diu (19.9), Chandigarh (23.2), and Kerala (23.2).

**Table 3.8 Death rate by broad age group, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Broad age-group |            |             | Total      |
|---------------------------|-----------------|------------|-------------|------------|
|                           | 0-14            | 15-59      | 60+         |            |
| <b>India</b>              | <b>2.5</b>      | <b>3.5</b> | <b>38.4</b> | <b>7.7</b> |
| <b>North</b>              |                 |            |             |            |
| Chandigarh                | 1.8             | 2.9        | 23.2        | 5.3        |
| Delhi                     | 2.2             | 1.6        | 40.0        | 4.9        |
| Haryana                   | 3.0             | 4.2        | 36.0        | 7.7        |
| Himachal Pradesh          | 1.3             | 3.2        | 43.5        | 9.5        |
| Jammu & Kashmir           | 0.3             | 2.2        | 41.3        | 6.1        |
| Punjab                    | 2.8             | 4.5        | 31.2        | 8.0        |
| Rajasthan                 | 3.5             | 2.9        | 43.3        | 7.6        |
| Uttarakhand               | 2.3             | 3.5        | 44.1        | 8.6        |
| <b>Central</b>            |                 |            |             |            |
| Chhattisgarh              | 2.8             | 3.5        | 47.7        | 7.7        |
| Madhya Pradesh            | 3.4             | 3.1        | 45.3        | 8.3        |
| Uttar Pradesh             | 3.7             | 3.9        | 44.5        | 7.9        |
| <b>East</b>               |                 |            |             |            |
| Bihar                     | 2.7             | 3.2        | 30.6        | 6.3        |
| Jharkhand                 | 2.0             | 4.6        | 40.3        | 8.4        |
| Odisha                    | 2.6             | 3.8        | 37.5        | 8.3        |
| West Bengal               | 1.3             | 4.1        | 47.0        | 9.2        |
| <b>Northeast</b>          |                 |            |             |            |
| Arunachal Pradesh         | 4.0             | 3.0        | 50.4        | 6.1        |
| Assam                     | 1.5             | 4.6        | 40.8        | 7.4        |
| Manipur                   | 3.1             | 4.7        | 35.4        | 8.5        |
| Mizoram                   | 1.5             | 2.9        | 19.7        | 3.6        |
| Nagaland                  | 1.3             | 2.7        | 28.9        | 5.1        |
| Tripura                   | 1.1             | 3.2        | 38.4        | 7.2        |
| <b>West</b>               |                 |            |             |            |
| Dadra & Nagar Haveli      | 2.8             | 2.1        | 32.2        | 4.6        |
| Daman & Diu               | 3.9             | 5.9        | 19.9        | 7.4        |
| Goa                       | 0.0             | 1.3        | 28.6        | 5.1        |
| Gujarat                   | 3.0             | 3.2        | 41.1        | 8.1        |
| Maharashtra               | 0.9             | 2.8        | 36.9        | 7.5        |
| <b>South</b>              |                 |            |             |            |
| Andaman & Nicobar Islands | 1.5             | 2.0        | 27.9        | 4.9        |
| Andhra Pradesh            | 1.2             | 4.4        | 34.3        | 8.0        |
| Karnataka                 | 3.4             | 2.8        | 32.4        | 6.7        |
| Kerala                    | 0.5             | 3.2        | 23.2        | 6.6        |
| Lakshadweep               | 0.4             | 2.6        | 35.4        | 6.2        |
| Puducherry                | 1.0             | 2.6        | 28.1        | 6.4        |
| Tamil Nadu                | 2.0             | 2.8        | 36.3        | 8.1        |
| Telangana                 | 0.9             | 4.4        | 34.3        | 7.5        |

Note

Death rate is calculated as the number of deaths per 1000 of the mid-year population during the two years prior to the survey.

### Key findings: household population characteristics

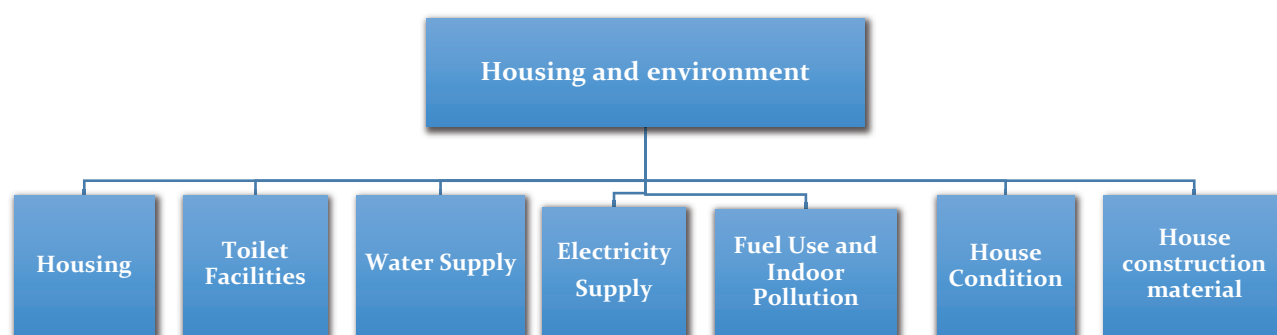
- In India, 27% are children age 0-14 years, 61% are the working-age population age 15-59 years, and 12% are the elderly age 60 and above. The percentage of elderly age 60 and above is higher in the states of Kerala (20%), Himachal Pradesh (17%), Tamil Nadu (16%), Puducherry (16%), and Goa (15%).
- The overall sex ratio of the household population in India is 984 females per 1000 males and that of the elderly population age 60 and above is 1065. The sex ratio of the elderly population age 60 and above is more than 1200 in the states/UTs of Puducherry (1299), Daman & Diu (1278), Dadra & Nagar Haveli (1270), Tamil Nadu (1213), Manipur (1210), and Kerala (1203).
- The overall dependency ratio in India is 62 per 100 working-age population; the young dependency ratio is 43 and the old dependency ratio is 19. The old dependency ratio is highest in Kerala (30) followed by Puducherry (24), and Tamil Nadu (22); in 14 states/UTs, the old dependency ratio is more than the national average of 19.
- Overall, 94% of older adults age 45 and above in India possess the Aadhaar card; this proportion is 95% in urban India and 93% in rural India.
- The mean household size in India is 5.7 persons per household. The mean household size varies from 7.3 in Lakshadweep to 4.3 in Tamil Nadu.
- Overall, 69% of females and 85% of males age 6 and above in India have ever attended school. A higher proportion of elderly men age 60 and above (65%) than women (35%) have attended school. The literacy rate in India is 77%; the highest in Kerala (96%) and the lowest in Bihar (66%).
- Eighty percent of the household heads in India are Hindu, 14% are Muslim, 3% are Christian, 2% are Sikh, and 2% are Buddhist/Jain/Jewish/Parsi. In India, 21% household heads are Scheduled caste, 9% are Scheduled tribe, 47% are other backward class, and 23% are other caste.
- Eighty-five percent of the households in India are headed by males and 15% by females. The percentage of female-headed households is higher in the states/UTs of Lakshadweep (44%) and Meghalaya (39%).
- The death rate in India during two years prior to the survey is 7.7 per 1000 population, which is 38 per 1000 elderly age 60 and above. The death rate for elderly age 60 and above is higher in the states of Arunachal Pradesh (50.4), Chhattisgarh (47.7), West Bengal (47.0), Madhya Pradesh (45.3), and Uttar Pradesh (44.5).

## 3.2 HOUSING AND ENVIRONMENT

The type of housing and immediate environment where an individual resides determines the quality of life, which serves as an indicator of “basic needs” for development. A positive association exists between housing conditions, basic amenities, and overall development; further, factors like improved water supply, sanitation, electricity, and the type of fuel used in households immensely contribute to health and people’s overall well-being. Thus, understanding the overall living conditions of people’s households requires a comprehensive description of the immediate environment where a person resides.

This section presents housing related characteristics of LASI households with at least one age eligible respondent age 45 and above. The LASI covers the following components on housing and environment: number of rooms and kitchen, sanitation facilities, drinking water and a method to make water safer for drinking, electricity, main source of fuel, indoor pollution, the use of different products which generate smoke inside the household, house construction material, and general condition of the house (Figure 3.5).

**Flowchart: components covered in housing and environment**



### 3.2.1 Water supply

Clean, safe, and affordable water is a fundamental human need; it is required for drinking, cooking, washing, bathing, and keeping the community surroundings clean. In India, 18% households in rural areas still have to fetch drinking water from a source located more than 500 meters away; in urban areas, water sources are usually less than 100 meters away (Census, 2011). According to the WHO, improved drinking water includes: a piped water connection located inside the user’s dwelling, plot, yard, or similar location; other drinking water sources include: public taps/standpipes, tube wells/bore wells, protected dug wells, protected springs, and rainwater collection. In the LASI, a set of questions were asked about households’ sources of drinking water, location of water source, and the time it took to fetch water if the source was outside their house. Improved drinking water sources include water from pipes, public taps/standpipes, tube wells/bore wells, dug wells, spring water, and rainwater.

Table 3.9 provides information on access to drinking water according to the place of residence. Overall, more than a third (35%) of households in India have access to piped water; 32% of the households have a water tap inside their dwellings. The proportion of households that have access to piped water is higher in urban (61%) than in rural areas (23%); besides piped water, other common water sources in rural areas are tube wells/bore wells (51%), public taps (14%) and dug wells (7%). In India, 48% of the households have access to some sources of drinking water in their dwelling, another 21% have it either in their yard or plot, and a third of households don’t have a water source located inside their dwelling or in their own yard.

State/UT level variation in source of drinking water is shown in Figure 3.8. This figure shows the percent distribution of households by three categories, i.e. piped water on the premises of the house, other sources of improved drinking water, and percentage of households using unimproved drinking water. In India, 94% of households have access to an improved source of drinking water. Manipur (57%) has the lowest percentage of households with an improved source of drinking water, while all households in Lakshadweep have access to it; less than 85% of the households have access to an improved source of drinking water in Telangana (74%), Andhra Pradesh (75%) and Daman & Diu (80%).

More than half of the LASI age eligible households in Chhattisgarh (63%), Madhya Pradesh (55%), Odisha (57%) Jharkhand (53%) and West Bengal (53%) do not have a water source located inside the dwelling or in their own yard. Comparatively, most households in Assam (90%), Chandigarh (91%), Jammu & Kashmir (91%), Lakshadweep (92%), Punjab (93%), Kerala (93%), Puducherry (94%), Goa (94%) and Mizoram (95%) have a water source located inside their dwellings (Table 3.10).

More than three-fourths of the households in the states/UTs of Chandigarh (94%), Goa (82%), Himachal Pradesh (79%), and Arunachal Pradesh (75%) have access to piped water on the premises. Less than one-tenth of the households, however, have access to piped water on the premises of their houses in the states/UTs of Bihar (3%), Assam (5%), Jharkhand (7%), and Lakshadweep (7%). The percentage of households that do not have access to improved drinking water is the highest in the states of Manipur (44%), Telangana (26%) and Andhra Pradesh (26%); the percentage of households that have access to other improved drinking water sources but do not have piped water on the premises of their houses is the highest in Bihar (95%), Lakshadweep (93%), Assam (92%) and Odisha (90%).



**Figure 3.8 Percent distribution of households with main source of drinking water, states/UTs, LASI Wave 1, 2017-18**

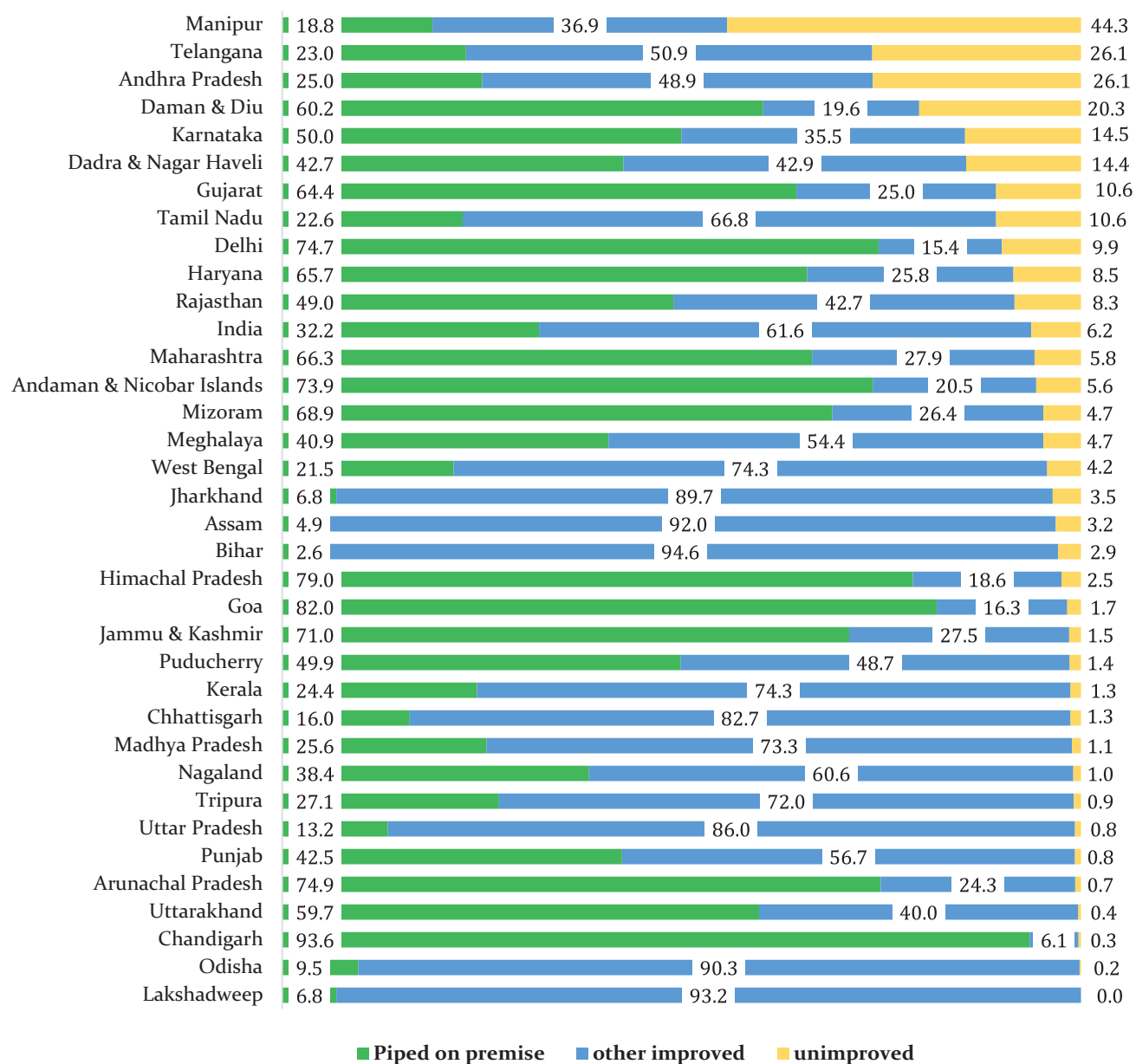
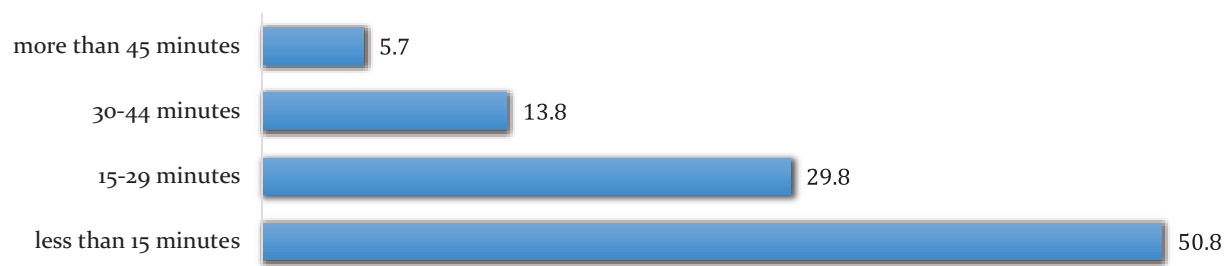


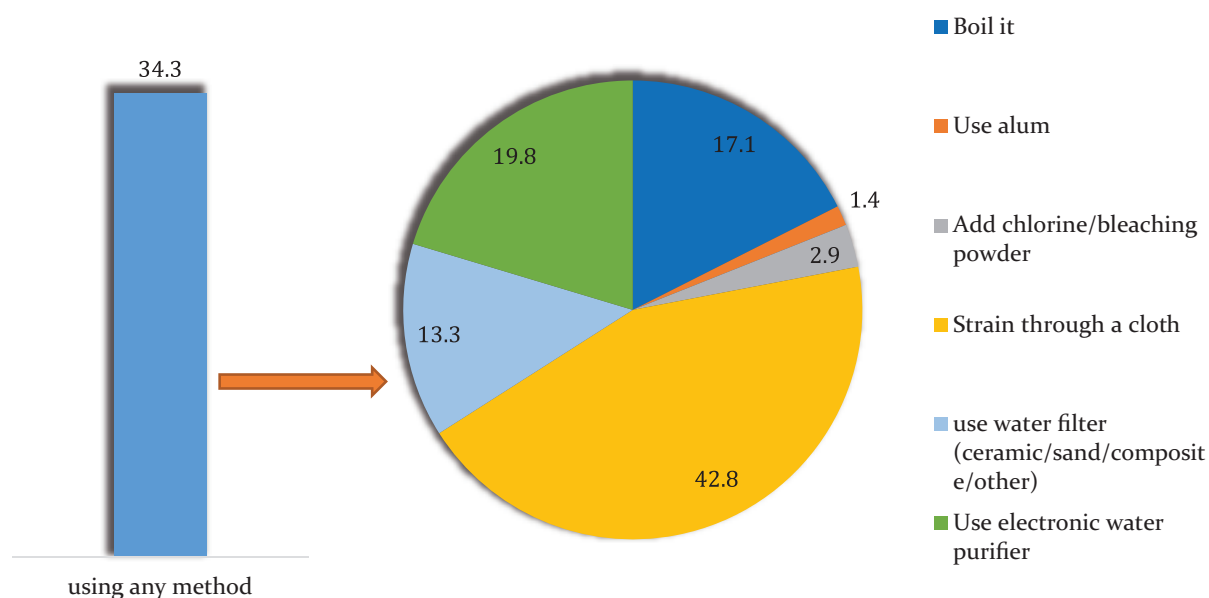
**Figure 3.9 Percent distribution of households by time taken to fetch water in single trip, India, LASI Wave 1, 2017-18**



Note:  
with water facility away from dwelling/yard.

About half of the households that do not have a water source located inside their dwellings or yards spend less than 15 minutes to fetch water in a single trip, while almost 14% of the households spend 30-44 minutes, and around 6% spend more than 45 minutes to do so (Figure 3.9).

**Figure 3.10 Percentage of households using any method for purifying drinking water and the methods used, India, LASI Wave 1, 2017-18**



Close to one-third of the households (34%) used some method to make water safer for drinking. Among these households, 43% strain the water through a cloth, 20% use electric purifiers, 17% boil the water, 13% use a water filter, 3% add chlorine/bleaching powder and 1% use alum to purify the water (Figure 3.10).

### **3.2.2 Sanitation facility**

Improved sanitation is an important physical/environmental issue in public health. Improved sanitation includes sanitation facilities that hygienically separate human excreta from human contact. As per the WHO, access to improved sanitation is measured as the proportion of people using sewer connections, septic system connections, pour-flush latrines, ventilated improved pit latrines, and pit latrines with a slab/covered pit. Shared facilities (including public toilets) are not considered improved. Open defecation refers to when human faeces are disposed of in fields, forests, bushes, open bodies of water, beaches, and other open spaces.

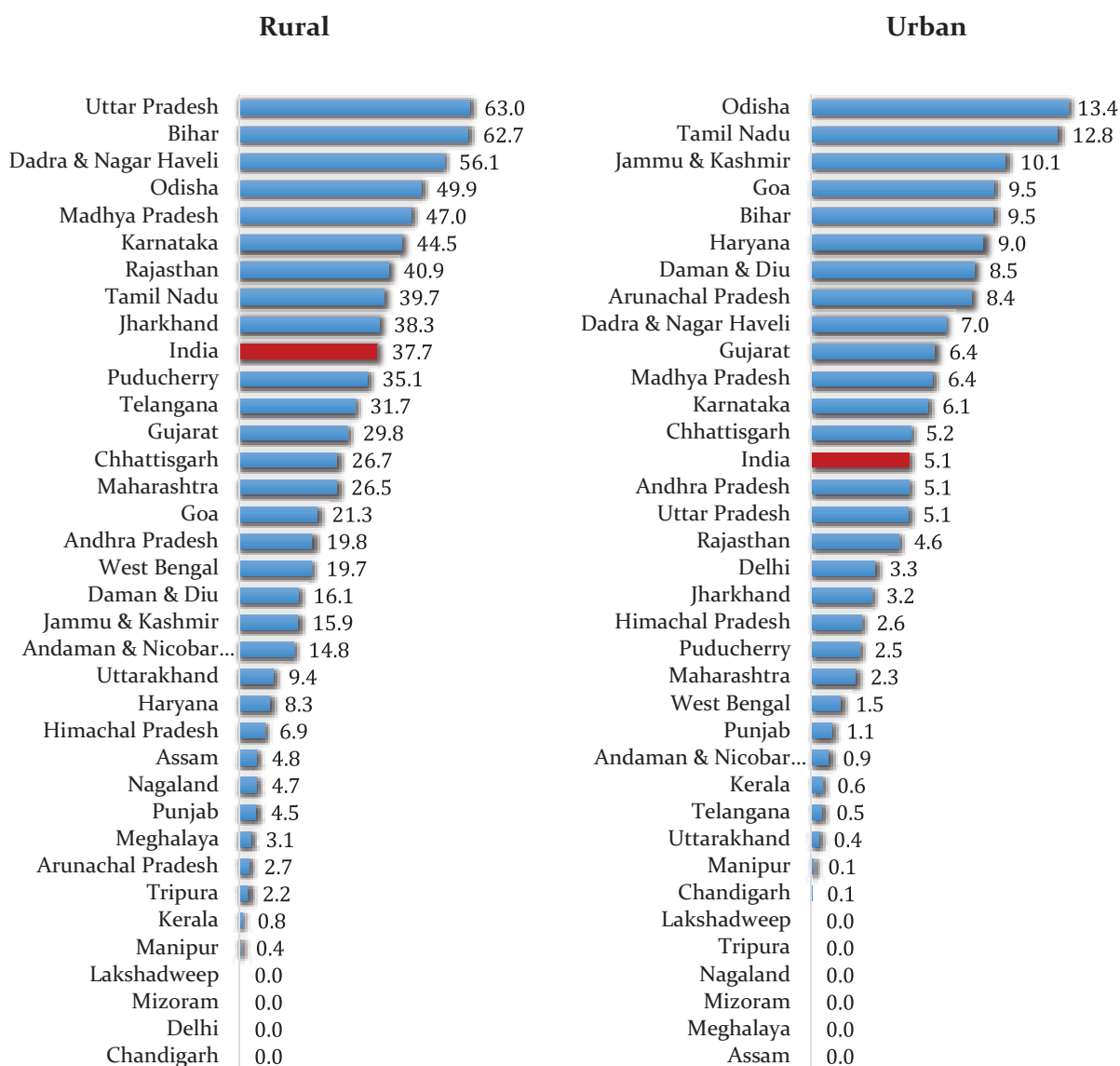
Open defecation and open drainage systems have serious impacts on health and are the leading causes of diseases. To accelerate the efforts to achieve universal sanitation coverage in India and to focus on sanitation, Swachh Bharat Mission was launched on October 2, 2014. In our study, improved sanitation included flush or pour flush toilets (which are flushed to a piped sewer system/septic tank/pit latrine), pit latrines, twin pits, and composting toilets.

About three-fourths of the LASI age eligible households (73%) have access to some type of sanitation facilities (Table 3.9); among these, about 48% of the households use a flush toilet, 22% use a pit latrine and 3% use a composting/twin pit. Further, more than one-fourth (27%) of the households practice open defecation. The proportion of households practicing open defecation is much higher in rural (38%) than urban areas (5%); (Figure 3.11).

Among the states/UTs, almost every household in Chandigarh, Lakshadweep, and Mizoram has access to any type of sanitation facilities; in contrast, Odisha (56%), Uttar Pradesh (50%) and Bihar (43%) are the states with the lowest proportions of households with access to such sanitation facilities.

In rural areas, the proportion of households practising open defecation is the highest in the states/UTs of Uttar Pradesh (63%), Bihar (63%) and Dadra & Nagar Haveli (56%); in urban areas, the states with the highest percentages are Odisha (13%), Tamil Nadu (13%) and Jammu & Kashmir (10%).

**Figure 3.11 Percentage of households practicing open defecation by place of residence, states/UTs, LASI Wave 1, 2017-18**



### 3.2.3 Access to electricity

Electricity is a necessity that influences people's everyday life. In the LASI, information was collected about the availability and duration of electricity supply for the households. Most of the LASI age eligible households (92%) have access to electricity; urban areas have a relatively higher proportion (98%) compared to rural areas (89%).

Across the states/UTs, a lower proportion of households have access to electricity in Uttar Pradesh (76%), Bihar (83%), Arunachal Pradesh (86%), Madhya Pradesh (88%), Odisha (89%), and Andaman & Nicobar Islands (90%) (Table 3.10).

### 3.2.4 Fuel use and indoor pollution

There are two types of fuel used for cooking and non-cooking purposes: clean and unclean. Clean fuels include Liquefied Petroleum Gas (LPG), biogas, and electricity; unclean fuels include kerosene, charcoal, coal, crop residue, wood/shrub, and dung cake (Census, 2011).

Indoor air pollution refers to chemical, biological, and physical contamination of indoor air. In developing countries, the main source of indoor air pollution is biomass smoke which contains suspended particulate matter, nitrogen dioxide, sulphur dioxide, and carbon monoxide (OECD, 2003). Inadequate ventilation allows for the accumulation of a variety of pollutants from building materials, fuel burning, and radon gas emissions (WHO, 2011). In the LASI, indoor pollution refers to households using solid and unclean fuel (for cooking or any other purpose) inside the household, cooking in traditional chullah stoves, or an open fire without any ventilation. Cooking and heating such solid fuels on open fires or traditional stoves results in high levels of indoor smoke, which contains a wide range of health-damaging pollutants. Exposure to such pollutants can lead to various health problems, especially for women, children and the elderly because they spend most of their time indoors (WHO, 2008).

In the LASI, information was collected about the following aspects of fuel use:

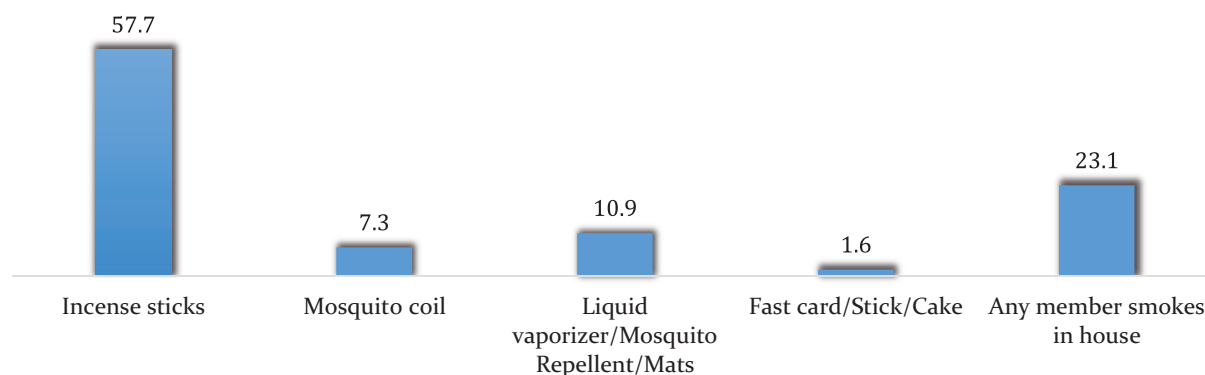
- The main purpose of fuel use: Cooking and other purposes (e.g. boiling water, bathing, lighting, etc.).
- Hours of exposure: Total number of hours and minutes per day exposed to unclean fuels for cooking and other purposes.
- Type of stove used for cooking: Mechanical stove, traditional chullah, or open fire.
- Place of cooking: Cooking usually done inside the household, in a separate building, or outdoors.
- Smoke exhaust system: Traditional chimney, electric chimney, exhaust fan or stove is kept near a window/door.
- Smoke exposure: Use of cigarettes or bidis, incense sticks, mosquito coil, liquid vaporizer, and fast card stick (insect smoke coil) inside the house and the duration (hours) of use.

A half of the LASI age eligible households (52%) use clean cooking fuel (Table 3.9); among these, most households (88%) in urban areas and compared to just about a third (35%) in rural areas use Liquid Petroleum Gas (LPG) for cooking. Less than one-third of the households use clean cooking fuel in Odisha (27%), Chhattisgarh (28%), Meghalaya (29%), Nagaland (31%), Jharkhand (31%) and Bihar (32%). In contrast, more than 80% of the households use such fuel in Goa (81%), Andhra Pradesh (85%), Telangana (86%), Puducherry (88%), Daman & Diu (90%), Chandigarh (98%), and Delhi (99%). Further, in rural areas, more than half of the households (51%) still use wood or shrubs; a smaller proportion (7%) uses cow dung for cooking.

Fourteen percent of households are exposed to indoor pollution. Exposure to indoor pollution is higher in rural areas (19%), compared to urban areas (3%), as rural households often use wood and shrubs as fuel with traditional stoves or open fires (Table 3.9). Among the states/UTs, a high proportion of households are exposed to indoor pollution in the states/UTs of Haryana (27%), Punjab (28%), Uttar Pradesh (31%) and Jharkhand (32%).

It is a common practice among Indian households to use incense sticks inside the house. In India, 58% of the households burn incense sticks inside the house every day; 7% use mosquito coils; 11% use liquid vaporizer/mosquito repellent/mats, and 2% use fast cards/stick/cake inside the house. In 23% of the households, at least one family member exposed to smokes inside the house (Figure 3.12).

**Figure 3.12 Percentage of households using various products inside the house every day, India, LASI Wave 1, 2017-18**



### 3.2.5 Housing condition

In the LASI, a pucca house refers to a house where the roof, wall, and floor are made up of pucca (concrete) material. About two-thirds of the LASI age eligible households (65%) live in pucca houses. Four-fifths of the households (80%) in urban areas live in pucca houses, contrasting with the 42% in rural areas. Among the states, Mizoram (27%) and Manipur (28%) have the lowest proportion of households living in *pucca* houses, while in Delhi and Chandigarh, the proportion is more than 90%.



**Table 3.9 Percent distribution of rural, urban and total households by household characteristics, India, LASI Wave 1, 2017-18**

| Background Characteristics                                              | Rural         | Urban         | Total         |
|-------------------------------------------------------------------------|---------------|---------------|---------------|
| <b>Drinking water Characteristics</b>                                   |               |               |               |
| Piped Water                                                             | 22.5          | 60.5          | 34.5          |
| Public tap/standpipe                                                    | 14.2          | 11.8          | 13.4          |
| Tube well or bore well                                                  | 50.5          | 15.9          | 39.6          |
| Dug well                                                                | 6.9           | 3.9           | 6.0           |
| Spring water                                                            | 0.6           | 0.0           | 0.4           |
| Rain water                                                              | 0.1           | 0.0           | 0.1           |
| Tanker                                                                  | 1.0           | 0.9           | 1.0           |
| Cart with small tank                                                    | 0.2           | 0.3           | 0.2           |
| Surface water<br>(river/dam/lake/ponds/stream/canal/irrigation channel) | 0.4           | 0.1           | 0.3           |
| Bottled water/pouch water                                               | 3.5           | 6.5           | 4.5           |
| <b>Location of drinking water source</b>                                |               |               |               |
| In own dwelling                                                         | 37.6          | 70.0          | 47.6          |
| In own yard/plot                                                        | 23.2          | 16.4          | 21.1          |
| Elsewhere (Outside dwelling)                                            | 39.3          | 13.6          | 31.4          |
| <b>Type of Sanitation Facilities</b>                                    |               |               |               |
| Flush or pour flush toilet                                              | 34.7          | 75.2          | 47.5          |
| Flush to piped sewer system                                             | 18.3          | 45.1          | 31.7          |
| Flush to septic tank                                                    | 65.6          | 49.0          | 57.3          |
| Flush to pit latrine                                                    | 15.8          | 5.3           | 10.5          |
| Flush to somewhere else                                                 | 0.3           | 0.6           | 0.5           |
| Pit latrine                                                             | 24.1          | 18.3          | 22.3          |
| Twin pit/composting toilet                                              | 3.5           | 1.4           | 2.8           |
| No facility, use open space or field                                    | 37.7          | 5.1           | 27.5          |
| <b>Electricity</b>                                                      |               |               |               |
| Yes                                                                     | 88.6          | 98.2          | 91.7          |
| No                                                                      | 11.4          | 1.8           | 8.3           |
| <b>Type of House</b>                                                    |               |               |               |
| Pucca                                                                   | 42.3          | 80.1          | 54.2          |
| Semi Pucca                                                              | 34.6          | 15.7          | 28.7          |
| Kachha                                                                  | 23.1          | 4.2           | 17.2          |
| <b>Type of Cooking Fuel</b>                                             |               |               |               |
| LPG                                                                     | 34.9          | 88.3          | 51.7          |
| Biogas                                                                  | 0.5           | 0.1           | 0.4           |
| Kerosene                                                                | 0.3           | 1.1           | 0.6           |
| Electric                                                                | 0.2           | 0.5           | 0.3           |
| Charcoal/Lignite/Coal                                                   | 3.5           | 1.0           | 2.7           |
| Crop Residue                                                            | 2.5           | 0.1           | 1.8           |
| Wood/Shrub                                                              | 50.8          | 8.0           | 37.3          |
| Dung Cake                                                               | 6.9           | 0.6           | 4.9           |
| Others                                                                  | 0.0           | 0.1           | 0.1           |
| <b>Place for cooking</b>                                                |               |               |               |
| In the house                                                            | 74.4          | 88.4          | 78.8          |
| In a separate building                                                  | 13.2          | 8.5           | 11.7          |
| Outdoors                                                                | 12.5          | 3.1           | 9.5           |
| <b>Exposed to indoor smoking</b>                                        | <b>26.6</b>   | <b>15.4</b>   | <b>23.1</b>   |
| <b>Total number of HHs</b>                                              | <b>27,465</b> | <b>15,273</b> | <b>42,738</b> |

Note: 211 cases are missing in this section

**Table 3.10 Percentage of households with selected housing characteristics, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territories | With electricity | With improved source of drinking water <sup>1</sup> | With water facility inside dwelling/own yard | With improved sanitation Facility <sup>2</sup> | Using clean cooking fuel <sup>3</sup> | Exposed to indoor pollution <sup>4</sup> | Living in pucca house <sup>5</sup> | Number        |
|--------------------------|------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------|---------------|
| <b>India</b>             | <b>91.7</b>      | <b>94.0</b>                                         | <b>65.3</b>                                  | <b>72.3</b>                                    | <b>52.4</b>                           | <b>14.0</b>                              | <b>65.4</b>                        | <b>42,738</b> |
| <b>North</b>             |                  |                                                     |                                              |                                                |                                       |                                          |                                    |               |
| Chandigarh               | 99.2             | 99.7                                                | 90.7                                         | 100.0                                          | 98.0                                  | 3.5                                      | 90.1                               | 646           |
| Delhi                    | 99.3             | 90.7                                                | 79.5                                         | 96.7                                           | 98.8                                  | 1.2                                      | 97.5                               | 752           |
| Haryana                  | 98.8             | 91.7                                                | 81.2                                         | 91.4                                           | 52.5                                  | 27.3                                     | 86.6                               | 1,241         |
| Himachal Pradesh         | 99.7             | 97.6                                                | 84.4                                         | 93.6                                           | 46.3                                  | 2.8                                      | 82.4                               | 788           |
| Jammu & Kashmir          | 97.9             | 98.5                                                | 90.6                                         | 81.3                                           | 67.2                                  | 1.3                                      | 77.1                               | 957           |
| Punjab                   | 98.9             | 99.3                                                | 92.6                                         | 96.2                                           | 65.3                                  | 28.4                                     | 61.7                               | 1,229         |
| Rajasthan                | 92.3             | 91.9                                                | 65.5                                         | 68.4                                           | 47.8                                  | 10.5                                     | 81.1                               | 1,298         |
| Uttarakhand              | 98.7             | 99.7                                                | 78.8                                         | 92.9                                           | 50.3                                  | 3.0                                      | 77.1                               | 862           |
| <b>Central</b>           |                  |                                                     |                                              |                                                |                                       |                                          |                                    |               |
| Chhattisgarh             | 92.1             | 98.7                                                | 37.2                                         | 78.1                                           | 28.2                                  | 10.8                                     | 59.9                               | 1,187         |
| Madhya Pradesh           | 88.2             | 98.9                                                | 44.7                                         | 65.0                                           | 36.1                                  | 13.9                                     | 61.7                               | 1,689         |
| Uttar Pradesh            | 75.6             | 99.2                                                | 79.4                                         | 49.6                                           | 44.6                                  | 30.9                                     | 60.8                               | 2,744         |
| <b>East</b>              |                  |                                                     |                                              |                                                |                                       |                                          |                                    |               |
| Bihar                    | 82.9             | 97.1                                                | 86.6                                         | 43.2                                           | 31.5                                  | 23.1                                     | 53.6                               | 2,082         |
| Jharkhand                | 90.6             | 96.5                                                | 46.7                                         | 70.6                                           | 31.2                                  | 32.1                                     | 62.2                               | 1,408         |
| Odisha                   | 88.9             | 99.8                                                | 42.5                                         | 56.2                                           | 26.8                                  | 11.0                                     | 72.8                               | 1,643         |
| West Bengal              | 96.0             | 96.3                                                | 47.3                                         | 86.8                                           | 38.5                                  | 15.9                                     | 63.5                               | 2,275         |
| <b>Northeast</b>         |                  |                                                     |                                              |                                                |                                       |                                          |                                    |               |
| Arunachal Pradesh        | 86.2             | 99.3                                                | 87.9                                         | 96.0                                           | 53.1                                  | 17.4                                     | 38.3                               | 702           |
| Assam                    | 91.1             | 96.8                                                | 89.8                                         | 95.9                                           | 34.1                                  | 12.7                                     | 62.6                               | 1,509         |
| Manipur                  | 97.9             | 57.1                                                | 59.2                                         | 98.6                                           | 54.2                                  | 3.1                                      | 27.8                               | 860           |
| Meghalaya                | 95.9             | 95.4                                                | 70.8                                         | 97.6                                           | 29.1                                  | 7.5                                      | 35.1                               | 634           |
| Mizoram                  | 98.3             | 95.3                                                | 95.2                                         | 99.5                                           | 62.3                                  | 10.2                                     | 26.8                               | 723           |
| Nagaland                 | 99.5             | 99.1                                                | 64.6                                         | 96.5                                           | 30.9                                  | 11.7                                     | 45.0                               | 793           |
| Tripura                  | 94.1             | 99.2                                                | 72.6                                         | 98.5                                           | 41.5                                  | 10.9                                     | 63.0                               | 715           |
| <b>West</b>              |                  |                                                     |                                              |                                                |                                       |                                          |                                    |               |
| Dadra & Nagar Haveli     | 95.6             | 86.0                                                | 69.6                                         | 74.3                                           | 59.6                                  | 15.2                                     | 57.2                               | 604           |
| Daman & Diu              | 99.3             | 80.2                                                | 72.6                                         | 90.6                                           | 90.3                                  | 2.6                                      | 82.4                               | 564           |
| Goa                      | 99.3             | 98.3                                                | 94.2                                         | 86.1                                           | 80.6                                  | 6.7                                      | 79.4                               | 875           |
| Gujarat                  | 96.1             | 89.5                                                | 76.4                                         | 80.2                                           | 54.5                                  | 5.7                                      | 64.6                               | 1,432         |
| Maharashtra              | 96.6             | 94.4                                                | 74.5                                         | 84.6                                           | 71.8                                  | 5.5                                      | 69.7                               | 2,419         |

Continued

Continued

| States/Union Territories  | With electricity | With improved source of drinking water <sup>1</sup> | With water facility inside dwelling/own yard | With improved sanitation Facility <sup>2</sup> | Using clean cooking fuel <sup>3</sup> | Exposed to indoor pollution <sup>4</sup> | Living in pucca house <sup>5</sup> | Number |
|---------------------------|------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------|--------|
| <b>South</b>              |                  |                                                     |                                              |                                                |                                       |                                          |                                    |        |
| Andaman & Nicobar Islands | 89.6             | 94.5                                                | 81.9                                         | 90.6                                           | 64.9                                  | 10.5                                     | 53.2                               | 725    |
| Andhra Pradesh            | 98.9             | 74.9                                                | 49.5                                         | 84.7                                           | 85.0                                  | 7.5                                      | 80.4                               | 1,508  |
| Karnataka                 | 97.9             | 87.0                                                | 58.2                                         | 68.4                                           | 55.2                                  | 6.3                                      | 53.3                               | 1,484  |
| Kerala                    | 99.5             | 98.7                                                | 92.7                                         | 99.2                                           | 53.3                                  | 5.2                                      | 74.6                               | 1,391  |
| Lakshadweep               | 99.6             | 100.0                                               | 92.1                                         | 99.9                                           | 38.7                                  | 6.4                                      | 72.6                               | 619    |
| Puducherry                | 99.1             | 98.6                                                | 93.9                                         | 87.4                                           | 88.0                                  | 5.1                                      | 80.2                               | 838    |
| Tamil Nadu                | 96.3             | 89.7                                                | 50.6                                         | 73.0                                           | 79.4                                  | 4.1                                      | 59.9                               | 2,138  |
| Telangana                 | 98.0             | 74.4                                                | 54.1                                         | 78.6                                           | 86.0                                  | 8.5                                      | 57.2                               | 1,404  |

Notes

<sup>1</sup> Improved drinking water source includes water from pipe, public tap/standpipe, tube well or bore well, dug well, spring water and rain water.<sup>2</sup> Improved sanitation includes flush or pour flush toilet (which is flushed to piped sewer system/septic tank/ pit latrine), pit latrine, twin pit, composting toilet.<sup>3</sup> Clean cooking fuel includes LPG, Biogas and Electricity<sup>4</sup> Indoor pollution refers to households using solid and unclean fuel (for cooking or any other purpose) inside the household and cooking in traditional chullah/stove or open fire without any ventilation. Unclean fuel refers to use of kerosene, charcoal, coal, crop residue, wood/shrub and dung cake.<sup>5</sup> *Pucca* house refers to a house with a roof, wall and floor is made up of *pucca* (concrete) material. This indicator is based on the observation of the investigator.

### **Key findings: housing and environment**

- Ninety-four percent of LASI age eligible households in India have an improved drinking water source; this varies by states from 100% in Lakshadweep to 57% in Manipur.
- Sixty-five percent of the households have a water facility inside their dwellings/yards, ranging from 95% in Mizoram to 37% in Chhattisgarh.
- Seventy-three percent of the households have access to an improved sanitation facility. Twenty-seven percent of the households practice open defecation.
- Ninety-two percent of the households have access to electricity; urban areas have a relatively higher proportion (98%) compared to rural areas (89%).
- Fifty-two percent of the households use clean cooking fuel. About 60% of the rural households still depend on wood/shrub/cow dung for cooking.
- Fourteen percent of the households are exposed to indoor pollution; ranging from 32% in Jharkhand to 1% in Delhi.
- Sixty-five percent of the households live in pucca houses.
- In 23% of the households, at least one family member smokes inside the house.

## 4. HOUSEHOLD ECONOMIC WELL-BEING OF OLDER ADULTS IN INDIA

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The economic well-being of households is the key determinant of elderly health. In the absence of a robust and universal social security system, the low coverage of old-age pension, a large share of employment in the informal sector, early retirement from formal employment, and an increasing health expenditure, elderly households in India are economically vulnerable and prone to financial shocks. Furthermore, increasing urbanisation, rural-urban migration, and modernisation have led to several socio-economic changes, including changes in the structure of families and living arrangements. In India, there is a considerable proportion of elderly living alone, especially women. Elderly women, the poor elderly, the elderly living in rural areas, and other marginal groups of society are highly vulnerable. In such wider contexts, the elderly often have to depend on multiple sources, such as remittances from children, personal savings, private insurance, pensions, etc to meet their economic needs. Moreover, the economic well-being of individuals in India is largely dependent on the economic conditions of the family. The extent of poverty is higher among elderly households, compared with non-elderly households (Srivastava and Mohanty 2012). While the longevity of the elderly has been increasing across states and socio-economic groups, comparable data on the economic well-being of the elderly in India are limited.

Economic inequality is also associated with poor health amongst the population, especially among the elderly (Pickett and Wilkinson 2015). A large and growing number of studies from both developing and developed countries suggest strong and positive associations between various economic indicators and longevity, nutrition, and health care utilisation (Chetty et al. 2016; Preston 1975). Hospitalisation and out-of-pocket (OOP) expenditures have a strong age gradient, and elderly households are more likely to have high OOP expenditure and catastrophic health spending compared with non-elderly households (Kastor and Mohanty 2018; Pandey et al. 2018). Health care utilisation is a proximate determinant of health, and OOP expenditure on health care is directly associated with the economic well-being of households.

Although large-scale population-based health surveys have bridged the gap in the data on health in India, none of them has collected comprehensive economic indicators of households. The National Sample Survey Organisation (NSSO) regularly collects consumption expenditure data and has been the basis of economic planning in India. The India Human Development Survey (IHDS) is the only population-based survey to collect data on income at the household level. The National Family and Health Surveys (NFHSs) used economic proxies (wealth index) that do not adequately capture the economic well-being of households. Understanding economic differentials in health and health care utilisation is a prerequisite for evidence-based policy especially for the elderly. Considering this particular context, LASI covers economic measures of households more comprehensively than most other surveys in India.

In this chapter, economic well-being is assessed using a comprehensive range of economic measures: per capita consumption expenditure, per capita income (PCI), financial assets and indebtedness, and household health insurance. In addition, household expenditure on inpatient and out-patient care and catastrophic health spending are estimated. Below, we describe comprehensive measures on the economic well-being of households in India and its individual states/UTs.

## **4.1 HOUSEHOLD CONSUMPTION**

In the LASI survey, data on consumption expenditure are collected using the abridged version of the consumption schedule of the National Sample Survey (NSS). Sets of 11 and 29 questions on the expenditures on food and non-food items, respectively, was used to canvas the sample households. Food expenditure was collected based on a reference period of seven days, and non-food expenditure was collected based on reference periods of 30 days and 365 days. Food and non-food expenditures have been standardised to the 30-day reference period. The monthly per capita consumption expenditure (MPCE) is computed and used as the summary measure of consumption.



**Table 4.1 Monthly per capita consumption expenditure (MPCE) in (₹) and household non-food expenditure as a share of MPCE by place of residence according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Rural                                              |      |                                       |      |                                             |       | Urban                                 |      |                                       |      |                                             |      | Total                                 |      |                                       |       |
|---------------------------------------|----------------------------------------------------|------|---------------------------------------|------|---------------------------------------------|-------|---------------------------------------|------|---------------------------------------|------|---------------------------------------------|------|---------------------------------------|------|---------------------------------------|-------|
|                                       | Monthly per capita expenditure (MPCE) <sup>1</sup> |      | Monthly per capita expenditure (MPCE) |      | Non-Food expenditure as a share of MPCE (%) |       | Monthly per capita expenditure (MPCE) |      | Monthly per capita expenditure (MPCE) |      | Non-Food expenditure as a share of MPCE (%) |      | Monthly per capita expenditure (MPCE) |      | Monthly per capita expenditure (MPCE) |       |
|                                       | Mean                                               |      | Median                                |      | Mean                                        |       | Mean                                  |      | Mean                                  |      | Median                                      |      | Mean                                  |      | Median                                |       |
|                                       | Number                                             |      | Number                                |      | Number                                      |       | Number                                |      | Number                                |      | Number                                      |      | Number                                |      | Number                                |       |
| <b>MPCE quintile</b>                  |                                                    |      |                                       |      |                                             |       |                                       |      |                                       |      |                                             |      |                                       |      |                                       |       |
| Poorest                               | 1041                                               | 1091 | 1718                                  | 2333 | 3235                                        | 5100  | 32.4                                  | 37.3 | 40.8                                  | 46.2 | 60.5                                        | 1041 | 1091                                  | 1718 | 2333                                  | 3235  |
| Poorer                                | 1714                                               | 1718 | 2333                                  | 3235 | 5100                                        | 6288  | 37.3                                  | 40.8 | 46.2                                  | 60.5 | 1041                                        | 1091 | 1718                                  | 2333 | 3235                                  | 5100  |
| Middle                                | 2349                                               | 2333 | 3235                                  | 5100 | 6288                                        | 8591  | 40.8                                  | 46.2 | 60.5                                  | 1041 | 1091                                        | 1718 | 2333                                  | 3235 | 5100                                  | 6288  |
| Richer                                | 3272                                               | 3235 | 5100                                  | 6288 | 8591                                        | 11847 | 46.2                                  | 60.5 | 1041                                  | 1091 | 1718                                        | 2333 | 3235                                  | 5100 | 6288                                  | 8591  |
| Richest                               | 6288                                               | 5100 | 6288                                  | 8591 | 11847                                       | 16080 | 60.5                                  | 1041 | 1091                                  | 1718 | 2333                                        | 3235 | 5100                                  | 6288 | 8591                                  | 11847 |
| <b>Household size</b>                 |                                                    |      |                                       |      |                                             |       |                                       |      |                                       |      |                                             |      |                                       |      |                                       |       |
| 1-2                                   | 3455                                               | 2772 | 2488                                  | 2106 | 1759                                        | 2051  | 41.7                                  | 46.0 | 49.8                                  | 53.5 | 60.4                                        | 3455 | 2772                                  | 2488 | 2106                                  | 1759  |
| 3-4                                   | 3055                                               | 2488 | 2106                                  | 1759 | 2051                                        | 2051  | 46.0                                  | 53.5 | 60.4                                  | 60.4 | 60.4                                        | 3055 | 2488                                  | 2106 | 1759                                  | 2051  |
| 5-6                                   | 2646                                               | 2106 | 1759                                  | 2051 | 2051                                        | 2051  | 49.8                                  | 53.5 | 60.4                                  | 60.4 | 60.4                                        | 2646 | 2106                                  | 1759 | 2051                                  | 2051  |
| 7 or more                             | 2051                                               | 1759 | 2051                                  | 2051 | 2051                                        | 2051  | 46.0                                  | 53.5 | 60.4                                  | 60.4 | 60.4                                        | 2051 | 1759                                  | 2051 | 2051                                  | 2051  |
| <b>Religion of head of household</b>  |                                                    |      |                                       |      |                                             |       |                                       |      |                                       |      |                                             |      |                                       |      |                                       |       |
| Hindu                                 | 2513                                               | 2020 | 2062                                  | 1843 | 2601                                        | 1989  | 47.4                                  | 41.3 | 43.3                                  | 53.5 | 51.0                                        | 2513 | 2020                                  | 2062 | 1843                                  | 2601  |
| Muslim                                | 2483                                               | 2062 | 1843                                  | 2601 | 1989                                        | 1989  | 41.3                                  | 43.3 | 53.5                                  | 51.0 | 51.0                                        | 2483 | 2062                                  | 1843 | 2601                                  | 1989  |
| Christian                             | 2342                                               | 1843 | 2601                                  | 1989 | 1989                                        | 1989  | 43.3                                  | 53.5 | 51.0                                  | 51.0 | 51.0                                        | 2342 | 1843                                  | 2601 | 1989                                  | 1989  |
| Other                                 | 3545                                               | 2601 | 1989                                  | 1989 | 1989                                        | 1989  | 53.5                                  | 51.0 | 51.0                                  | 51.0 | 51.0                                        | 3545 | 2601                                  | 1989 | 1989                                  | 1989  |
| <b>Caste of the head of household</b> |                                                    |      |                                       |      |                                             |       |                                       |      |                                       |      |                                             |      |                                       |      |                                       |       |
| Scheduled tribe                       | 1989                                               | 1587 | 1913                                  | 2070 | 2405                                        | 2539  | 40.7                                  | 42.7 | 46.4                                  | 52.7 | 54.2                                        | 1989 | 1587                                  | 1913 | 2070                                  | 2405  |
| Scheduled caste                       | 2273                                               | 1913 | 2070                                  | 2405 | 2539                                        | 2539  | 42.7                                  | 46.4 | 52.7                                  | 54.2 | 54.2                                        | 2273 | 1913                                  | 2070 | 2405                                  | 2539  |
| Other backward class                  | 2503                                               | 2070 | 2405                                  | 2539 | 2539                                        | 2539  | 46.4                                  | 52.7 | 54.2                                  | 54.2 | 54.2                                        | 2503 | 2070                                  | 2405 | 2539                                  | 2539  |
| None of the above                     | 3175                                               | 2405 | 2539                                  | 2539 | 2539                                        | 2539  | 52.7                                  | 54.2 | 54.2                                  | 54.2 | 54.2                                        | 3175 | 2405                                  | 2539 | 2539                                  | 2539  |
| <b>Household having</b>               |                                                    |      |                                       |      |                                             |       |                                       |      |                                       |      |                                             |      |                                       |      |                                       |       |
| No member 60+                         | 2539                                               | 2066 | 2027                                  | 2040 | 2040                                        | 2040  | 45.4                                  | 47.7 | 46.9                                  | 46.9 | 46.9                                        | 2539 | 2066                                  | 2027 | 2040                                  | 2040  |
| At least one member 60+               | 2545                                               | 2027 | 2040                                  | 2040 | 2040                                        | 2040  | 47.7                                  | 46.9 | 46.9                                  | 46.9 | 46.9                                        | 2545 | 2027                                  | 2040 | 2040                                  | 2040  |
| <b>Total</b>                          | 2543                                               | 2040 | 2040                                  | 2040 | 2040                                        | 2040  | 46.9                                  | 46.9 | 46.9                                  | 46.9 | 46.9                                        | 2543 | 2040                                  | 2040 | 2040                                  | 2040  |

Note

<sup>1</sup> MPCE is defined as total monthly household consumption expenditure divided by household size. Includes household's per capita spending on food and non-food items including spending on health, education, utilities etc.

**Table 4.2 Monthly per capita consumption expenditure (MPCE) in (₹) and household non-food expenditure as a share of MPCE by place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Rural                                 |                                       |                                             |               | Urban                                 |                                       |                                             |               | Total                                 |                                       |                                             |               |
|---------------------------|---------------------------------------|---------------------------------------|---------------------------------------------|---------------|---------------------------------------|---------------------------------------|---------------------------------------------|---------------|---------------------------------------|---------------------------------------|---------------------------------------------|---------------|
|                           | Monthly per capita expenditure (MPCE) | Monthly per capita expenditure (MPCE) | Non-Food expenditure as a share of MPCE (%) | Number        | Monthly per capita expenditure (MPCE) | Monthly per capita expenditure (MPCE) | Non-Food expenditure as a share of MPCE (%) | Number        | Monthly per capita expenditure (MPCE) | Monthly per capita expenditure (MPCE) | Non-Food expenditure as a share of MPCE (%) | Number        |
|                           | Mean                                  | Median                                |                                             |               | Mean                                  | Median                                |                                             |               | Mean                                  | Median                                |                                             |               |
| <b>India</b>              | <b>2543</b>                           | <b>2040</b>                           | <b>46.9</b>                                 | <b>27,576</b> | <b>3944</b>                           | <b>3009</b>                           | <b>53.3</b>                                 | <b>15,373</b> | <b>2967</b>                           | <b>2287</b>                           | <b>49.5</b>                                 | <b>42,949</b> |
| <b>North</b>              |                                       |                                       |                                             |               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |
| Chandigarh                | -                                     | -                                     | -                                           | -             | -                                     | -                                     | -                                           | -             | 5691                                  | 4639                                  | 54                                          | 651           |
| Delhi                     | -                                     | -                                     | -                                           | -             | -                                     | -                                     | -                                           | -             | 3611                                  | 2885                                  | 45                                          | 754           |
| Haryana                   | 2646                                  | 2302                                  | 47.6                                        | 833           | 3501                                  | 3056                                  | 56.6                                        | 418           | 2952                                  | 2543                                  | 51.4                                        | 1,251         |
| Himachal Pradesh          | 3824                                  | 2943                                  | 54.3                                        | 700           | 4316                                  | 3135                                  | 59.5                                        | 105           | 3880                                  | 2951                                  | 55                                          | 805           |
| Jammu & Kashmir           | 4213                                  | 3443                                  | 46.4                                        | 694           | 4916                                  | 4428                                  | 46.3                                        | 263           | 4411                                  | 3664                                  | 46.4                                        | 957           |
| Punjab                    | 4273                                  | 3139                                  | 56.1                                        | 871           | 4331                                  | 3711                                  | 52                                          | 363           | 4285                                  | 3294                                  | 55.2                                        | 1,234         |
| Rajasthan                 | 2612                                  | 2118                                  | 52.7                                        | 1,025         | 3615                                  | 2974                                  | 54.1                                        | 277           | 2882                                  | 2427                                  | 53.2                                        | 1,302         |
| Uttarakhand               | 2742                                  | 2280                                  | 50.1                                        | 618           | 3627                                  | 2745                                  | 54.9                                        | 245           | 3034                                  | 2401                                  | 52                                          | 863           |
| <b>Central</b>            |                                       |                                       |                                             |               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |
| Chhattisgarh              | 1597                                  | 1366                                  | 40.7                                        | 971           | 3073                                  | 2580                                  | 54.7                                        | 218           | 1945                                  | 1499                                  | 45.9                                        | 1,189         |
| Madhya Pradesh            | 2535                                  | 2096                                  | 46.6                                        | 1,192         | 3528                                  | 2879                                  | 54.2                                        | 498           | 2835                                  | 2287                                  | 49.5                                        | 1,690         |
| Uttar Pradesh             | 2216                                  | 1880                                  | 47.1                                        | 2,155         | 2856                                  | 2337                                  | 52.1                                        | 592           | 2348                                  | 1960                                  | 48.3                                        | 2,747         |
| <b>East</b>               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |
| Bihar                     | 1963                                  | 1687                                  | 39                                          | 1,866         | 2382                                  | 1937                                  | 45.7                                        | 217           | 2007                                  | 1724                                  | 39.8                                        | 2,083         |
| Jharkhand                 | 2067                                  | 1772                                  | 40.3                                        | 1,123         | 3730                                  | 2715                                  | 52.4                                        | 285           | 2475                                  | 1933                                  | 44.8                                        | 1,408         |
| Odisha                    | 2067                                  | 1670                                  | 41.5                                        | 1,391         | 3330                                  | 2898                                  | 55.4                                        | 254           | 2316                                  | 1841                                  | 45.5                                        | 1,645         |
| West Bengal               | 2455                                  | 2057                                  | 40.5                                        | 1,148         | 3786                                  | 3042                                  | 50.8                                        | 1,131         | 2913                                  | 2329                                  | 45.1                                        | 2,279         |
| <b>Northeast</b>          |                                       |                                       |                                             |               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |
| Arunachal Pradesh         | 3496                                  | 2863                                  | 49.6                                        | 534           | 3828                                  | 3470                                  | 39.4                                        | 168           | 3557                                  | 2964                                  | 47.6                                        | 702           |
| Assam                     | 2437                                  | 1942                                  | 43.4                                        | 1,322         | 3174                                  | 2730                                  | 47.4                                        | 189           | 2551                                  | 2065                                  | 44.2                                        | 1,511         |
| Manipur                   | 3578                                  | 3196                                  | 48.4                                        | 574           | 4659                                  | 4180                                  | 54.8                                        | 286           | 3990                                  | 3520                                  | 51.3                                        | 860           |
| Meghalaya                 | 2128                                  | 1733                                  | 41.5                                        | 524           | 4252                                  | 3369                                  | 49.5                                        | 112           | 2562                                  | 2058                                  | 44.2                                        | 636           |
| Mizoram                   | 2158                                  | 1841                                  | 51.8                                        | 360           | 4195                                  | 3096                                  | 55.8                                        | 372           | 3215                                  | 2292                                  | 54.5                                        | 732           |
| Nagaland                  | 3701                                  | 2574                                  | 50.5                                        | 569           | 5248                                  | 4492                                  | 52.1                                        | 230           | 4148                                  | 3019                                  | 51.1                                        | 799           |
| Tripura                   | 2671                                  | 2357                                  | 39.6                                        | 555           | 3881                                  | 3170                                  | 48.5                                        | 166           | 3074                                  | 2592                                  | 43.4                                        | 721           |
| <b>West</b>               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |
| Dadra & Nagar Haveli      | 1991                                  | 1604                                  | 42.2                                        | 391           | 3881                                  | 2923                                  | 57.2                                        | 240           | 3080                                  | 2249                                  | 53.1                                        | 631           |
| Daman & Diu               | 3356                                  | 3005                                  | 34.4                                        | 210           | 3523                                  | 3099                                  | 38.6                                        | 367           | 3502                                  | 3097                                  | 38.1                                        | 577           |
| Goa                       | 4349                                  | 3747                                  | 53.9                                        | 365           | 4952                                  | 4196                                  | 50.9                                        | 512           | 4713                                  | 3921                                  | 52                                          | 877           |
| Gujarat                   | 2720                                  | 2346                                  | 46.5                                        | 857           | 3421                                  | 2914                                  | 51.7                                        | 598           | 3011                                  | 2553                                  | 49                                          | 1,455         |
| Maharashtra               | 2932                                  | 2083                                  | 58.8                                        | 1,159         | 3687                                  | 2777                                  | 55.6                                        | 1,262         | 3279                                  | 2349                                  | 57.1                                        | 2,421         |
| <b>South</b>              |                                       |                                       |                                             |               |                                       |                                       |                                             |               |                                       |                                       |                                             |               |
| Andaman & Nicobar Islands | 3509                                  | 2403                                  | 44.4                                        | 451           | 5942                                  | 4003                                  | 54.4                                        | 274           | 4418                                  | 3135                                  | 49.5                                        | 725           |
| Andhra Pradesh            | 3254                                  | 2691                                  | 47.1                                        | 1,107         | 4084                                  | 3595                                  | 55.5                                        | 404           | 3517                                  | 2918                                  | 50.2                                        | 1,511         |
| Karnataka                 | 2893                                  | 2532                                  | 43.9                                        | 1,012         | 6104                                  | 4175                                  | 56.5                                        | 476           | 3868                                  | 2934                                  | 50                                          | 1,488         |
| Kerala                    | 3331                                  | 2713                                  | 50.2                                        | 709           | 3539                                  | 2908                                  | 51.6                                        | 702           | 3435                                  | 2798                                  | 50.9                                        | 1,411         |
| Lakshadweep               | 2007                                  | 1453                                  | 46                                          | 132           | 2518                                  | 1985                                  | 42.9                                        | 495           | 2457                                  | 1910                                  | 43.2                                        | 627           |
| Puducherry                | 2250                                  | 1843                                  | 43.6                                        | 269           | 3063                                  | 2618                                  | 49.7                                        | 570           | 2814                                  | 2329                                  | 48.2                                        | 839           |
| Tamil Nadu                | 2604                                  | 2152                                  | 43                                          | 891           | 3436                                  | 2980                                  | 49                                          | 1,259         | 3036                                  | 2557                                  | 46.5                                        | 2,150         |
| Telangana                 | 2901                                  | 2322                                  | 48.9                                        | 972           | 4142                                  | 3423                                  | 55.9                                        | 446           | 3379                                  | 2663                                  | 52.2                                        | 1,418         |

“-” Rural and urban is not applicable for Delhi and Chandigarh.

Table 4.1 presents estimates of the MPCE and household non-food expenditure as a share of the MPCE by background characteristics. Although LASI estimates on consumption expenditure are not directly comparable with NSS estimates, the pattern remains similar. As per the 2011–12 consumption survey of the NSS, the MPCE for all of India was ₹ 1,764, whereas it was ₹ 1,454 in rural areas and ₹ 2,630 in urban areas. Food expenditure accounted for about 49% of the consumption expenditure, and the Gini index was 0.35.

The estimated mean MPCE of India from LASI age-eligible households (at least one-member age 45 and above) is ₹ 2,967: ₹ 2,543 in rural areas and ₹ 3,944 in urban areas. The Gini index is 0.376: 0.349 in rural areas and 0.370 in urban areas. The mean MPCE decreases with the increase in household size. It is the highest among households belonging to the other religion category (₹ 3,703), followed by Muslim (₹ 3,447), Hindu (₹ 2,853), and Christian (₹ 2,826) households. Among all caste groups, the MPCE is the lowest among Scheduled tribe (₹ 2,208) households, followed by Scheduled caste (₹ 2,444) and other backward class (₹ 3,029). The mean MPCE of households with at least one elderly person age 60 and above is ₹ 2,948, compared with households with no elderly members (₹ 3,001).

Table 4.2 presents the estimates of MPCE and household non-food expenditure as a share of MPCE by states and place of residence in India. The state-wise variation of MPCE reflects the general pattern of economic development observed in India (Mohanty et al. 2019). The MPCE is higher than the national average in economically developed states such as Chandigarh (₹ 5,691), Goa (₹ 4,713), and Punjab (₹ 4,285) and lower than the national average in states such as Chhattisgarh (₹ 1,945), Bihar (₹ 2,007), Odisha (₹ 2,316), and Uttar Pradesh (₹ 2,348). The MPCE in urban areas is higher than that in rural areas across all the states/UTs in India. About half of the consumption expenditure in India is spent on non-food items, although this proportion varies from 40% in the state of Bihar to 55% in the state of Punjab. In general, the share of non-food expenditure is higher in more economically developed states compared with economically less developed states. Figure 4.1 presents the Lorenz curve based on consumption expenditure. It depicts the inequality pattern in the country's consumption expenditure.

**Figure 4.1 Lorenz curve of monthly per capita consumption expenditure, India, LASI Wave 1, 2017-18**

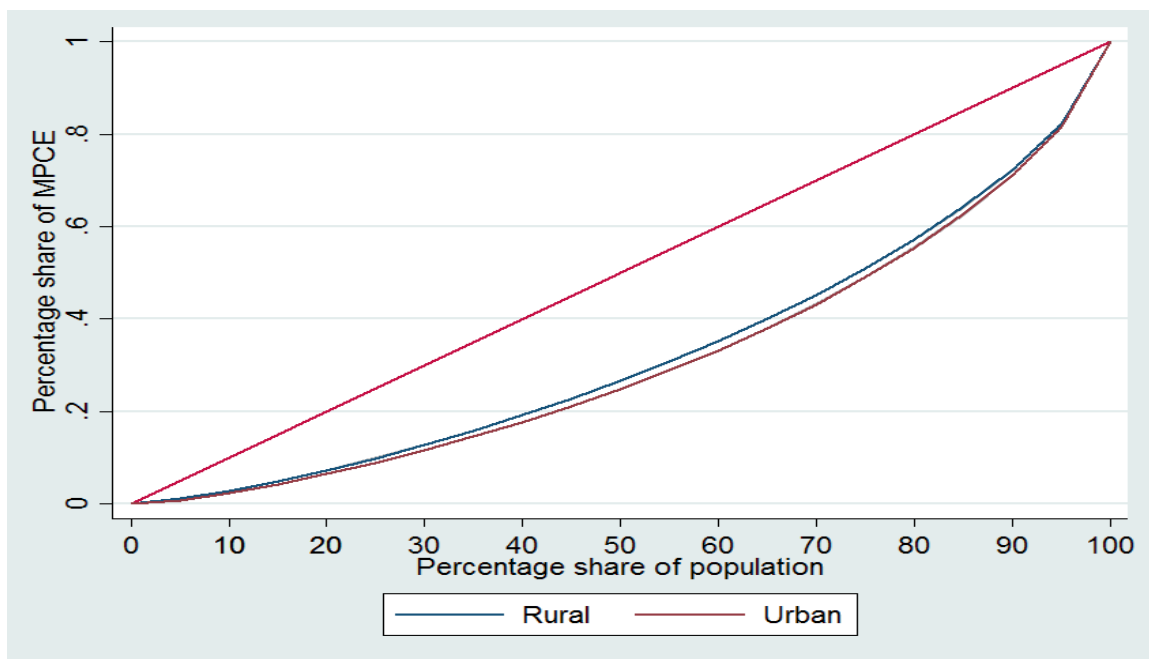


**Table 4.3 Monthly per capita out-of-pocket (OOP) expenditure for inpatient and out-patient care in (₹) by place of residence according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Rural                                   |                                          |                                                              | Urban                                   |                                          |                                                              | Total                                   |                                          |                                                              |
|---------------------------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------------------|
|                                       | In-patient health expenditure (30 days) | Out-patient health expenditure (30 days) | Total health expenditure (Inpatient & Out-patient) (30 days) | In-patient health expenditure (30 days) | Out-patient health expenditure (30 days) | Total health expenditure (Inpatient & Out-patient) (30 days) | In-patient health expenditure (30 days) | Out-patient health expenditure (30 days) | Total health expenditure (Inpatient & Out-patient) (30 days) |
| <b>MPCE quintile</b>                  |                                         |                                          |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Poorest                               | 12                                      | 67                                       | 79                                                           | 19                                      | 70                                       | 89                                                           | 14                                      | 68                                       | 82                                                           |
| Poorer                                | 26                                      | 134                                      | 160                                                          | 34                                      | 165                                      | 199                                                          | 28                                      | 142                                      | 171                                                          |
| Middle                                | 55                                      | 214                                      | 269                                                          | 64                                      | 217                                      | 281                                                          | 57                                      | 215                                      | 272                                                          |
| Richer                                | 96                                      | 364                                      | 460                                                          | 132                                     | 363                                      | 495                                                          | 106                                     | 363                                      | 470                                                          |
| Richest                               | 336                                     | 951                                      | 1287                                                         | 532                                     | 897                                      | 1429                                                         | 407                                     | 931                                      | 1338                                                         |
| <b>Household size</b>                 |                                         |                                          |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| 1-2                                   | 133                                     | 482                                      | 615                                                          | 256                                     | 636                                      | 892                                                          | 168                                     | 527                                      | 695                                                          |
| 3-4                                   | 89                                      | 331                                      | 420                                                          | 138                                     | 384                                      | 523                                                          | 109                                     | 352                                      | 461                                                          |
| 5-6                                   | 81                                      | 282                                      | 364                                                          | 154                                     | 271                                      | 424                                                          | 105                                     | 279                                      | 383                                                          |
| 7 or more                             | 67                                      | 217                                      | 285                                                          | 83                                      | 200                                      | 283                                                          | 71                                      | 213                                      | 284                                                          |
| <b>Religion of head of household</b>  |                                         |                                          |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Hindu                                 | 83                                      | 270                                      | 353                                                          | 113                                     | 308                                      | 421                                                          | 91                                      | 281                                      | 372                                                          |
| Muslim                                | 64                                      | 338                                      | 402                                                          | 227                                     | 294                                      | 521                                                          | 135                                     | 319                                      | 454                                                          |
| Christian                             | 67                                      | 177                                      | 244                                                          | 137                                     | 362                                      | 499                                                          | 84                                      | 222                                      | 306                                                          |
| Other                                 | 94                                      | 401                                      | 495                                                          | 128                                     | 337                                      | 465                                                          | 104                                     | 382                                      | 486                                                          |
| <b>Caste of the head of household</b> |                                         |                                          |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Scheduled tribe                       | 39                                      | 150                                      | 189                                                          | 119                                     | 404                                      | 523                                                          | 49                                      | 180                                      | 229                                                          |
| Scheduled caste                       | 66                                      | 275                                      | 341                                                          | 90                                      | 245                                      | 335                                                          | 71                                      | 269                                      | 340                                                          |
| Other backward class                  | 89                                      | 274                                      | 363                                                          | 160                                     | 275                                      | 434                                                          | 112                                     | 274                                      | 386                                                          |
| None of the above                     | 100                                     | 362                                      | 462                                                          | 125                                     | 371                                      | 496                                                          | 110                                     | 365                                      | 475                                                          |
| <b>Household having</b>               |                                         |                                          |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| No member 60 +                        | 77                                      | 263                                      | 340                                                          | 115                                     | 263                                      | 378                                                          | 89                                      | 263                                      | 352                                                          |
| At least one member 60+               | 83                                      | 289                                      | 372                                                          | 149                                     | 333                                      | 483                                                          | 102                                     | 302                                      | 405                                                          |
| <b>Total</b>                          | <b>81</b>                               | <b>280</b>                               | <b>361</b>                                                   | <b>137</b>                              | <b>308</b>                               | <b>444</b>                                                   | <b>98</b>                               | <b>288</b>                               | <b>386</b>                                                   |

Table 4.3 presents the monthly per capita out-of-pocket (OOP) expenditure on inpatient and out-patient care by place of residence and background characteristics in India. Both inpatient and out-patient expenditures are standardised based on the 30-day reference period. The per capita out-patient expenditure is ₹ 288, compared with ₹ 98 for inpatient expenditure. On average, the per capita OOP expenditure in India is ₹ 386, although this figure is ₹ 361 in rural areas and ₹ 444 in urban areas. The per capita OOP expenditure decreases with the increase in household size. It is the highest among households belonging to other religions (₹ 486), followed by Muslim households (₹ 454). Among all caste groups, per capita OOP expenditure is the lowest among Scheduled tribe (₹ 229) households, followed by the Scheduled caste (₹ 340) and other backward class (₹ 386). It should be noted that health expenditure depends on household's ability to pay. The monthly per capita OOP expenditure of a household with at least one elderly person age 60 and above is at least ₹ 53 higher than that of a household with no elderly member.

**Table 4.4 Monthly per capita out-of-pocket expenditure for inpatient and out-patient care in (₹) by place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Rural                                                |                                                       |                                                              | Urban                                   |                                          |                                                              | Total                                   |                                          |                                                              |
|---------------------------|------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------------------|
|                           | In-patient health expenditure (30 days) <sup>2</sup> | Out-patient health expenditure (30 days) <sup>3</sup> | Total health expenditure (Inpatient & Out-patient) (30 days) | In-patient health expenditure (30 days) | Out-patient health expenditure (30 days) | Total health expenditure (Inpatient & Out-patient) (30 days) | In-patient health expenditure (30 days) | Out-patient health expenditure (30 days) | Total health expenditure (Inpatient & Out-patient) (30 days) |
| <b>India</b>              | <b>81</b>                                            | <b>280</b>                                            | <b>361</b>                                                   | <b>137</b>                              | <b>308</b>                               | <b>444</b>                                                   | <b>98</b>                               | <b>288</b>                               | <b>386</b>                                                   |
| <b>North</b>              |                                                      |                                                       |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Chandigarh                | -                                                    | -                                                     | -                                                            | -                                       | -                                        | -                                                            | 60                                      | 478                                      | 538                                                          |
| Delhi                     | -                                                    | -                                                     | -                                                            | -                                       | -                                        | -                                                            | 91                                      | 242                                      | 333                                                          |
| Haryana                   | 53                                                   | 220                                                   | 273                                                          | 95                                      | 273                                      | 369                                                          | 68                                      | 239                                      | 307                                                          |
| Himachal Pradesh          | 109                                                  | 434                                                   | 543                                                          | 101                                     | 586                                      | 687                                                          | 108                                     | 451                                      | 559                                                          |
| Jammu & Kashmir           | 183                                                  | 696                                                   | 880                                                          | 72                                      | 597                                      | 669                                                          | 152                                     | 669                                      | 820                                                          |
| Punjab                    | 114                                                  | 462                                                   | 576                                                          | 168                                     | 427                                      | 596                                                          | 126                                     | 455                                      | 580                                                          |
| Rajasthan                 | 86                                                   | 239                                                   | 326                                                          | 120                                     | 261                                      | 381                                                          | 95                                      | 245                                      | 341                                                          |
| Uttarakhand               | 46                                                   | 321                                                   | 367                                                          | 102                                     | 301                                      | 403                                                          | 64                                      | 315                                      | 379                                                          |
| <b>Central</b>            |                                                      |                                                       |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Chhattisgarh              | 22                                                   | 103                                                   | 126                                                          | 23                                      | 117                                      | 139                                                          | 22                                      | 106                                      | 129                                                          |
| Madhya Pradesh            | 79                                                   | 267                                                   | 347                                                          | 131                                     | 218                                      | 349                                                          | 95                                      | 252                                      | 347                                                          |
| Uttar Pradesh             | 70                                                   | 308                                                   | 378                                                          | 88                                      | 350                                      | 438                                                          | 73                                      | 317                                      | 390                                                          |
| <b>East</b>               |                                                      |                                                       |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Bihar                     | 56                                                   | 241                                                   | 297                                                          | 41                                      | 203                                      | 244                                                          | 54                                      | 237                                      | 292                                                          |
| Jharkhand                 | 55                                                   | 189                                                   | 243                                                          | 77                                      | 284                                      | 361                                                          | 60                                      | 212                                      | 272                                                          |
| Odisha                    | 43                                                   | 229                                                   | 271                                                          | 76                                      | 356                                      | 432                                                          | 49                                      | 254                                      | 303                                                          |
| West Bengal               | 59                                                   | 342                                                   | 401                                                          | 141                                     | 522                                      | 663                                                          | 87                                      | 404                                      | 491                                                          |
| <b>Northeast</b>          |                                                      |                                                       |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Arunachal Pradesh         | 119                                                  | 585                                                   | 704                                                          | 26                                      | 135                                      | 161                                                          | 102                                     | 504                                      | 605                                                          |
| Assam                     | 65                                                   | 266                                                   | 331                                                          | 59                                      | 254                                      | 314                                                          | 65                                      | 264                                      | 329                                                          |
| Manipur                   | 105                                                  | 362                                                   | 467                                                          | 127                                     | 622                                      | 749                                                          | 113                                     | 461                                      | 575                                                          |
| Meghalaya                 | 44                                                   | 146                                                   | 190                                                          | 203                                     | 394                                      | 597                                                          | 77                                      | 197                                      | 274                                                          |
| Mizoram                   | 58                                                   | 136                                                   | 194                                                          | 114                                     | 319                                      | 433                                                          | 87                                      | 231                                      | 318                                                          |
| Nagaland                  | 170                                                  | 134                                                   | 304                                                          | 70                                      | 312                                      | 381                                                          | 141                                     | 185                                      | 326                                                          |
| Tripura                   | 57                                                   | 264                                                   | 321                                                          | 107                                     | 563                                      | 670                                                          | 74                                      | 364                                      | 438                                                          |
| <b>West</b>               |                                                      |                                                       |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Dadra & Nagar Haveli      | 31                                                   | 57                                                    | 87                                                           | 79                                      | 176                                      | 255                                                          | 58                                      | 126                                      | 184                                                          |
| Daman & Diu               | 45                                                   | 132                                                   | 178                                                          | 71                                      | 106                                      | 177                                                          | 68                                      | 109                                      | 177                                                          |
| Goa                       | 64                                                   | 391                                                   | 455                                                          | 123                                     | 277                                      | 400                                                          | 100                                     | 322                                      | 422                                                          |
| Gujarat                   | 87                                                   | 166                                                   | 253                                                          | 124                                     | 206                                      | 330                                                          | 102                                     | 183                                      | 285                                                          |
| Maharashtra               | 113                                                  | 364                                                   | 477                                                          | 159                                     | 313                                      | 472                                                          | 134                                     | 341                                      | 475                                                          |
| <b>South</b>              |                                                      |                                                       |                                                              |                                         |                                          |                                                              |                                         |                                          |                                                              |
| Andaman & Nicobar Islands | 45                                                   | 96                                                    | 140                                                          | 88                                      | 504                                      | 592                                                          | 61                                      | 248                                      | 309                                                          |
| Andhra Pradesh            | 137                                                  | 319                                                   | 456                                                          | 97                                      | 416                                      | 514                                                          | 124                                     | 350                                      | 474                                                          |
| Karnataka                 | 108                                                  | 207                                                   | 315                                                          | 254                                     | 279                                      | 532                                                          | 152                                     | 229                                      | 381                                                          |
| Kerala                    | 169                                                  | 457                                                   | 626                                                          | 130                                     | 415                                      | 545                                                          | 150                                     | 436                                      | 586                                                          |
| Lakshadweep               | 151                                                  | 132                                                   | 283                                                          | 59                                      | 171                                      | 230                                                          | 70                                      | 167                                      | 236                                                          |
| Puducherry                | 58                                                   | 82                                                    | 140                                                          | 53                                      | 176                                      | 228                                                          | 54                                      | 147                                      | 201                                                          |
| Tamil Nadu                | 101                                                  | 154                                                   | 255                                                          | 93                                      | 204                                      | 297                                                          | 97                                      | 180                                      | 277                                                          |
| Telangana                 | 146                                                  | 362                                                   | 508                                                          | 104                                     | 344                                      | 448                                                          | 130                                     | 355                                      | 485                                                          |

Note

“-” Rural and urban is not applicable for Delhi and Chandigarh

<sup>2</sup> The expenditure on inpatient health care visits in the past 30 days includes expenses on hospitalization and nursing home stays, tests (X-ray, ECG, USG, CT scan, MRI, blood test, urine test, etc.), medicine, doctor's fees or any other medical expenses paid during hospitalization.

<sup>3</sup> The expenditure on out-patient health care in the past 30 days includes expenses on medication, tests (X-ray, ECG, USG, CT scan, MRI, blood test, urine test, etc.), doctor's fees or any other medical expenses (such as travel expenses, ambulance, dental care, etc.).

Table 4.4 presents the state differential in inpatient, out-patient, and total health expenditures by place of residence. The state-wise variation in OOP expenditure is large. Among all states/UTs, the OOP expenditure is the highest in Jammu & Kashmir (₹ 820), followed by Arunachal Pradesh (₹ 605), Kerala (₹ 586), and Punjab (₹ 580), and it is the lowest in Chhattisgarh (₹ 129), followed by Daman & Diu (₹ 177). In case of inpatient health expenditure, it is the highest in both Karnataka (₹ 152) and Jammu & Kashmir (₹ 152) and the lowest in Chhattisgarh (₹ 22). Similarly, the OOP expenditure for out-patient care is the highest in Jammu & Kashmir (₹ 669) and the lowest in Chhattisgarh (₹ 106). In general, the developed states show higher OOP expenditure compared with the less developed ones.

As seen in Figure 4.2, on average, a household in India spends 13% of the consumption expenditure on health, which varies from 5% in Daman & Diu to 19% in Jammu & Kashmir.

**Figure 4.2 Monthly per capita out-of-pocket expenditure as a share of monthly per capita consumption expenditure (MPCE), India, LASI Wave 1, 2017-18**

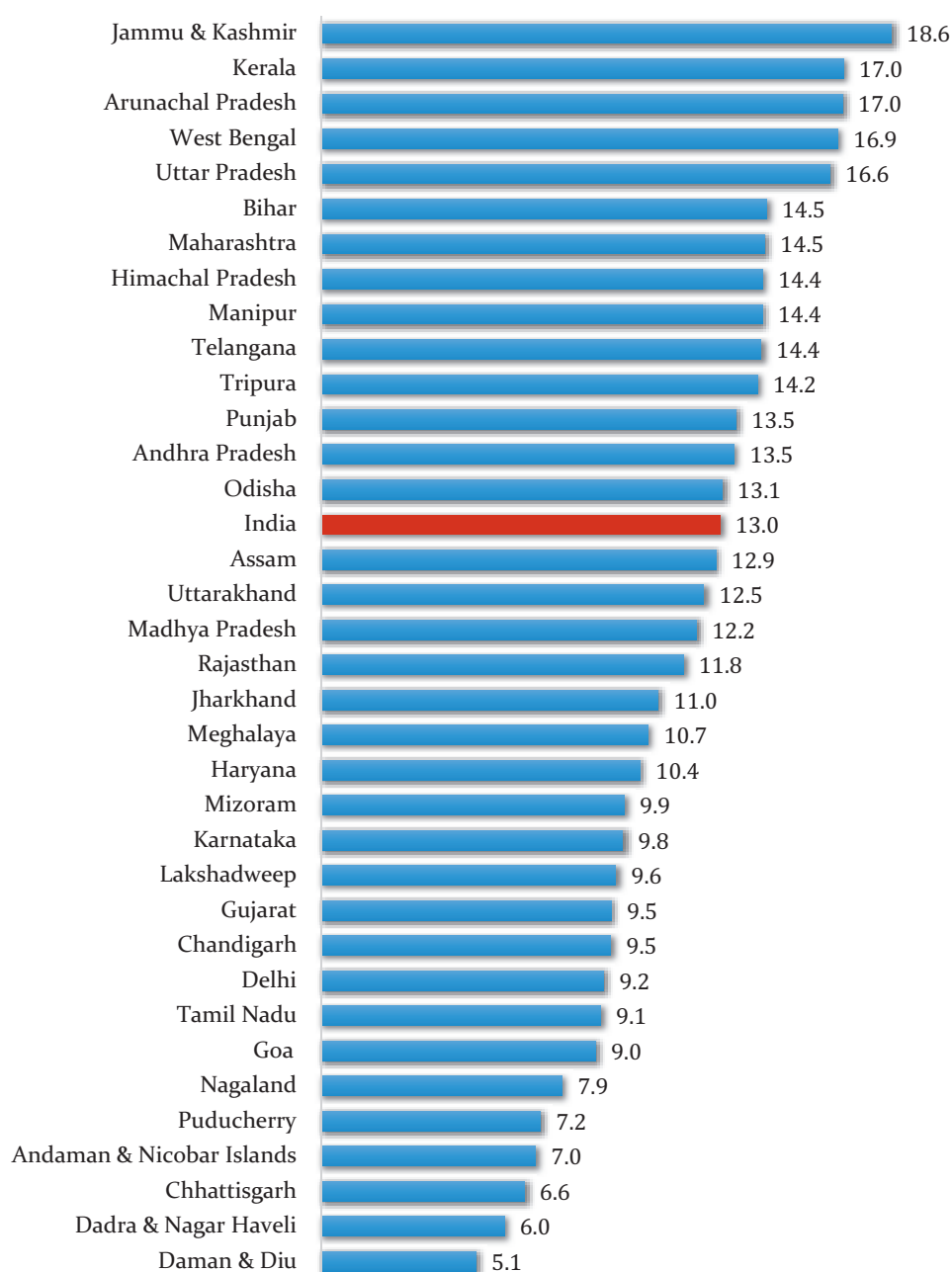




**Table 4.5 Percentage of households with any member hospitalized in the past 12 months and households incurring catastrophic health expenditure by place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Rural                                                         |                                                                       |               | Urban                                                         |                                                          |               | Total                                                         |                                                          |               |
|---------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------|---------------|---------------------------------------------------------------|----------------------------------------------------------|---------------|---------------------------------------------------------------|----------------------------------------------------------|---------------|
|                           | Households with any member hospitalised in past 12 months (%) | Households incurring catastrophic health expenditure (%) <sup>4</sup> | Number        | Households with any member hospitalised in past 12 months (%) | Households incurring catastrophic health expenditure (%) | Number        | Households with any member hospitalised in past 12 months (%) | Households incurring catastrophic health expenditure (%) | Number        |
| <b>India</b>              | <b>21.1</b>                                                   | <b>36.7</b>                                                           | <b>27,576</b> | <b>21.6</b>                                                   | <b>31.1</b>                                              | <b>15,373</b> | <b>21.2</b>                                                   | <b>34.9</b>                                              | <b>42,949</b> |
| <b>North</b>              |                                                               |                                                                       |               |                                                               |                                                          |               |                                                               |                                                          |               |
| Chandigarh                | -                                                             | -                                                                     | -             | -                                                             | -                                                        | -             | 16.1                                                          | 28.1                                                     | 651           |
| Delhi                     | -                                                             | -                                                                     | -             | -                                                             | -                                                        | -             | 16.2                                                          | 22.5                                                     | 754           |
| Haryana                   | 18.2                                                          | 31.5                                                                  | 833           | 16.0                                                          | 29.2                                                     | 418           | 17.4                                                          | 30.6                                                     | 1,251         |
| Himachal Pradesh          | 30.1                                                          | 42.5                                                                  | 700           | 24.8                                                          | 38.2                                                     | 105           | 29.5                                                          | 42.0                                                     | 805           |
| Jammu & Kashmir           | 20.3                                                          | 54.5                                                                  | 694           | 12.3                                                          | 42.5                                                     | 263           | 17.7                                                          | 50.7                                                     | 957           |
| Punjab                    | 18.7                                                          | 43.9                                                                  | 871           | 16.0                                                          | 36.3                                                     | 363           | 18.0                                                          | 42.1                                                     | 1,234         |
| Rajasthan                 | 24.6                                                          | 36.4                                                                  | 1,025         | 24.5                                                          | 37.9                                                     | 277           | 24.6                                                          | 36.8                                                     | 1,302         |
| Uttarakhand               | 15.6                                                          | 31.6                                                                  | 618           | 18.0                                                          | 29.8                                                     | 245           | 16.3                                                          | 31.1                                                     | 863           |
| <b>Central</b>            |                                                               |                                                                       |               |                                                               |                                                          |               |                                                               |                                                          |               |
| Chhattisgarh              | 12.8                                                          | 19.0                                                                  | 971           | 10.4                                                          | 13.8                                                     | 218           | 12.2                                                          | 17.8                                                     | 1,189         |
| Madhya Pradesh            | 22.9                                                          | 34.2                                                                  | 1,192         | 22.5                                                          | 25.6                                                     | 498           | 22.8                                                          | 31.6                                                     | 1,690         |
| Uttar Pradesh             | 18.0                                                          | 43.3                                                                  | 2,155         | 16.4                                                          | 30.7                                                     | 592           | 17.7                                                          | 40.5                                                     | 2,747         |
| <b>East</b>               |                                                               |                                                                       |               |                                                               |                                                          |               |                                                               |                                                          |               |
| Bihar                     | 13.5                                                          | 40.7                                                                  | 1,866         | 10.0                                                          | 27.1                                                     | 217           | 13.1                                                          | 39.1                                                     | 2,083         |
| Jharkhand                 | 15.2                                                          | 28.8                                                                  | 1,123         | 15.8                                                          | 33.4                                                     | 285           | 15.3                                                          | 30.0                                                     | 1,408         |
| Odisha                    | 16.5                                                          | 32.0                                                                  | 1,391         | 22.6                                                          | 36.4                                                     | 254           | 17.5                                                          | 32.7                                                     | 1,645         |
| West Bengal               | 21.6                                                          | 42.9                                                                  | 1,148         | 21.4                                                          | 45.7                                                     | 1,131         | 21.5                                                          | 43.9                                                     | 2,279         |
| <b>Northeast</b>          |                                                               |                                                                       |               |                                                               |                                                          |               |                                                               |                                                          |               |
| Arunachal Pradesh         | 34.9                                                          | 32.0                                                                  | 534           | 19.3                                                          | 9.3                                                      | 168           | 31.6                                                          | 27.3                                                     | 702           |
| Assam                     | 15.3                                                          | 31.7                                                                  | 1,322         | 16.0                                                          | 27.7                                                     | 189           | 15.4                                                          | 31.0                                                     | 1,511         |
| Manipur                   | 28.9                                                          | 34.4                                                                  | 574           | 23.7                                                          | 48.2                                                     | 286           | 26.9                                                          | 39.6                                                     | 860           |
| Meghalaya                 | 20.1                                                          | 21.0                                                                  | 524           | 30.0                                                          | 29.9                                                     | 112           | 22.3                                                          | 23.0                                                     | 636           |
| Mizoram                   | 19.8                                                          | 21.3                                                                  | 360           | 20.1                                                          | 20.9                                                     | 372           | 20.0                                                          | 21.1                                                     | 732           |
| Nagaland                  | 16.9                                                          | 15.4                                                                  | 569           | 9.7                                                           | 15.2                                                     | 230           | 14.9                                                          | 15.4                                                     | 799           |
| Tripura                   | 26.7                                                          | 25.8                                                                  | 555           | 23.6                                                          | 44.5                                                     | 166           | 25.7                                                          | 31.8                                                     | 721           |
| <b>West</b>               |                                                               |                                                                       |               |                                                               |                                                          |               |                                                               |                                                          |               |
| Dadra & Nagar Haveli      | 24.3                                                          | 13.2                                                                  | 391           | 25.3                                                          | 19.2                                                     | 240           | 24.9                                                          | 17.0                                                     | 631           |
| Daman & Diu               | 27.3                                                          | 18.4                                                                  | 210           | 22.2                                                          | 13.7                                                     | 367           | 22.7                                                          | 14.3                                                     | 577           |
| Goa                       | 28.4                                                          | 37.1                                                                  | 365           | 15.8                                                          | 24.4                                                     | 512           | 20.5                                                          | 29.1                                                     | 877           |
| Gujarat                   | 23.9                                                          | 20.7                                                                  | 857           | 21.2                                                          | 22.0                                                     | 598           | 22.7                                                          | 21.3                                                     | 1,455         |
| Maharashtra               | 30.6                                                          | 50.7                                                                  | 1,159         | 27.9                                                          | 31.8                                                     | 1,262         | 29.3                                                          | 42.0                                                     | 2,421         |
| <b>South</b>              |                                                               |                                                                       |               |                                                               |                                                          |               |                                                               |                                                          |               |
| Andaman & Nicobar Islands | 11.3                                                          | 5.2                                                                   | 451           | 8.5                                                           | 9.4                                                      | 274           | 10.2                                                          | 6.9                                                      | 725           |
| Andhra Pradesh            | 28.3                                                          | 33.7                                                                  | 1,107         | 26.5                                                          | 30.2                                                     | 404           | 27.7                                                          | 32.6                                                     | 1,511         |
| Karnataka                 | 26.1                                                          | 29.2                                                                  | 1,012         | 26.2                                                          | 32.7                                                     | 476           | 26.1                                                          | 30.4                                                     | 1,488         |
| Kerala                    | 26.5                                                          | 45.5                                                                  | 709           | 24.6                                                          | 41.0                                                     | 702           | 25.6                                                          | 43.3                                                     | 1,411         |
| Lakshadweep               | 19.6                                                          | 20.0                                                                  | 132           | 11.3                                                          | 14.3                                                     | 495           | 12.3                                                          | 15.0                                                     | 627           |
| Puducherry                | 13.2                                                          | 15.2                                                                  | 269           | 14.2                                                          | 17.1                                                     | 570           | 13.9                                                          | 16.5                                                     | 839           |
| Tamil Nadu                | 17.0                                                          | 22.7                                                                  | 891           | 13.2                                                          | 22.2                                                     | 1,259         | 15.1                                                          | 22.5                                                     | 2,150         |
| Telangana                 | 31.1                                                          | 38.4                                                                  | 972           | 27.1                                                          | 29.1                                                     | 446           | 29.7                                                          | 35.1                                                     | 1,418         |

Note

“-” Rural and urban is not applicable for Delhi and Chandigarh

<sup>4</sup> Catastrophic health expenditure is defined as household health spending exceeding 10% of household consumption expenditure.

**Figure 4.3 Percentage of households with any member hospitalized in the past 12 months, states/UTs, LASI Wave 1, 2017-18**

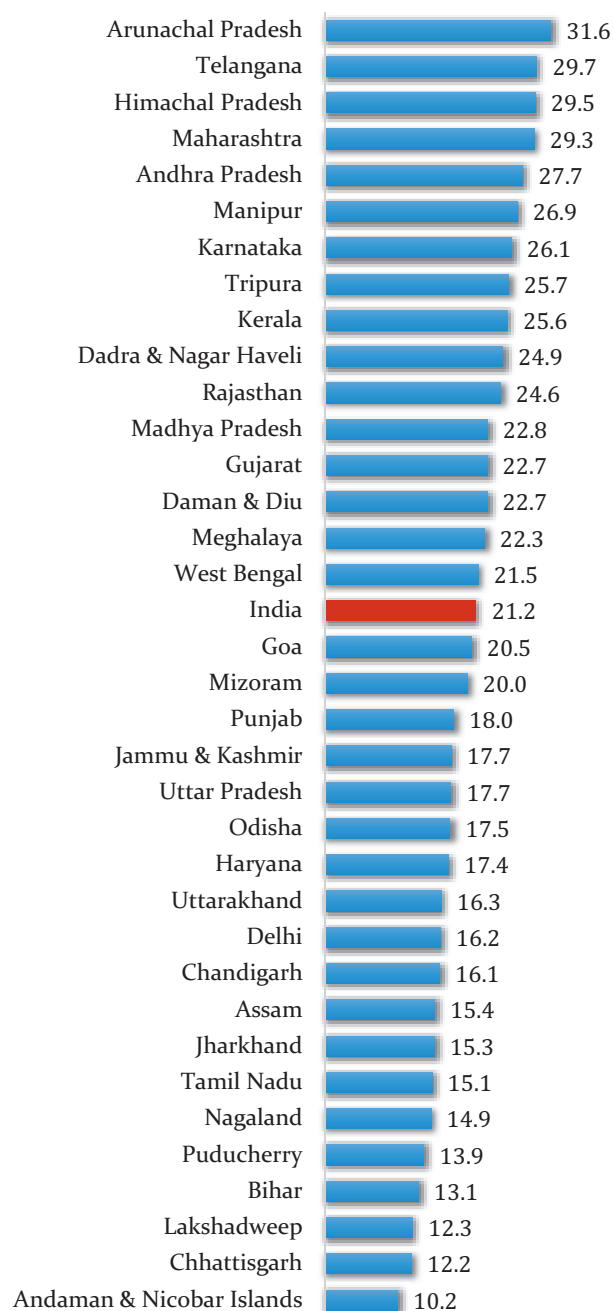


**Figure 4.4 Percentage of households incurring catastrophic health expenditure, states/UTs, LASI Wave 1, 2017-18**

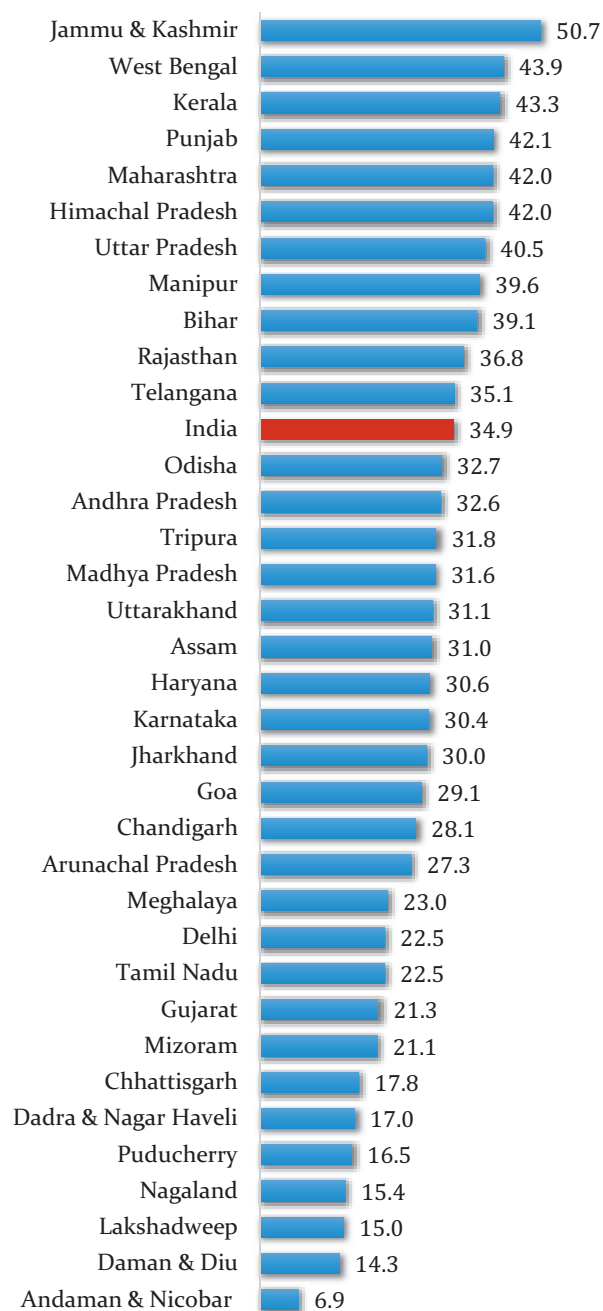


Table 4.5 presents the percentage of households in which at least one member is hospitalised within a reference period of 365 days. In 21% of the households, at least one member is hospitalised during the reference period. This figure varies from 10% in the UTs of Andaman & Nicobar Islands to 32% in the state of Arunachal Pradesh. The states of Kerala, Maharashtra, Uttar Pradesh, and Punjab have health expenditure exceeding 10% of the MPCE. If the share of health expenditure exceeds 10%, this is generally considered catastrophic health spending. About 35% of households in India incur catastrophic health spending (CHS). The proportion of households with CHS is the highest in Jammu & Kashmir (51%), followed by West Bengal (44%), and it is the lowest in Andaman & Nicobar Islands (7%), followed by Daman & Diu (14%).

**Figure 4.5 Healthcare expenditure by type of health care services and place of residence, India, LASI Wave 1, 2017-18**

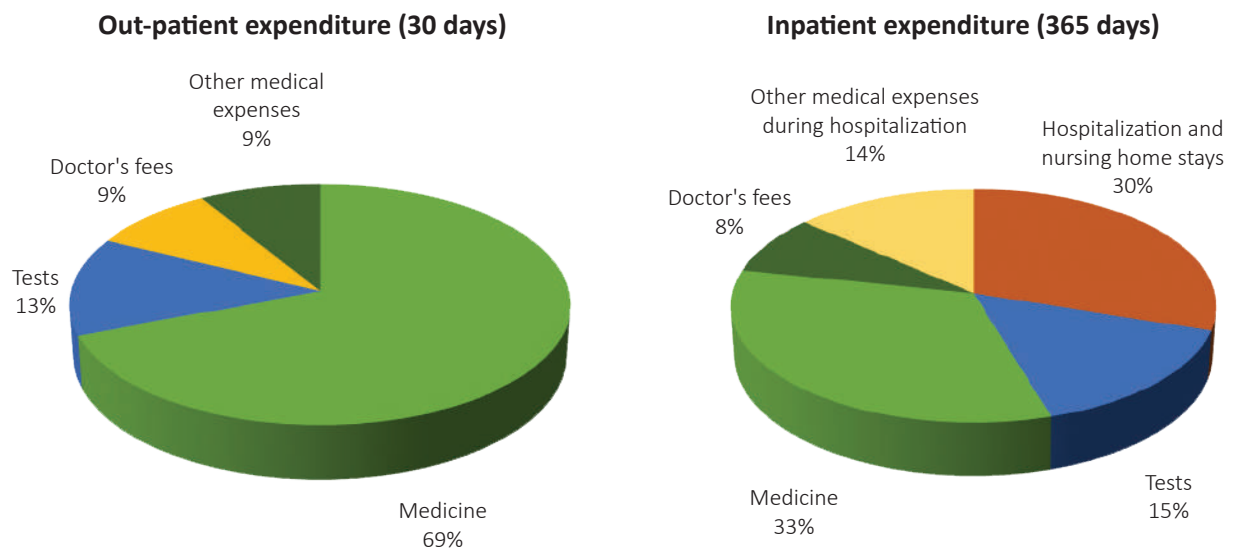


**Table 4.6 Percent distribution of monthly healthcare expenditure by type of health care services, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | In the past 30 days, out-patient expenditure on |             |               |                        |                                        | In the past 365 days, inpatient expenditure on |             |               |                                               |
|---------------------------|-------------------------------------------------|-------------|---------------|------------------------|----------------------------------------|------------------------------------------------|-------------|---------------|-----------------------------------------------|
|                           | Tests                                           | Medicines   | Doctor's fees | Other medical expenses | Hospitalization and nursing home stays | Tests                                          | Medicines   | Doctor's fees | Other medical expenses during hospitalization |
| <b>India</b>              | <b>13.3</b>                                     | <b>69.0</b> | <b>8.9</b>    | <b>8.8</b>             | <b>30.1</b>                            | <b>15.3</b>                                    | <b>32.9</b> | <b>8.2</b>    | <b>13.5</b>                                   |
| <b>North</b>              |                                                 |             |               |                        |                                        |                                                |             |               |                                               |
| Chandigarh                | 12.8                                            | 77.2        | 5.1           | 4.9                    | 15.4                                   | 11.5                                           | 48.5        | 8.1           | 16.4                                          |
| Delhi                     | 12.0                                            | 79.2        | 6.0           | 2.8                    | 55.7                                   | 16.1                                           | 15.0        | 4.5           | 8.7                                           |
| Haryana                   | 10.0                                            | 79.4        | 5.5           | 5.1                    | 49.6                                   | 14.1                                           | 26.3        | 5.0           | 5.0                                           |
| Himachal Pradesh          | 17.1                                            | 69.3        | 2.1           | 11.5                   | 18.1                                   | 14.0                                           | 36.7        | 9.4           | 22.0                                          |
| Jammu & Kashmir           | 15.9                                            | 70.8        | 5.0           | 8.4                    | 3.7                                    | 7.1                                            | 14.8        | 1.1           | 73.4                                          |
| Punjab                    | 14.0                                            | 75.4        | 4.8           | 5.7                    | 29.0                                   | 12.1                                           | 45.7        | 4.8           | 8.4                                           |
| Rajasthan                 | 10.1                                            | 72.4        | 8.8           | 8.7                    | 18.4                                   | 26.3                                           | 31.5        | 5.8           | 18.0                                          |
| Uttarakhand               | 13.9                                            | 72.2        | 7.1           | 6.8                    | 31.3                                   | 24.0                                           | 30.7        | 7.0           | 6.9                                           |
| <b>Central</b>            |                                                 |             |               |                        |                                        |                                                |             |               |                                               |
| Chhattisgarh              | 6.2                                             | 80.1        | 8.0           | 5.7                    | 57.7                                   | 8.6                                            | 21.4        | 3.3           | 8.9                                           |
| Madhya Pradesh            | 9.8                                             | 71.0        | 8.3           | 10.9                   | 31.2                                   | 9.4                                            | 31.4        | 4.9           | 23.1                                          |
| Uttar Pradesh             | 8.8                                             | 78.0        | 6.6           | 6.7                    | 28.6                                   | 10.0                                           | 45.3        | 7.8           | 8.3                                           |
| <b>East</b>               |                                                 |             |               |                        |                                        |                                                |             |               |                                               |
| Bihar                     | 10.7                                            | 75.5        | 7.9           | 5.9                    | 27.8                                   | 13.8                                           | 43.7        | 6.2           | 8.5                                           |
| Jharkhand                 | 7.4                                             | 79.5        | 7.7           | 5.4                    | 46.3                                   | 13.0                                           | 33.0        | 3.6           | 4.1                                           |
| Odisha                    | 9.5                                             | 72.6        | 6.1           | 11.8                   | 19.4                                   | 13.6                                           | 44.0        | 10.1          | 12.9                                          |
| West Bengal               | 14.3                                            | 68.9        | 9.9           | 7.0                    | 19.6                                   | 17.3                                           | 38.8        | 6.3           | 17.9                                          |
| <b>Northeast</b>          |                                                 |             |               |                        |                                        |                                                |             |               |                                               |
| Arunachal Pradesh         | 9.2                                             | 75.6        | 3.6           | 11.6                   | 19.1                                   | 15.3                                           | 46.1        | 4.2           | 15.3                                          |
| Assam                     | 17.7                                            | 64.4        | 6.3           | 11.7                   | 26.1                                   | 22.9                                           | 33.1        | 7.2           | 10.7                                          |
| Manipur                   | 20.2                                            | 61.0        | 7.1           | 11.7                   | 18.0                                   | 25.1                                           | 35.5        | 7.4           | 14.0                                          |
| Meghalaya                 | 13.4                                            | 71.3        | 6.1           | 9.2                    | 53.4                                   | 14.5                                           | 20.7        | 3.4           | 8.0                                           |
| Mizoram                   | 9.0                                             | 58.6        | 2.8           | 29.6                   | 39.4                                   | 14.5                                           | 25.8        | 2.3           | 18.0                                          |
| Nagaland                  | 12.0                                            | 58.4        | 5.7           | 23.9                   | 36.2                                   | 19.6                                           | 26.6        | 4.8           | 12.8                                          |
| Tripura                   | 19.1                                            | 68.4        | 5.2           | 7.3                    | 15.7                                   | 25.8                                           | 33.5        | 12.0          | 13.1                                          |
| <b>West</b>               |                                                 |             |               |                        |                                        |                                                |             |               |                                               |
| Dadra & Nagar Haveli      | 7.7                                             | 77.7        | 9.4           | 5.2                    | 17.1                                   | 30.1                                           | 40.3        | 3.1           | 9.4                                           |
| Daman & Diu               | 10.1                                            | 60.8        | 20.6          | 8.5                    | 27.9                                   | 17.8                                           | 32.2        | 11.9          | 10.2                                          |
| Goa                       | 9.1                                             | 67.5        | 14.1          | 9.4                    | 26.1                                   | 15.0                                           | 28.5        | 16.6          | 13.8                                          |
| Gujarat                   | 14.2                                            | 74.1        | 7.1           | 4.6                    | 36.4                                   | 19.7                                           | 33.4        | 8.2           | 2.4                                           |
| Maharashtra               | 12.3                                            | 64.9        | 12.8          | 10.0                   | 29.4                                   | 17.2                                           | 32.0        | 12.7          | 8.7                                           |
| <b>South</b>              |                                                 |             |               |                        |                                        |                                                |             |               |                                               |
| Andaman & Nicobar Islands | 18.6                                            | 56.6        | 5.3           | 19.4                   | 22.2                                   | 30.7                                           | 10.2        | 26.4          | 10.5                                          |
| Andhra Pradesh            | 18.5                                            | 59.0        | 11.4          | 11.2                   | 32.4                                   | 16.4                                           | 33.4        | 5.9           | 11.9                                          |
| Karnataka                 | 18.4                                            | 47.2        | 14.2          | 20.3                   | 32.5                                   | 12.6                                           | 15.1        | 8.6           | 31.2                                          |
| Kerala                    | 17.5                                            | 64.3        | 7.8           | 10.3                   | 41.1                                   | 18.5                                           | 24.4        | 3.8           | 12.3                                          |
| Lakshadweep               | 7.9                                             | 61.7        | 3.5           | 26.9                   | 35.9                                   | 14.7                                           | 24.4        | 3.8           | 21.3                                          |
| Puducherry                | 17.4                                            | 60.7        | 12.3          | 9.6                    | 23.4                                   | 22.0                                           | 22.8        | 15.1          | 16.7                                          |
| Tamil Nadu                | 16.2                                            | 55.7        | 15.4          | 12.7                   | 27.5                                   | 19.8                                           | 24.8        | 14.3          | 13.6                                          |
| Telangana                 | 25.5                                            | 56.3        | 9.3           | 8.9                    | 48.0                                   | 14.6                                           | 21.9        | 4.6           | 10.9                                          |

Table 4.6 presents the percent distribution of health care expenditure, such as expenditure on medicine, tests, doctors' fees, and other expenses in India. It is computed for those who report expenditure on each of these components. With respect to out-patient care, medicine accounts for over two-thirds (69%) of the total expenditure, followed by tests (13%) and doctors' fees (9%). For inpatient care, the largest share of expenditure is for medicine (33%), followed by costs for hospitalisation and nursing home stays (30%) and doctors' fees (8%). The state pattern of out-patient expenditure suggests that about 80% of expenditure is on medicine in Jharkhand and Chhattisgarh. In the case of inpatient care, the share of hospitalisation in total inpatient health expenditure is the highest in Chhattisgarh (58%), followed by Delhi (56%), and it is the lowest in Jammu & Kashmir (4%). The share of tests on inpatient expenditure also varies from 7% in Jammu & Kashmir to 31% in Andaman & Nicobar Islands.

**Table 4.7 Percentage of households having ration card by type of card and use, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Households having ration card (%) | Households having BPL Card (%) | Households using BPL card <sup>5</sup> (%) | Households using relative/friend's ration card (%) | Number        |
|---------------------------|-----------------------------------|--------------------------------|--------------------------------------------|----------------------------------------------------|---------------|
| <b>India</b>              | <b>84.5</b>                       | <b>44.7</b>                    | <b>65.2</b>                                | <b>0.4</b>                                         | <b>42,949</b> |
| <b>North</b>              |                                   |                                |                                            |                                                    |               |
| Chandigarh                | 52.5                              | 10.6                           | 0.0                                        | 0.5                                                | 651           |
| Delhi                     | 67.6                              | 29.0                           | 44.6                                       | 0.2                                                | 754           |
| Haryana                   | 92.7                              | 30.9                           | 34.9                                       | 0.0                                                | 1,251         |
| Himachal Pradesh          | 95.1                              | 26.8                           | 88.3                                       | 0.7                                                | 805           |
| Jammu & Kashmir           | 98.3                              | 46.7                           | 74.0                                       | 0.6                                                | 957           |
| Punjab                    | 80.0                              | 8.5                            | 17.5                                       | 0.1                                                | 1,234         |
| Rajasthan                 | 94.8                              | 25.2                           | 48.7                                       | 0.9                                                | 1,302         |
| Uttarakhand               | 90.2                              | 41.7                           | 59.6                                       | 0.6                                                | 863           |
| <b>Central</b>            |                                   |                                |                                            |                                                    |               |
| Chhattisgarh              | 83.6                              | 56.9                           | 76.7                                       | 2.1                                                | 1,189         |
| Madhya Pradesh            | 78.7                              | 46.3                           | 55.2                                       | 0.5                                                | 1,690         |
| Uttar Pradesh             | 73.6                              | 32.1                           | 52.7                                       | 0.1                                                | 2,747         |
| <b>East</b>               |                                   |                                |                                            |                                                    |               |
| Bihar                     | 83.8                              | 51.2                           | 70.9                                       | 0.4                                                | 2,083         |
| Jharkhand                 | 76.3                              | 48.0                           | 70.8                                       | 0.4                                                | 1,408         |
| Odisha                    | 79.6                              | 46.4                           | 77.4                                       | 0.2                                                | 1,645         |
| West Bengal               | 97.0                              | 56.5                           | 82.8                                       | 0.6                                                | 2,279         |
| <b>Northeast</b>          |                                   |                                |                                            |                                                    |               |
| Arunachal Pradesh         | 79.6                              | 56.0                           | 50.7                                       | 3.5                                                | 702           |
| Assam                     | 75.7                              | 54.6                           | 74.4                                       | 0.1                                                | 1,511         |
| Manipur                   | 74.0                              | 30.7                           | 67.7                                       | 0.7                                                | 860           |
| Meghalaya                 | 79.8                              | 67.0                           | 68.7                                       | 0.3                                                | 636           |
| Mizoram                   | 95.8                              | 31.9                           | 86.0                                       | 4.3                                                | 732           |
| Nagaland                  | 66.7                              | 62.1                           | 45.9                                       | 1.2                                                | 799           |
| Tripura                   | 97.8                              | 46.6                           | 95.3                                       | 0.9                                                | 721           |
| <b>West</b>               |                                   |                                |                                            |                                                    |               |
| Dadra & Nagar Haveli      | 77.8                              | 31.6                           | 44.0                                       | 0.0                                                | 631           |
| Daman & Diu               | 77.2                              | 32.9                           | 45.0                                       | 0.5                                                | 577           |
| Goa                       | 91.3                              | 33.3                           | 72.9                                       | 0.5                                                | 877           |
| Gujarat                   | 93.6                              | 34.9                           | 56.5                                       | 0.5                                                | 1,455         |
| Maharashtra               | 91.1                              | 38.1                           | 61.1                                       | 0.5                                                | 2,421         |
| <b>South</b>              |                                   |                                |                                            |                                                    |               |
| Andaman & Nicobar Islands | 96.3                              | 20.0                           | 77.5                                       | 2.1                                                | 725           |
| Andhra Pradesh            | 92.8                              | 86.0                           | 88.5                                       | 0.2                                                | 1,511         |
| Karnataka                 | 73.7                              | 60.7                           | 62.5                                       | 0.3                                                | 1,488         |
| Kerala                    | 95.4                              | 40.8                           | 71.4                                       | 1.2                                                | 1,411         |
| Lakshadweep               | 97.2                              | 28.0                           | 83.2                                       | 1.6                                                | 627           |
| Puducherry                | 97.9                              | 61.3                           | 46.1                                       | 0.2                                                | 839           |
| Tamil Nadu                | 92.6                              | 34.5                           | 87.4                                       | 0.5                                                | 2,150         |
| Telangana                 | 85.7                              | 79.1                           | 80.0                                       | 0.9                                                | 1,418         |

Note

<sup>5</sup> Among those who had BPL Card.

Households having a Below Poverty Line (BPL) card in India are entitled to various welfare benefits, including subsidised rations, free housing, and health insurance, and these benefits are provided by the central and state governments. In the LASI survey, questions related to the type of ration card and its use were asked to each age-eligible household. Table 4.7 presents the percentage of households holding a ration card by type of card. It also shows the use of BPL cards by states/UTs of India. About 85% of households reported having a ration card, while 45% of households have a BPL card. Among households holding a BPL card, 65% have used it in the last 30 days prior to the survey. The use of a ration card belonging to another household is low. The state-level variation in BPL card holders is large. About 86% of households in Andhra Pradesh have a BPL card, compared with only 9% in Punjab. The use of the BPL card in Punjab and Chandigarh is lowest, while it is the highest in Tripura.

#### Key findings: household consumption expenditure

- The MPCE among older adults in India is ₹2,967: ₹2,543 in rural areas and ₹3,544 in urban areas. The MPCE of households with an elderly member (₹3,001) is lower than that of households without an elderly member (₹2,948).
- The state variation in MPCE is large. MPCE is the highest in Chandigarh (₹5,691) and the lowest in Chhattisgarh (₹2,967).
- Non-food expenditure accounts for about half of the consumption expenditure, and health expenditure accounts for 13%.
- The per capita health spending of a household with an elderly member age 60 and above (₹405) is higher compared with a household without an elderly member (₹352).
- On an average, households in India spend 13% of the consumption expenditure on health, which varies from 5% in Daman & Diu to 19% in Jammu & Kashmir.
- The share of health expenditure is more than 15% of the consumption expenditure in the states/UTs of Uttar Pradesh (17%), West Bengal (17%), Arunachal Pradesh (17%), Kerala (17%), and Jammu & Kashmir (19%).
- About 35% of households in India spend more than 10% of their consumption expenditure on health care, and 25% of households spend more than 15% of their consumption expenditure on health care.
- The largest amount of health spending is on medicine (69% of total health spending).
- Forty-five percent of households have a BPL card, and among those, 65% have used it in the 30 days prior to the survey.



## 4.2 HOUSEHOLD INCOME

Financial security among the elderly is a matter of concern in most developing countries. This is especially true for India, which is experiencing a fast pace of demographic transition and rapid growth of the elderly population, both in absolute numbers and as a proportion of the total population. Financial security is an important determinant of the overall quality of life, especially in older ages. While financial capabilities and income decline with age, the need for health care and other necessities increases. Moreover, older individuals are often more susceptible to diseases and ill health due to their deteriorating physical and mental conditions. At the same time, the majority of elderly are not a part of the workforce in India and have very limited options for a continued source of income.

Per Capita Income (PCI) is the direct measure of households' economic well-being. Unlike wealth and consumption, income is a flow concept, as it is readily disposable and, therefore, a critical part of financial security for the economic well-being of elderly households. However, the income of an individual or household may fluctuate depending on the movement of the economy. Moreover, in India, collection of data on household income is challenging and tends to be grossly underreported among both the rich and poor.

Information on household income in LASI is useful for understanding the households' overall financial status and aggregate income. Information on sources of personal income and financial status allow a better understanding of the behaviour and patterns of retirement planning among the elderly, including their financial preparedness. Moreover, income data support a better understanding of poverty, inequality, labour market, taxation, and other fiscal policies, which is essential for policymakers. Furthermore, the information is useful to better capture India's idiosyncrasies and validate income, asset, and consumption models.

In LASI, information on household income was collected from nine major sources of income and from all members of the household. The guiding principles used in LASI for income measurement are as follows: salary, wage, pension, and transfer income are considered before tax, while agricultural and non-agricultural business income are considered as gross receipts minus input cost, including taxes. The nine main sources of income on which data were collected in the LASI are described below:

- Household income from agricultural and non-agricultural business:
  - Agricultural income
  - Income from farming assets, forestry, fishing, and livestock
  - Income from non-agricultural business activities, including self-employment
- Individual income:
  - Wage/salary income
  - Income from self-employment
  - Pension income
- Household income from transfer payments/others
  - Income from government transfer
  - Income from private transfer
  - Other household income

**Table 4.8 Per-capita income in (₹) by source according to household background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Agricultural and allied activities (in ₹) | Non-agricultural business or self-employed activities (in ₹) | Wages/salary (in ₹) | Pension (in ₹) | Government/public transfers(in ₹) | Annual Per capita income (in ₹) |
|---------------------------------------|-------------------------------------------|--------------------------------------------------------------|---------------------|----------------|-----------------------------------|---------------------------------|
| <b>Place of residence</b>             |                                           |                                                              |                     |                |                                   |                                 |
| Rural                                 | 12278                                     | 2565                                                         | 12466               | 2110           | 1795                              | 35893                           |
| Urban                                 | 1622                                      | 11201                                                        | 37723               | 7241           | 854                               | 65720                           |
| <b>Caste of the head of household</b> |                                           |                                                              |                     |                |                                   |                                 |
| Scheduled tribe                       | 10080                                     | 1531                                                         | 14142               | 2238           | 1687                              | 35833                           |
| Scheduled caste                       | 7175                                      | 2598                                                         | 16387               | 2436           | 1844                              | 35374                           |
| Other backward class                  | 9307                                      | 5642                                                         | 21721               | 3349           | 1493                              | 46316                           |
| None of the above                     | 9913                                      | 7753                                                         | 22387               | 5708           | 1259                              | 53309                           |
| <b>Religion of head of household</b>  |                                           |                                                              |                     |                |                                   |                                 |
| Hindu                                 | 9817                                      | 4885                                                         | 18945               | 4017           | 1647                              | 44624                           |
| Muslim                                | 4550                                      | 6486                                                         | 26186               | 1555           | 904                               | 45632                           |
| Christian                             | 6768                                      | 3173                                                         | 24869               | 4282           | 1081                              | 42206                           |
| Other                                 | 12865                                     | 8542                                                         | 19864               | 3892           | 1552                              | 52512                           |
| <b>Household size</b>                 |                                           |                                                              |                     |                |                                   |                                 |
| 1-2                                   | 15755                                     | 6784                                                         | 20663               | 11383          | 3731                              | 75812                           |
| 3-4                                   | 9447                                      | 7204                                                         | 29943               | 4430           | 2055                              | 60671                           |
| 5-6                                   | 8427                                      | 5041                                                         | 22000               | 3612           | 1298                              | 44666                           |
| 7 or more                             | 8150                                      | 3716                                                         | 12197               | 1721           | 965                               | 29717                           |
| <b>MPCE quintile</b>                  |                                           |                                                              |                     |                |                                   |                                 |
| Poorest                               | 5527                                      | 2306                                                         | 11159               | 1053           | 1231                              | 25825                           |
| Poorer                                | 7287                                      | 3761                                                         | 14522               | 1683           | 1573                              | 33050                           |
| Middle                                | 9077                                      | 4413                                                         | 17556               | 4378           | 1415                              | 41733                           |
| Richer                                | 11668                                     | 6671                                                         | 26920               | 4984           | 1754                              | 59043                           |
| Richest                               | 15062                                     | 11715                                                        | 40182               | 8842           | 1762                              | 85552                           |
| <b>Household having</b>               |                                           |                                                              |                     |                |                                   |                                 |
| No member 60+                         | 9156                                      | 6412                                                         | 24978               | 1517           | 1379                              | 49174                           |
| At least one member 60+               | 9189                                      | 4577                                                         | 17524               | 4903           | 1624                              | 42819                           |
| <b>Types of houses</b>                |                                           |                                                              |                     |                |                                   |                                 |
| Pucca                                 | 8802                                      | 7352                                                         | 26819               | 5725           | 1330                              | 55593                           |
| Semi-pucca                            | 9833                                      | 2735                                                         | 12582               | 1372           | 1809                              | 33315                           |
| Kaccha                                | 8593                                      | 1847                                                         | 9797                | 529            | 1635                              | 27798                           |
| <b>Total</b>                          | <b>9,063</b>                              | <b>5,155</b>                                                 | <b>20,065</b>       | <b>3,649</b>   | <b>1,513</b>                      | <b>44,901</b>                   |

\* PCI has been calculated by summing up the income of all households from all members and all sources and dividing by household population of LASI age-eligible households.

In this section, information on PCI and income by sources is presented. Per capita household income is computed by aggregating income from all sources and dividing by the number of household members. Income by sources is computed by aggregating income from each source for the respective households and dividing it by the respective number of household members. Table 4.8 presents the PCI in LASI age-eligible households by sources and household background characteristics. Annual PCI for LASI age-eligible households in India is ₹ 44,901. Annual PCI for households having at least one elderly member is ₹ 42,819, compared with those with no elderly members (₹ 49,174).

Annual PCI from agricultural and allied activities is higher in rural areas (₹ 12,278) compared with urban areas (₹ 1,622). By contrast, annual PCI from non-agricultural business activities (₹ 11,201) and wages/salary (₹ 37,723) is higher in urban areas. Annual PCI from non-agricultural business activities, wages/salary, and pension is the lowest among scheduled tribes, whereas annual PCI from agricultural and allied activities is the lowest among the scheduled castes. Annual PCI from agricultural and allied activities, non-agricultural business, wages/salary, pension, and government/public transfers decreases with the increase in household size. Annual PCI from pension is higher amongst households with at least one elderly member (₹ 4,903) compared with those with no elderly members (₹ 1,517). Across MPCE quintiles, annual PCI from agricultural and allied activities is the highest among households in the richest quintile (₹ 15,062) compared with the poorest quintile (₹ 5,527). A similar pattern is observed for all other sources of income. Annual PCI is comparatively lower among households headed by Christian (₹ 42,206), followed by Hindu (₹ 44,624) and Muslim (₹ 45,632).

**Table 4.9 Per-capita income by source of income, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Annual Per capita income | Agricultural and allied activities (in ₹) | Non-agricultural business or self-employed activities (in ₹) | Wages/salaries (in ₹) | Pension (in ₹) | Government/public transfers (in ₹) |
|---------------------------|--------------------------|-------------------------------------------|--------------------------------------------------------------|-----------------------|----------------|------------------------------------|
| <b>India</b>              | <b>44,901</b>            | <b>9,063</b>                              | <b>5,155</b>                                                 | <b>20,065</b>         | <b>3,649</b>   | <b>1,513</b>                       |
| <b>North</b>              |                          |                                           |                                                              |                       |                |                                    |
| Chandigarh                | 1,04,387                 | 2,307                                     | 11,276                                                       | 63,862                | 22,363         | 1,111                              |
| Delhi                     | 67,432                   | 299                                       | 16,290                                                       | 32,234                | 4,663          | 849                                |
| Haryana                   | 53,940                   | 15,703                                    | 5,245                                                        | 25,397                | 2,871          | 2,757                              |
| Himachal Pradesh          | 62,784                   | 18,445                                    | 4,083                                                        | 24,974                | 12,385         | 1,141                              |
| Jammu & Kashmir           | 40,484                   | 6,918                                     | 5,088                                                        | 20,831                | 5,758          | 488                                |
| Punjab                    | 50,373                   | 13,737                                    | 9,113                                                        | 19,195                | 3,305          | 1,106                              |
| Rajasthan                 | 49,322                   | 12,078                                    | 8,443                                                        | 20,069                | 4,299          | 1,841                              |
| Uttarakhand               | 52,899                   | 5,614                                     | 4,578                                                        | 24,060                | 12,443         | 862                                |
| <b>Central</b>            |                          |                                           |                                                              |                       |                |                                    |
| Chhattisgarh              | 43,685                   | 12,301                                    | 4,115                                                        | 15,044                | 2,742          | 1,413                              |
| Madhya Pradesh            | 41,258                   | 12,829                                    | 5,888                                                        | 15,314                | 2,726          | 2,077                              |
| Uttar Pradesh             | 28,331                   | 8,155                                     | 2,967                                                        | 11,380                | 2,933          | 627                                |
| <b>East</b>               |                          |                                           |                                                              |                       |                |                                    |
| Bihar                     | 26,628                   | 6,477                                     | 3,383                                                        | 11,422                | 2,137          | 698                                |
| Jharkhand                 | 34,452                   | 7,730                                     | 4,668                                                        | 15,419                | 3,397          | 1,679                              |
| Odisha                    | 38,697                   | 7,308                                     | 7,519                                                        | 14,021                | 3,970          | 2,137                              |
| West Bengal               | 48,588                   | 4,140                                     | 5,719                                                        | 20,086                | 4,197          | 2,099                              |
| <b>Northeast</b>          |                          |                                           |                                                              |                       |                |                                    |
| Arunachal Pradesh         | 46,493                   | 7,513                                     | 4,780                                                        | 24,024                | 5,051          | 1,090                              |
| Assam                     | 36,349                   | 4,272                                     | 4,233                                                        | 19,685                | 5,383          | 1,251                              |
| Manipur                   | 45,365                   | 5,369                                     | 10,127                                                       | 30,090                | 5,237          | 407                                |
| Meghalaya                 | 29,461                   | 3,753                                     | 4,839                                                        | 17,985                | 1,941          | 219                                |
| Mizoram                   | 50,481                   | 5,639                                     | 11,980                                                       | 24,345                | 7,173          | 499                                |
| Nagaland                  | 42,868                   | 6,128                                     | 1,969                                                        | 15,561                | 11,649         | 357                                |
| Tripura                   | 45,916                   | 4,103                                     | 5,303                                                        | 26,243                | 2,415          | 1,987                              |
| <b>West</b>               |                          |                                           |                                                              |                       |                |                                    |
| Dadra & Nagar Haveli      | 48,672                   | 4,506                                     | 8,202                                                        | 27,398                | 4,073          | 1,269                              |
| Daman & Diu               | 43,703                   | 4,411                                     | 7,132                                                        | 23,294                | 5,467          | 1,399                              |
| Goa                       | 62,018                   | 1,621                                     | 8,173                                                        | 32,391                | 6,617          | 1,600                              |
| Gujarat                   | 56,802                   | 8,053                                     | 5,906                                                        | 19,109                | 3,525          | 599                                |
| Maharashtra               | 52,508                   | 9,760                                     | 5,130                                                        | 26,451                | 4,392          | 1,813                              |
| <b>South</b>              |                          |                                           |                                                              |                       |                |                                    |
| Andaman & Nicobar Islands | 70,753                   | 4,764                                     | 16,660                                                       | 44,765                | 10,089         | 2,173                              |
| Andhra Pradesh            | 52,216                   | 13,373                                    | 6,502                                                        | 28,999                | 3,984          | 2,341                              |
| Karnataka                 | 54,498                   | 11,804                                    | 4,741                                                        | 25,933                | 2,546          | 2,130                              |
| Kerala                    | 57,731                   | 5,052                                     | 6,576                                                        | 26,972                | 8,493          | 2,113                              |
| Lakshadweep               | 44,432                   | 1,685                                     | 1,834                                                        | 25,741                | 9,376          | 383                                |
| Puducherry                | 58,173                   | 5,085                                     | 3,458                                                        | 35,236                | 7,821          | 4,285                              |
| Tamil Nadu                | 52,824                   | 8,198                                     | 6,248                                                        | 26,841                | 5,517          | 2,199                              |
| Telangana                 | 52,219                   | 15,236                                    | 4,211                                                        | 23,791                | 3,893          | 3,037                              |

\* PCI for the states/UTs has been calculated by summing up the income of all households from all sources and dividing by household population of LASI age-eligible households for the respective states/UTs.

Table 4.9 presents state-wise variations in annual PCI from different sources of income, such as agricultural and allied activities, non-agricultural business or self-employed activities, wages/salary, pension, and government/public transfers. Annual PCI is the highest in Chandigarh (₹ 1,04,387), followed by Andaman & Nicobar Islands (₹ 70,753), whereas it is lower than the national average of ₹ 44,901 in the states of Bihar (₹ 26,628), Uttar Pradesh (₹ 28,331), Meghalaya (₹ 29,461), and Jharkhand (₹ 34,452). Annual PCI is ₹ 20,065 from wages and salary, ₹ 9,063 from agricultural and allied activities, ₹ 5,155 from non-agricultural business, (₹ 3,649) from pension, and ₹ 1,513 from government transfers. Annual PCI from agricultural and allied activities is higher than the national average in the states of Himachal Pradesh (₹ 18,445), Punjab (₹ 13,737), Haryana (₹ 15,703), Telangana (₹ 15,236), and Andhra Pradesh (₹ 13,373). Annual PCI from non-agricultural business activities and wages/salary is higher in the states/UTs of Chandigarh, Andaman & Nicobar Islands, Goa, Delhi, Manipur, and Dadra & Nagar Haveli. Annual PCI from pension is higher in the states/UTs of Chandigarh (₹ 22,363), Uttarakhand (₹ 12,443), Himachal Pradesh (₹ 12,385), Nagaland (₹ 11,649), and Andaman & Nicobar Islands (₹ 10,089).

**Table 4.10 Percent distribution of households by single and multiple sources of income, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Single source | Multiple source | Number        | Households with income from single source only |                                                       |                |            |                   |
|---------------------------|---------------|-----------------|---------------|------------------------------------------------|-------------------------------------------------------|----------------|------------|-------------------|
|                           |               |                 |               | Agricultural and allied activities             | Non-agricultural business or self-employed activities | Wages/salaries | Pension    | Private transfers |
| <b>India</b>              | <b>65.1</b>   | <b>34.9</b>     | <b>36,702</b> | <b>19.0</b>                                    | <b>3.3</b>                                            | <b>70.1</b>    | <b>4.5</b> | <b>3.1</b>        |
| <b>North</b>              |               |                 |               |                                                |                                                       |                |            |                   |
| Chandigarh                | 76.6          | 23.4            | 550           | 0.4                                            | 2.1                                                   | 84.6           | 13.0       | 0.0               |
| Delhi                     | 77.6          | 22.5            | 580           | 0.0                                            | 13.2                                                  | 80.0           | 5.5        | 1.3               |
| Haryana                   | 75.5          | 24.5            | 1,117         | 19.5                                           | 2.4                                                   | 74.8           | 2.7        | 0.6               |
| Himachal Pradesh          | 38.2          | 61.8            | 713           | 48.1                                           | 2.7                                                   | 39.6           | 7.2        | 2.4               |
| Jammu & Kashmir           | 67.3          | 32.7            | 791           | 16.8                                           | 6.8                                                   | 66.9           | 8.2        | 1.4               |
| Punjab                    | 86.5          | 13.5            | 1,053         | 16.2                                           | 3.7                                                   | 75.0           | 4.5        | 0.7               |
| Rajasthan                 | 60.3          | 39.7            | 1,156         | 32.7                                           | 4.6                                                   | 56.5           | 2.9        | 3.4               |
| Uttarakhand               | 55.8          | 44.2            | 786           | 18.6                                           | 4.3                                                   | 60.6           | 11.8       | 4.8               |
| <b>Central</b>            |               |                 |               |                                                |                                                       |                |            |                   |
| Chhattisgarh              | 54.3          | 45.7            | 1,047         | 31.0                                           | 5.0                                                   | 60.1           | 2.4        | 1.6               |
| Madhya Pradesh            | 64.9          | 35.1            | 1,426         | 21.4                                           | 4.8                                                   | 69.4           | 3.3        | 1.2               |
| Uttar Pradesh             | 57.3          | 42.7            | 2,429         | 31.4                                           | 2.8                                                   | 57.9           | 3.5        | 4.4               |
| <b>East</b>               |               |                 |               |                                                |                                                       |                |            |                   |
| Bihar                     | 57.5          | 42.5            | 1,944         | 22.2                                           | 4.8                                                   | 62.7           | 2.3        | 8.1               |
| Jharkhand                 | 47.9          | 52.1            | 1,264         | 26.9                                           | 2.9                                                   | 63.5           | 3.2        | 3.5               |
| Odisha                    | 40.6          | 59.4            | 1,534         | 18.4                                           | 12.1                                                  | 54.4           | 4.1        | 11.0              |
| West Bengal               | 68.9          | 31.1            | 2,104         | 8.6                                            | 4.3                                                   | 79.7           | 5.2        | 2.1               |
| <b>Northeast</b>          |               |                 |               |                                                |                                                       |                |            |                   |
| Arunachal Pradesh         | 79.2          | 20.8            | 533           | 35.4                                           | 5.7                                                   | 55.8           | 1.8        | 1.4               |
| Assam                     | 61.2          | 38.8            | 1,376         | 14.6                                           | 2.9                                                   | 75.3           | 6.4        | 0.9               |
| Manipur                   | 64.4          | 35.6            | 774           | 8.2                                            | 2.1                                                   | 84.3           | 4.8        | 0.7               |
| Meghalaya                 | 63.2          | 36.8            | 482           | 15.5                                           | 3.3                                                   | 70.2           | 9.0        | 1.9               |
| Mizoram                   | 77.2          | 22.8            | 511           | 46.0                                           | 8.3                                                   | 40.9           | 2.5        | 2.3               |
| Nagaland                  | 76.4          | 23.6            | 542           | 45.1                                           | 0.9                                                   | 34.1           | 15.1       | 4.9               |
| Tripura                   | 73.3          | 26.7            | 625           | 2.9                                            | 1.2                                                   | 90.0           | 4.8        | 1.1               |
| <b>West</b>               |               |                 |               |                                                |                                                       |                |            |                   |
| Dadra & Nagar Haveli      | 58.9          | 41.1            | 549           | 17.1                                           | 2.1                                                   | 77.0           | 2.7        | 1.2               |
| Daman & Diu               | 80.4          | 19.6            | 471           | 3.9                                            | 3.5                                                   | 79.7           | 8.9        | 4.1               |
| Goa                       | 66.1          | 33.9            | 703           | 4.5                                            | 2.4                                                   | 68.4           | 23.1       | 1.6               |
| Gujarat                   | 64.0          | 36.0            | 1,290         | 22.0                                           | 2.8                                                   | 68.8           | 3.6        | 2.8               |
| Maharashtra               | 73.4          | 26.6            | 2,178         | 16.6                                           | 3.0                                                   | 74.3           | 4.5        | 1.6               |
| <b>South</b>              |               |                 |               |                                                |                                                       |                |            |                   |
| Andaman & Nicobar Islands | 74.9          | 25.1            | 548           | 15.0                                           | 2.4                                                   | 74.4           | 7.1        | 1.2               |
| Andhra Pradesh            | 73.2          | 26.9            | 1,214         | 10.0                                           | 1.2                                                   | 79.6           | 6.4        | 2.8               |
| Karnataka                 | 63.6          | 36.4            | 1,346         | 27.2                                           | 1.8                                                   | 65.0           | 3.1        | 2.8               |
| Kerala                    | 72.9          | 27.1            | 1,011         | 5.5                                            | 3.5                                                   | 66.6           | 21.1       | 3.4               |
| Lakshadweep               | 83.0          | 17.1            | 460           | 0.1                                            | 1.2                                                   | 64.5           | 30.6       | 3.6               |
| Puducherry                | 80.1          | 19.9            | 693           | 1.6                                            | 1.4                                                   | 81.7           | 13.1       | 2.2               |
| Tamil Nadu                | 83.7          | 16.4            | 1,814         | 5.1                                            | 1.1                                                   | 84.4           | 5.5        | 3.9               |
| Telangana                 | 63.4          | 36.6            | 1,088         | 22.2                                           | 1.8                                                   | 67.0           | 7.6        | 1.5               |

Table 4.10 shows the percentage of households reporting single and multiple sources of income. Sixty-five percent of the households in India reported that they have only a single source of income, whereas 35% of the households reported that they have more than one source of income. Among households with only one source of income, 70% have income from wages and salary, 19% from an agricultural source, 5% from pension, and 3% each from private transfers and a non-agricultural source. Among the states/UTs, Punjab (87%), Tamil Nadu (84%), and Lakshadweep (83%) have the higher percentage of households with a single source of income. Moreover, the states of Odisha (59%), Himachal Pradesh (62%), and Jharkhand (52%) have the higher percentage of households with multiple sources of income.

**Table 4.11 Percent distribution of households by perceived financial status according to household background characteristics, India, LASI Wave 1, 2017-18**

| Background Characteristics            | Well below average | Below average | About the average | Well off   | Very well off | Number        |
|---------------------------------------|--------------------|---------------|-------------------|------------|---------------|---------------|
| <b>Place of residence</b>             |                    |               |                   |            |               |               |
| Rural                                 | 8.9                | 34.1          | 47.3              | 8.7        | 1.1           | 27,196        |
| Urban                                 | 7.3                | 27.0          | 48.8              | 11.2       | 5.7           | 14,989        |
| <b>Caste of the head of household</b> |                    |               |                   |            |               |               |
| Scheduled tribe                       | 9.3                | 38.6          | 43.9              | 6.6        | 1.6           | 7,388         |
| Scheduled caste                       | 11.3               | 37.9          | 43.3              | 6.7        | 0.7           | 7,431         |
| Other backward class                  | 7.7                | 29.2          | 50.0              | 10.0       | 3.1           | 15,790        |
| None of the above                     | 7.0                | 29.3          | 48.8              | 11.7       | 3.3           | 11,576        |
| <b>Religion of head of household</b>  |                    |               |                   |            |               |               |
| Hindu                                 | 8.6                | 31.8          | 47.4              | 9.8        | 2.4           | 30,779        |
| Muslim                                | 7.6                | 32.0          | 48.4              | 8.4        | 3.6           | 5,122         |
| Christian                             | 7.0                | 31.9          | 54.1              | 5.7        | 1.3           | 4,275         |
| Other                                 | 8.3                | 32.1          | 49.7              | 8.6        | 1.3           | 2,009         |
| <b>Household size</b>                 |                    |               |                   |            |               |               |
| 1-2                                   | 14.5               | 36.6          | 40.2              | 7.3        | 1.4           | 8,043         |
| 3-4                                   | 8.5                | 31.9          | 47.5              | 9.3        | 2.9           | 12,521        |
| 5-6                                   | 6.3                | 30.3          | 50.3              | 9.8        | 3.3           | 13,252        |
| 7 or more                             | 5.3                | 29.5          | 51.9              | 11.4       | 1.9           | 8,369         |
| <b>MPCE quintile</b>                  |                    |               |                   |            |               |               |
| Poorest                               | 11.2               | 38.2          | 44.6              | 5.6        | 0.5           | 8,430         |
| Poorer                                | 8.6                | 34.5          | 48.2              | 7.9        | 0.8           | 8,449         |
| Middle                                | 7.6                | 32.0          | 48.7              | 9.4        | 2.4           | 8,439         |
| Richer                                | 6.4                | 30.6          | 48.1              | 11.7       | 3.2           | 8,434         |
| Richest                               | 7.9                | 22.9          | 49.6              | 13.5       | 6.1           | 8,433         |
| <b>Household having</b>               |                    |               |                   |            |               |               |
| No member 60+                         | 7.2                | 33.4          | 49.8              | 8.5        | 1.0           | 17,379        |
| At least one member 60+               | 9.1                | 31.0          | 46.5              | 10.1       | 3.4           | 24,806        |
| <b>Types of houses</b>                |                    |               |                   |            |               |               |
| Pucca                                 | 5.4                | 25.1          | 52.8              | 12.5       | 4.2           | 22,240        |
| Semi-pucca                            | 9.2                | 37.9          | 45.3              | 6.9        | 0.7           | 11,755        |
| Kaccha                                | 16.2               | 42.9          | 36.1              | 4.5        | 0.2           | 7,904         |
| <b>Total</b>                          | <b>8.4</b>         | <b>31.9</b>   | <b>47.8</b>       | <b>9.5</b> | <b>2.5</b>    | <b>42,185</b> |

Table 4.11 shows the percent distribution of households based on their perceived financial status. About half of the households perceive their financial status as ‘about the average’. Ten percent of the households perceive themselves to be well off, followed by only 2.5% households who consider themselves to be in the ‘very well off’ category. About 47% of households in rural areas perceive that they are ‘about the average’. Six percent of households in urban areas perceive their financial status to be very well off, compared with only 1% in rural areas. About half of the households whose heads belong to other backward class perceive their status to be ‘about the average’. A higher proportion of households in the richest MPCE quintile perceive their financial status to be ‘very well off’.

### Key findings: household income

- Annual PCI for LASI age-eligible households in India is ₹44,901. Annual PCI is ₹20,065 from wages and salary, ₹9,063 from agricultural and allied activities, ₹5,155 from non-agricultural business, ₹3,649 from pension, and ₹1,513 from government transfers.
- Annual PCI for households having at least one elderly member age 60 and above is ₹42,819, compared to those with no elderly member (₹49,174).
- Sixty-five percent of the households in India report that they have only a single source of income, whereas 35% of the household's report that they have more than one source of income.
- About two-thirds of household depends on wage and salary for their livelihood.
- About half of the households perceive their financial status as 'about the average'. Ten percent of the households perceive themselves to be well off, followed by only 2.5% households who consider themselves to be in the 'very well off' category.



## 4.3 HOUSEHOLD ASSETS AND DEBTS

Household assets are used as measure for assessing the financial capabilities of households, and their economic vulnerability can be assessed based on the amount of debt they owe. Dependence on assets and debt requires more attention on the context of ageing, as elders often use their wealth to support themselves as their flow of income ceases. In the LASI, information collected on household assets includes ownership of houses, agricultural assets, land properties, wealth stock (financial and non-financial assets), and business assets that may be acquired or inherited over a period of time. Household debt includes loans and other financial obligations the household owes to others.

**Table 4.12 Percentage of households owning current residence and its distribution across categories of acquisition, Rural, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Ownership of houses (%) | Number        | Percent distribution among those who have purchased/received the house |             |                                    |                                          |            | Number        |
|---------------------------|-------------------------|---------------|------------------------------------------------------------------------|-------------|------------------------------------|------------------------------------------|------------|---------------|
|                           |                         |               | Purchased                                                              | self-built  | Inherited/<br>received from family | Received from the state/<br>central govt | Others     |               |
| <b>India</b>              | <b>94.6</b>             | <b>27,576</b> | <b>5.3</b>                                                             | <b>46.9</b> | <b>41.5</b>                        | <b>6.1</b>                               | <b>0.2</b> | <b>25,880</b> |
| <b>North</b>              |                         |               |                                                                        |             |                                    |                                          |            |               |
| Chandigarh                | -                       | -             | -                                                                      | -           | -                                  | -                                        | -          | -             |
| Delhi                     | -                       | -             | -                                                                      | -           | -                                  | -                                        | -          | -             |
| Haryana                   | 95.0                    | 833           | 6.0                                                                    | 12.8        | 78.8                               | 2.4                                      | 0.1        | 793           |
| Himachal Pradesh          | 92.0                    | 700           | 0.9                                                                    | 65.6        | 33.1                               | 0.5                                      | 0.0        | 645           |
| Jammu & Kashmir           | 98.7                    | 694           | 1.4                                                                    | 71.2        | 27.2                               | 0.2                                      | 0.0        | 685           |
| Punjab                    | 94.6                    | 871           | 3.2                                                                    | 64.4        | 31.4                               | 0.9                                      | 0.2        | 831           |
| Rajasthan                 | 96.4                    | 1,025         | 2.2                                                                    | 72.8        | 24.1                               | 0.9                                      | 0.0        | 984           |
| Uttarakhand               | 95.4                    | 618           | 2.7                                                                    | 49.2        | 48.0                               | 0.1                                      | 0.0        | 594           |
| <b>Central</b>            |                         |               |                                                                        |             |                                    |                                          |            |               |
| Chhattisgarh              | 98.5                    | 971           | 2.1                                                                    | 55.6        | 40.9                               | 1.3                                      | 0.1        | 955           |
| Madhya Pradesh            | 93.1                    | 1,192         | 9.3                                                                    | 45.1        | 41.7                               | 3.8                                      | 0.1        | 1,136         |
| Uttar Pradesh             | 98.2                    | 2,155         | 5.8                                                                    | 21.2        | 70.7                               | 1.8                                      | 0.5        | 2,112         |
| <b>East</b>               |                         |               |                                                                        |             |                                    |                                          |            |               |
| Bihar                     | 98.6                    | 1,866         | 5.5                                                                    | 18.5        | 73.2                               | 2.7                                      | 0.1        | 1,838         |
| Jharkhand                 | 98.2                    | 1,123         | 0.9                                                                    | 40.2        | 56.0                               | 2.7                                      | 0.1        | 1,103         |
| Odisha                    | 97.9                    | 1,391         | 1.9                                                                    | 53.6        | 39.0                               | 5.6                                      | 0.0        | 1,358         |
| West Bengal               | 92.9                    | 1,148         | 13.5                                                                   | 25.5        | 57.4                               | 3.6                                      | 0.1        | 1,030         |
| <b>Northeast</b>          |                         |               |                                                                        |             |                                    |                                          |            |               |
| Arunachal Pradesh         | 85.7                    | 534           | 2.0                                                                    | 88.9        | 7.1                                | 2.0                                      | 0.0        | 448           |
| Assam                     | 94.6                    | 1,322         | 0.9                                                                    | 83.6        | 3.5                                | 12.0                                     | 0.1        | 1,253         |
| Manipur                   | 92.9                    | 574           | 20.9                                                                   | 31.3        | 45.3                               | 2.1                                      | 0.4        | 536           |
| Meghalaya                 | 91.5                    | 524           | 3.9                                                                    | 45.6        | 49.7                               | 0.4                                      | 0.3        | 489           |
| Mizoram                   | 94.3                    | 360           | 7.7                                                                    | 75.7        | 14.6                               | 2.0                                      | 0.0        | 337           |
| Nagaland                  | 87.1                    | 569           | 8.8                                                                    | 42.3        | 44.6                               | 1.3                                      | 3.0        | 533           |
| Tripura                   | 89.8                    | 555           | 17.6                                                                   | 28.9        | 50.3                               | 2.8                                      | 0.3        | 498           |
| <b>West</b>               |                         |               |                                                                        |             |                                    |                                          |            |               |
| Dadra & Nagar Haveli      | 89.3                    | 391           | 0.0                                                                    | 90.3        | 6.5                                | 3.2                                      | 0.0        | 349           |
| Daman & Diu               | 81.7                    | 210           | 4.7                                                                    | 56.3        | 38.8                               | 0.2                                      | 0.0        | 175           |
| Goa                       | 92.3                    | 365           | 4.0                                                                    | 53.5        | 38.8                               | 3.0                                      | 0.8        | 332           |
| Gujarat                   | 91.6                    | 857           | 3.1                                                                    | 62.0        | 28.7                               | 6.1                                      | 0.1        | 777           |
| Maharashtra               | 93.5                    | 1,159         | 5.7                                                                    | 49.5        | 37.8                               | 6.9                                      | 0.2        | 1,077         |
| <b>South</b>              |                         |               |                                                                        |             |                                    |                                          |            |               |
| Andaman & Nicobar Islands | 88.4                    | 451           | 6.0                                                                    | 34.9        | 9.6                                | 48.3                                     | 1.2        | 398           |
| Andhra Pradesh            | 92.1                    | 1,107         | 7.9                                                                    | 46.9        | 26.0                               | 18.9                                     | 0.4        | 1,024         |
| Karnataka                 | 90.0                    | 1,012         | 6.2                                                                    | 49.6        | 37.8                               | 6.3                                      | 0.1        | 901           |
| Kerala                    | 87.8                    | 709           | 23.1                                                                   | 37.6        | 36.3                               | 2.6                                      | 0.4        | 621           |
| Lakshadweep               | 86.2                    | 132           | 0.9                                                                    | 46.6        | 52.6                               | 0.0                                      | 0.0        | 120           |
| Puducherry                | 88.3                    | 269           | 11.7                                                                   | 68.4        | 7.6                                | 12.3                                     | 0.0        | 242           |
| Tamil Nadu                | 88.4                    | 891           | 12.5                                                                   | 59.5        | 21.7                               | 6.3                                      | 0.0        | 789           |
| Telangana                 | 93.0                    | 972           | 5.6                                                                    | 68.3        | 18.2                               | 7.7                                      | 0.1        | 898           |

“-” Rural and urban is not applicable for Delhi and Chandigarh

**Table 4.13 Percentage of households owning current residence and its distribution across categories of acquisition, Urban, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Ownership of houses (%) | Number        | Percent distribution among those who have purchased/received the house |             |                                 |                                       |            | Number        |
|---------------------------|-------------------------|---------------|------------------------------------------------------------------------|-------------|---------------------------------|---------------------------------------|------------|---------------|
|                           |                         |               | Purchased                                                              | self-built  | Inherited/ received from family | Received from the state/ central govt | Others     |               |
| <b>India</b>              | <b>76.9</b>             | <b>15,373</b> | <b>23.7</b>                                                            | <b>44.7</b> | <b>27.3</b>                     | <b>3.3</b>                            | <b>0.9</b> | <b>11,776</b> |
| <b>North</b>              |                         |               |                                                                        |             |                                 |                                       |            |               |
| Chandigarh                | -                       | -             | -                                                                      | -           | -                               | -                                     | -          | -             |
| Delhi                     | -                       | -             | -                                                                      | -           | -                               | -                                     | -          | -             |
| Haryana                   | 83.1                    | 418           | 40.4                                                                   | 11.5        | 47.2                            | 0.8                                   | 0.2        | 358           |
| Himachal Pradesh          | 78.2                    | 105           | 1.4                                                                    | 71.5        | 25.0                            | 2.2                                   | 0.0        | 86            |
| Jammu & Kashmir           | 98.5                    | 263           | 4.4                                                                    | 70.1        | 25.6                            | 0.0                                   | 0.0        | 258           |
| Punjab                    | 84.7                    | 363           | 6.8                                                                    | 56.7        | 33.9                            | 0.0                                   | 2.6        | 310           |
| Rajasthan                 | 91.7                    | 277           | 24.0                                                                   | 67.0        | 7.2                             | 0.7                                   | 1.0        | 255           |
| Uttarakhand               | 88.2                    | 245           | 15.2                                                                   | 48.4        | 35.4                            | 0.6                                   | 0.4        | 205           |
| <b>Central</b>            |                         |               |                                                                        |             |                                 |                                       |            |               |
| Chhattisgarh              | 86.8                    | 218           | 16.5                                                                   | 49.3        | 24.5                            | 8.8                                   | 0.9        | 192           |
| Madhya Pradesh            | 85.5                    | 498           | 20.3                                                                   | 44.4        | 32.1                            | 3.1                                   | 0.2        | 429           |
| Uttar Pradesh             | 89.1                    | 592           | 27.3                                                                   | 23.2        | 40.7                            | 6.3                                   | 2.6        | 531           |
| <b>East</b>               |                         |               |                                                                        |             |                                 |                                       |            |               |
| Bihar                     | 95.1                    | 217           | 14.5                                                                   | 16.8        | 67.2                            | 0.9                                   | 0.6        | 205           |
| Jharkhand                 | 79.2                    | 285           | 8.2                                                                    | 59.5        | 30.8                            | 1.3                                   | 0.3        | 242           |
| Odisha                    | 82.8                    | 254           | 3.3                                                                    | 55.6        | 39.5                            | 0.9                                   | 0.6        | 211           |
| West Bengal               | 84.3                    | 1,131         | 26.8                                                                   | 25.7        | 46.8                            | 0.6                                   | 0.1        | 763           |
| <b>Northeast</b>          |                         |               |                                                                        |             |                                 |                                       |            |               |
| Arunachal Pradesh         | 26.8                    | 168           | 1.4                                                                    | 71.8        | 1.4                             | 20.1                                  | 5.4        | 61            |
| Assam                     | 77.0                    | 189           | 0.5                                                                    | 90.3        | 5.0                             | 3.4                                   | 0.8        | 143           |
| Manipur                   | 91.5                    | 286           | 10.2                                                                   | 34.4        | 52.6                            | 1.7                                   | 1.2        | 261           |
| Meghalaya                 | 66.9                    | 112           | 18.1                                                                   | 39.5        | 42.3                            | 0.0                                   | 0.0        | 74            |
| Mizoram                   | 72.2                    | 372           | 12.9                                                                   | 69.4        | 16.9                            | 0.8                                   | 0.0        | 278           |
| Nagaland                  | 75.4                    | 230           | 33.4                                                                   | 36.7        | 28.6                            | 0.2                                   | 1.2        | 184           |
| Tripura                   | 83.0                    | 166           | 31.5                                                                   | 20.1        | 46.3                            | 1.5                                   | 0.6        | 138           |
| <b>West</b>               |                         |               |                                                                        |             |                                 |                                       |            |               |
| Dadra & Nagar Haveli      | 60.3                    | 240           | 35.6                                                                   | 50.4        | 10.0                            | 4.0                                   | 0.0        | 148           |
| Daman & Diu               | 68.0                    | 367           | 10.8                                                                   | 47.5        | 40.5                            | 0.4                                   | 0.8        | 219           |
| Goa                       | 84.7                    | 512           | 24.7                                                                   | 35.3        | 38.4                            | 1.1                                   | 0.6        | 435           |
| Gujarat                   | 80.8                    | 598           | 24.9                                                                   | 49.7        | 21.7                            | 3.4                                   | 0.3        | 461           |
| Maharashtra               | 79.4                    | 1,262         | 38.5                                                                   | 38.9        | 18.6                            | 3.3                                   | 0.9        | 1,013         |
| <b>South</b>              |                         |               |                                                                        |             |                                 |                                       |            |               |
| Andaman & Nicobar Islands | 76.7                    | 274           | 29.8                                                                   | 29.3        | 16.9                            | 23.8                                  | 0.2        | 214           |
| Andhra Pradesh            | 58.0                    | 404           | 19.3                                                                   | 50.7        | 20.4                            | 7.3                                   | 2.3        | 240           |
| Karnataka                 | 60.9                    | 476           | 33.3                                                                   | 56.6        | 5.1                             | 5.0                                   | 0.1        | 311           |
| Kerala                    | 83.6                    | 702           | 25.4                                                                   | 38.3        | 35.5                            | 0.6                                   | 0.3        | 578           |
| Lakshadweep               | 91.7                    | 495           | 4.4                                                                    | 21.0        | 74.6                            | 0.0                                   | 0.0        | 454           |
| Puducherry                | 70.1                    | 570           | 20.6                                                                   | 63.9        | 11.0                            | 4.5                                   | 0.0        | 439           |
| Tamil Nadu                | 64.3                    | 1,259         | 22.0                                                                   | 60.2        | 16.2                            | 1.6                                   | 0.1        | 761           |
| Telangana                 | 63.2                    | 446           | 10.8                                                                   | 67.2        | 19.1                            | 1.2                                   | 1.7        | 281           |

“-” Rural and urban is not applicable for Delhi and Chandigarh

Tables 4.12 and 4.13 present the percentage of households owning their current residence and its distribution across categories of acquisition according to the place of residence by the states/UTs of India. In India, 95% of rural households own their residence, compared with 77% of households in urban areas. In rural areas, among those who own their house, 47% built the house, 42% inherited or received it from family, and 5% purchased the house. However, in urban areas, 45% built their house, 27% inherited or received it from family, and 24% purchased the house. The percentage of households purchased is higher in the urban than in the rural areas.

**Table 4.14 Percentage of households owning current residence and its distribution across categories of acquisition, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Ownership of houses (%) | Number        | Percent distribution among those who have purchased/received the house |             |                                    |                                       |            | Number        |
|---------------------------|-------------------------|---------------|------------------------------------------------------------------------|-------------|------------------------------------|---------------------------------------|------------|---------------|
|                           |                         |               | Purchased                                                              | self-built  | Inherited/<br>received from family | Received from the state/central govt. | Others     |               |
| <b>India</b>              | <b>89.0</b>             | <b>42,949</b> | <b>10.9</b>                                                            | <b>46.0</b> | <b>37.9</b>                        | <b>4.7</b>                            | <b>0.5</b> | <b>37,656</b> |
| <b>North</b>              |                         |               |                                                                        |             |                                    |                                       |            |               |
| Chandigarh                | 75.8                    | 651           | 37.4                                                                   | 34.1        | 13.2                               | 11.6                                  | 3.6        | 474           |
| Delhi                     | 77.2                    | 754           | 46.7                                                                   | 25.6        | 18.6                               | 6.1                                   | 3.1        | 583           |
| Haryana                   | 90.5                    | 1,251         | 18.0                                                                   | 12.3        | 67.7                               | 1.8                                   | 0.1        | 1,151         |
| Himachal Pradesh          | 90.4                    | 805           | 0.9                                                                    | 66.2        | 32.3                               | 0.6                                   | 0.0        | 731           |
| Jammu & Kashmir           | 98.7                    | 957           | 2.4                                                                    | 70.9        | 26.7                               | 0.1                                   | 0.0        | 943           |
| Punjab                    | 92.2                    | 1,234         | 4.0                                                                    | 62.7        | 31.9                               | 0.7                                   | 0.7        | 1,141         |
| Rajasthan                 | 95.2                    | 1,302         | 7.8                                                                    | 71.3        | 19.8                               | 0.8                                   | 0.3        | 1,239         |
| Uttarakhand               | 93.3                    | 863           | 6.2                                                                    | 48.9        | 44.5                               | 0.3                                   | 0.1        | 799           |
| <b>Central</b>            |                         |               |                                                                        |             |                                    |                                       |            |               |
| Chhattisgarh              | 95.8                    | 1,189         | 5.1                                                                    | 54.3        | 37.4                               | 2.9                                   | 0.3        | 1,147         |
| Madhya Pradesh            | 90.8                    | 1,690         | 12.4                                                                   | 44.9        | 39.0                               | 3.6                                   | 0.1        | 1,565         |
| Uttar Pradesh             | 96.2                    | 2,747         | 10.2                                                                   | 21.6        | 64.6                               | 2.7                                   | 0.9        | 2,643         |
| <b>East</b>               |                         |               |                                                                        |             |                                    |                                       |            |               |
| Bihar                     | 98.2                    | 2,083         | 6.6                                                                    | 18.3        | 72.5                               | 2.5                                   | 0.2        | 2,043         |
| Jharkhand                 | 93.4                    | 1,408         | 2.5                                                                    | 44.3        | 50.6                               | 2.4                                   | 0.1        | 1,345         |
| Odisha                    | 95.4                    | 1,645         | 2.1                                                                    | 53.9        | 39.0                               | 4.9                                   | 0.1        | 1,569         |
| West Bengal               | 89.8                    | 2,279         | 18.0                                                                   | 25.5        | 53.8                               | 2.6                                   | 0.1        | 1,793         |
| <b>Northeast</b>          |                         |               |                                                                        |             |                                    |                                       |            |               |
| Arunachal Pradesh         | 73.3                    | 702           | 2.0                                                                    | 87.6        | 6.7                                | 3.4                                   | 0.4        | 509           |
| Assam                     | 91.7                    | 1,511         | 0.8                                                                    | 84.5        | 3.7                                | 10.8                                  | 0.2        | 1,396         |
| Manipur                   | 92.4                    | 860           | 16.9                                                                   | 32.5        | 48.0                               | 1.9                                   | 0.7        | 797           |
| Meghalaya                 | 85.9                    | 636           | 6.4                                                                    | 44.6        | 48.4                               | 0.3                                   | 0.2        | 563           |
| Mizoram                   | 82.3                    | 732           | 10.2                                                                   | 72.7        | 15.7                               | 1.4                                   | 0.0        | 615           |
| Nagaland                  | 83.9                    | 799           | 14.9                                                                   | 40.9        | 40.6                               | 1.0                                   | 2.6        | 717           |
| Tripura                   | 87.6                    | 721           | 21.8                                                                   | 26.3        | 49.1                               | 2.4                                   | 0.4        | 636           |
| <b>West</b>               |                         |               |                                                                        |             |                                    |                                       |            |               |
| Dadra & Nagar Haveli      | 71.2                    | 631           | 18.7                                                                   | 69.4        | 8.3                                | 3.6                                   | 0.0        | 497           |
| Daman & Diu               | 69.5                    | 577           | 10.0                                                                   | 48.7        | 40.3                               | 0.3                                   | 0.7        | 394           |
| Goa                       | 87.5                    | 877           | 16.5                                                                   | 42.5        | 38.6                               | 1.8                                   | 0.7        | 767           |
| Gujarat                   | 86.9                    | 1,455         | 12.0                                                                   | 57.0        | 25.9                               | 5.0                                   | 0.2        | 1,238         |
| Maharashtra               | 87.0                    | 2,421         | 19.5                                                                   | 45.0        | 29.7                               | 5.4                                   | 0.5        | 2,090         |
| <b>South</b>              |                         |               |                                                                        |             |                                    |                                       |            |               |
| Andaman & Nicobar Islands | 83.9                    | 725           | 14.5                                                                   | 32.9        | 12.2                               | 39.6                                  | 0.8        | 612           |
| Andhra Pradesh            | 81.4                    | 1,511         | 10.4                                                                   | 47.8        | 24.8                               | 16.3                                  | 0.8        | 1,264         |
| Karnataka                 | 80.1                    | 1,488         | 13.2                                                                   | 51.4        | 29.3                               | 5.9                                   | 0.1        | 1,212         |
| Kerala                    | 85.7                    | 1,411         | 24.2                                                                   | 37.9        | 35.9                               | 1.6                                   | 0.3        | 1,199         |
| Lakshadweep               | 91.0                    | 627           | 4.0                                                                    | 24.0        | 72.0                               | 0.0                                   | 0.0        | 574           |
| Puducherry                | 75.8                    | 839           | 17.4                                                                   | 65.5        | 9.8                                | 7.3                                   | 0.0        | 681           |
| Tamil Nadu                | 76.2                    | 2,150         | 16.6                                                                   | 59.8        | 19.3                               | 4.3                                   | 0.1        | 1,550         |
| Telangana                 | 82.2                    | 1,418         | 7.0                                                                    | 68.0        | 18.5                               | 5.9                                   | 0.6        | 1,179         |

Table 4.14 presents the percentage of households owning their current residence and its distribution across categories of acquisition by states/UTs of India. About 89% of households in India own a house; this proportion varies from 99% in Jammu & Kashmir to 70% in Daman & Diu. The percentage of households owning a house is comparatively lower in the more urbanised states of India.

**Table 4.15 Percent distribution of households by type of land (cultivated/non-cultivated) and mean land size, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | % of household owning: |                      |                          |                                          | Mean size of land holdings (in acres) |                          |                                          | Number        |
|---------------------------|------------------------|----------------------|--------------------------|------------------------------------------|---------------------------------------|--------------------------|------------------------------------------|---------------|
|                           | No Land                | Only cultivated land | Only non-cultivated land | Either cultivated or non-cultivated land | Only cultivated land                  | Only non-cultivated land | Either cultivated or non-cultivated land |               |
| <b>India</b>              | <b>46.1</b>            | <b>39.8</b>          | <b>2.9</b>               | <b>42.7</b>                              | <b>2.8</b>                            | <b>2.0</b>               | <b>2.7</b>                               | <b>42,949</b> |
| <b>North</b>              |                        |                      |                          |                                          |                                       |                          |                                          |               |
| Chandigarh                | 87.4                   | 7.9                  | 1.1                      | 9.0                                      | 3.0                                   | 1.7                      | 2.8                                      | 651           |
| Delhi                     | 83.5                   | 11.0                 | 1.1                      | 12.1                                     | 3.7                                   | 4.4                      | 3.8                                      | 754           |
| Haryana                   | 54.8                   | 36.7                 | 3.1                      | 39.8                                     | 4.6                                   | 2.5                      | 4.5                                      | 1,251         |
| Himachal Pradesh          | 12.3                   | 41.6                 | 2.9                      | 44.5                                     | 2.7                                   | 1.5                      | 3.4                                      | 805           |
| Jammu & Kashmir           | 36.0                   | 46.1                 | 4.8                      | 50.9                                     | 1.7                                   | 0.9                      | 1.8                                      | 957           |
| Punjab                    | 73.0                   | 22.3                 | 0.5                      | 22.8                                     | 4.4                                   | 2.9                      | 4.2                                      | 1,234         |
| Rajasthan                 | 39.1                   | 56.1                 | 2.0                      | 58.1                                     | 4.1                                   | 3.8                      | 4.0                                      | 1,302         |
| Uttarakhand               | 45.2                   | 39.0                 | 4.1                      | 43.1                                     | 1.8                                   | 0.5                      | 1.9                                      | 863           |
| <b>Central</b>            |                        |                      |                          |                                          |                                       |                          |                                          |               |
| Chhattisgarh              | 32.2                   | 64.0                 | 1.4                      | 65.4                                     | 3.1                                   | 3.0                      | 3.1                                      | 1,189         |
| Madhya Pradesh            | 50.9                   | 43.7                 | 1.1                      | 44.7                                     | 3.8                                   | 3.2                      | 3.7                                      | 1,690         |
| Uttar Pradesh             | 34.7                   | 57.7                 | 1.3                      | 59.0                                     | 2.0                                   | 1.4                      | 2.0                                      | 2,747         |
| <b>East</b>               |                        |                      |                          |                                          |                                       |                          |                                          |               |
| Bihar                     | 45.6                   | 48.5                 | 2.3                      | 50.8                                     | 1.7                                   | 0.8                      | 1.6                                      | 2,083         |
| Jharkhand                 | 31.5                   | 60.6                 | 2.8                      | 63.4                                     | 1.8                                   | 1.3                      | 1.7                                      | 1,408         |
| Odisha                    | 34.3                   | 55.8                 | 1.6                      | 57.3                                     | 2.0                                   | 0.9                      | 2.0                                      | 1,645         |
| West Bengal               | 65.1                   | 32.1                 | 0.8                      | 32.9                                     | 1.4                                   | 1.3                      | 1.4                                      | 2,279         |
| <b>Northeast</b>          |                        |                      |                          |                                          |                                       |                          |                                          |               |
| Arunachal Pradesh         | 42.5                   | 28.3                 | 5.5                      | 33.8                                     | 1.9                                   | 1.7                      | 1.9                                      | 702           |
| Assam                     | 45.9                   | 35.4                 | 8.9                      | 44.3                                     | 2.2                                   | 0.8                      | 1.9                                      | 1,511         |
| Manipur                   | 51.7                   | 21.7                 | 10.6                     | 32.3                                     | 2.7                                   | 1.9                      | 2.3                                      | 860           |
| Meghalaya                 | 63.1                   | 19.7                 | 7.3                      | 27.0                                     | 1.7                                   | 1.7                      | 1.5                                      | 636           |
| Mizoram                   | 44.3                   | 38.4                 | 11.6                     | 50.0                                     | 2.6                                   | 3.1                      | 2.8                                      | 732           |
| Nagaland                  | 40.3                   | 43.2                 | 4.5                      | 47.7                                     | 4.5                                   | 2.9                      | 4.3                                      | 799           |
| Tripura                   | 72.7                   | 20.5                 | 2.7                      | 23.2                                     | 2.9                                   | 4.5                      | 2.8                                      | 721           |
| <b>West</b>               |                        |                      |                          |                                          |                                       |                          |                                          |               |
| Dadra & Nagar Haveli      | 38.0                   | 48.0                 | 4.5                      | 52.5                                     | 2.3                                   | 4.0                      | 2.5                                      | 631           |
| Daman & Diu               | 73.5                   | 17.1                 | 2.0                      | 19.1                                     | 4.1                                   | 1.9                      | 4.1                                      | 577           |
| Goa                       | 77.1                   | 15.9                 | 3.5                      | 19.4                                     | 4.3                                   | 1.0                      | 4.1                                      | 877           |
| Gujarat                   | 54.2                   | 37.4                 | 2.2                      | 39.6                                     | 3.8                                   | 1.5                      | 3.7                                      | 1,455         |
| Maharashtra               | 57.9                   | 29.8                 | 6.8                      | 36.6                                     | 3.9                                   | 2.7                      | 3.7                                      | 2,421         |
| <b>South</b>              |                        |                      |                          |                                          |                                       |                          |                                          |               |
| Andaman & Nicobar Islands | 85.2                   | 8.1                  | 4.9                      | 13.0                                     | 2.5                                   | 1.0                      | 2.1                                      | 725           |
| Andhra Pradesh            | 69.8                   | 25.2                 | 3.6                      | 28.7                                     | 2.7                                   | 2.4                      | 2.6                                      | 1,511         |
| Karnataka                 | 48.6                   | 45.1                 | 2.2                      | 47.3                                     | 4.0                                   | 3.2                      | 3.8                                      | 1,488         |
| Kerala                    | 70.8                   | 23.1                 | 2.4                      | 25.5                                     | 2.2                                   | 2.5                      | 2.3                                      | 1,411         |
| Lakshadweep               | 89.7                   | 7.3                  | 0.9                      | 8.1                                      | 3.0                                   | 2.3                      | 2.9                                      | 627           |
| Puducherry                | 93.1                   | 3.9                  | 2.6                      | 6.6                                      | 2.4                                   | 1.1                      | 1.9                                      | 839           |
| Tamil Nadu                | 79.9                   | 15.7                 | 3.0                      | 18.7                                     | 3.1                                   | 2.1                      | 2.8                                      | 2,150         |
| Telangana                 | 52.7                   | 37.9                 | 4.1                      | 42.0                                     | 3.3                                   | 2.7                      | 3.2                                      | 1,418         |

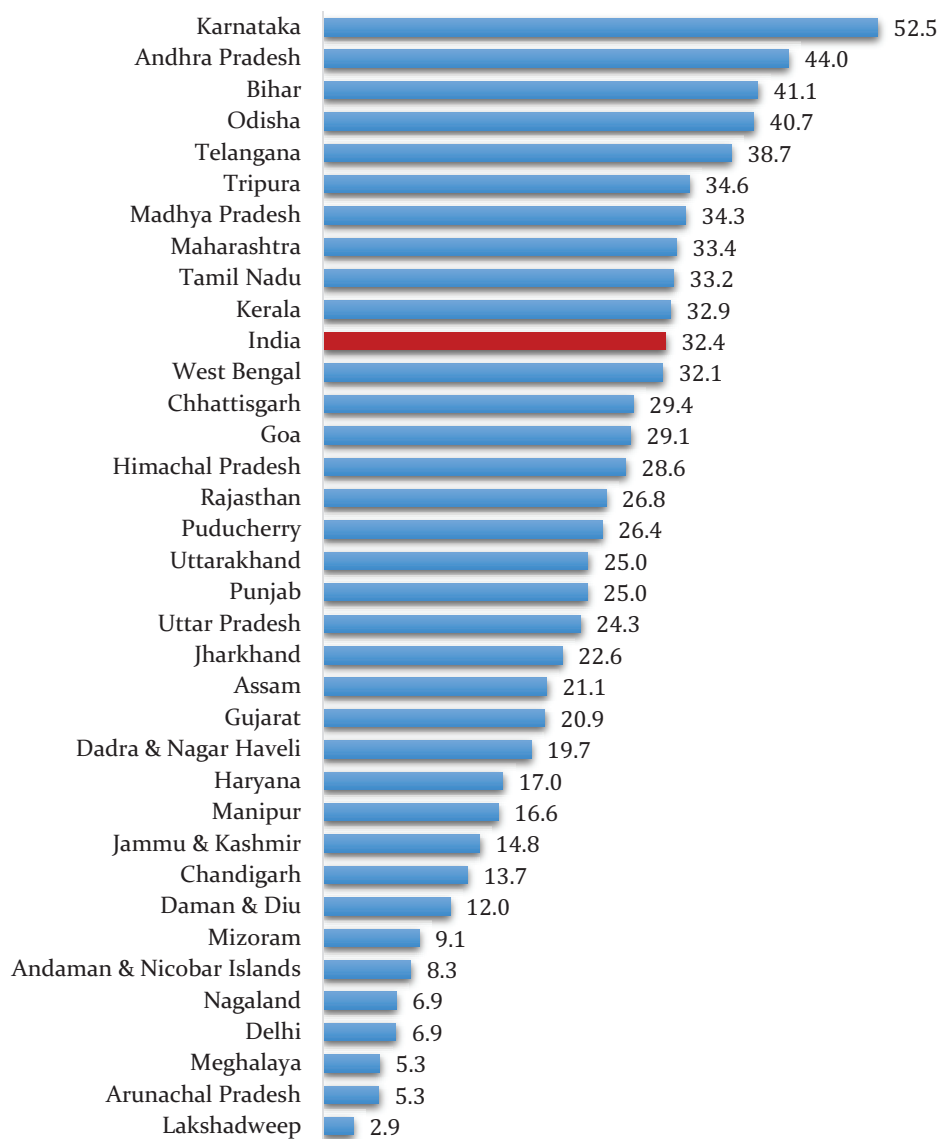
Table 4.15 presents the percentage of LASI age-eligible households that own land in the states/UTs of India. About half of the households in India do not own land (46%), 3% of households own non-cultivable land, and 43% of households own either cultivable or non-cultivable land. The mean size of cultivable land holding is 2.8 acres and non-cultivable land is 2.0 acres. About 93% of households in Puducherry do not own any land, compared with only 12% in Himachal Pradesh. The most common form of land ownership is cultivable land. The mean size of cultivable land varies from 1.4 acres in West Bengal to 4.6 acres in Haryana. The mean size of non-cultivable land varies from 0.5 acres in Uttarakhand to 4.5 acres in Tripura.

**Table 4.16 Percentage of households possessing various non-financial assets and mean value of all non-financial assets by place of residence, India, LASI Wave 1, 2017-18**

| Household Possessions                                       | Rural         | Urban           | Total           |
|-------------------------------------------------------------|---------------|-----------------|-----------------|
| <b>Household goods</b>                                      |               |                 |                 |
| Electric fan                                                | 78.0          | 94.8            | 83.3            |
| Radios/transistors                                          | 4.6           | 6.9             | 5.3             |
| Stereo Systems                                              | 0.8           | 7.3             | 2.8             |
| Cameras, Camcorders                                         | 3.0           | 13.0            | 6.1             |
| Television                                                  | 56.0          | 88.8            | 66.3            |
| Sewing machine                                              | 18.0          | 30.9            | 22.1            |
| Mobile Phones                                               | 84.1          | 93.6            | 87.1            |
| Musical Instruments                                         | 2.1           | 3.6             | 2.6             |
| Furniture                                                   | 48.5          | 68.9            | 54.9            |
| Computer                                                    | 2.9           | 20.5            | 8.4             |
| Refrigerator                                                | 19.0          | 63.3            | 32.9            |
| Air conditioner/cooler                                      | 15.3          | 40.3            | 23.1            |
| Washing machine                                             | 5.6           | 35.7            | 15.0            |
| Jewellery, precious metals and ornaments                    | 59.2          | 63.2            | 60.5            |
| Water Purifiers                                             | 3.9           | 26.0            | 10.9            |
| Antiques, valuable paintings                                | 2.3           | 7.9             | 4.1             |
| Others (such as Juicer & Mixtures, Microwave oven, Geysers) | 18.1          | 45.9            | 26.8            |
| <b>Means of Transport</b>                                   |               |                 |                 |
| Bicycle                                                     | 48.6          | 28.7            | 42.4            |
| Motorcycle/Scooter/Mopeds                                   | 37.6          | 61.2            | 45.0            |
| Car                                                         | 3.3           | 16.6            | 7.5             |
| None of the above                                           | 3.0           | 0.4             | 2.2             |
| <b>Number</b>                                               | <b>27,576</b> | <b>15,373</b>   | <b>42,949</b>   |
| <b>Mean Value of all Assets (in ₹)</b>                      | <b>72,684</b> | <b>2,60,131</b> | <b>1,26,490</b> |

In the LASI, data were collected on the ownership of 21 consumer durables from sampled households. Table 4.16 presents the percentage of households possessing various assets by type of residence in India. The penetration of mobile phones shows that phones are the most prevalent consumer durable in Indian households. About 87% of households in India have a mobile phone; 94% in urban households and 84% in rural households. The second most commonly owned consumer durable is an electric fan (83%). About three-fifths (60%) of the households own precious metal, such as jewellery and ornaments, and one-third (33%) have a refrigerator. About half of the households have a motorised vehicle (either a two-wheeler or car), and only 7% of households have a car. Ownership of most of the consumer durable assets is more common in urban households compared with rural households. Moreover, 3% of households in rural areas and less than 1% of households in urban areas do not own any of these specified items.

**Figure 4.6 Percentage of households who have taken any loan/debt, states/UTs, LASI Wave 1, 2017-18**



In India, 32% of households do not have any loans or debts, and the percentage varies from 3% in Lakshadweep to 53% in Karnataka (Figure 4.6).

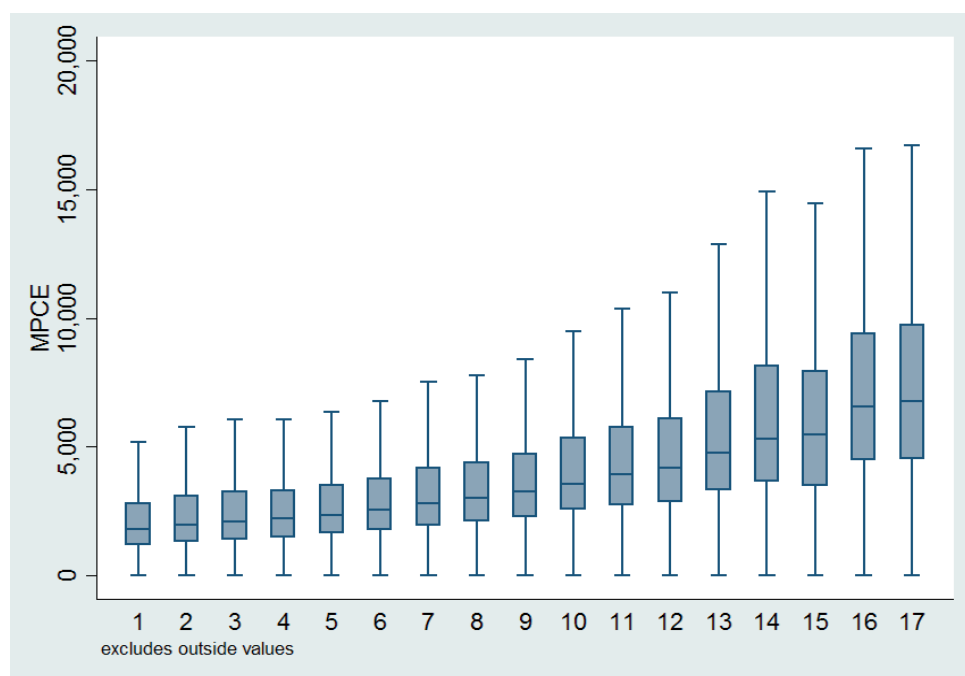


**Table 4.17 Percentage of households with debt by the purpose of loan according to place of residence, India, LASI Wave 1, 2017-18**

| Purpose of Loan                                                   | Rural        | Urban        | Total         |
|-------------------------------------------------------------------|--------------|--------------|---------------|
| <b>Percent distribution of households by purpose of loan</b>      |              |              |               |
| <b>1<sup>st</sup> largest loan</b>                                |              |              |               |
| Consumer durables (TV, refrigerator, etc.)                        | 0.9          | 3.1          | 1.3           |
| Construction/Purchase of other housing or commercial buildings    | 1.9          | 3.4          | 2.2           |
| Purchase of livestock                                             | 3.0          | 0.4          | 2.4           |
| Education                                                         | 3.5          | 5.6          | 4.0           |
| Purchase of agricultural land                                     | 8.1          | 2.0          | 6.8           |
| Living expenses                                                   | 7.1          | 6.4          | 6.9           |
| Purchase of business assets                                       | 5.9          | 11.7         | 7.1           |
| Construction/Purchase of current residence                        | 8.6          | 11.2         | 9.1           |
| Home improvement/ Renovation                                      | 10.3         | 15.7         | 11.5          |
| Purchase of agricultural assets                                   | 19.2         | 2.1          | 15.5          |
| Marriage expenses                                                 | 16.9         | 13.1         | 16.1          |
| Health care expenses                                              | 14.6         | 25.5         | 17.0          |
| <b>Number</b>                                                     | <b>8,794</b> | <b>2,937</b> | <b>11,731</b> |
| <b>2<sup>nd</sup> largest loan</b>                                |              |              |               |
| Consumer durables (TV, refrigerator, etc.)                        | 0.9          | 3.8          | 1.4           |
| Construction/Purchase of other housing or commercial buildings    | 2.2          | 1.7          | 2.1           |
| Purchase of livestock                                             | 3.5          | 0.4          | 2.9           |
| Education                                                         | 5.1          | 7.5          | 5.6           |
| Purchase of agricultural land                                     | 6.6          | 2.5          | 5.8           |
| Purchase of business assets                                       | 5.4          | 10.9         | 6.4           |
| Construction/Purchase of current residence                        | 8.9          | 7.9          | 8.8           |
| Home improvement/ Renovation                                      | 9.0          | 15.0         | 10.1          |
| Living expenses                                                   | 9.8          | 14.6         | 10.7          |
| Purchase of agricultural assets                                   | 14.6         | 2.9          | 12.4          |
| Health care expenses                                              | 17.2         | 15.8         | 16.9          |
| Marriage expenses                                                 | 16.9         | 17.0         | 16.9          |
| <b>Number</b>                                                     | <b>3,195</b> | <b>909</b>   | <b>4,104</b>  |
| <b>3<sup>rd</sup> largest loan</b>                                |              |              |               |
| Consumer durables (TV, refrigerator, etc.)                        | 0.7          | 2.6          | 1.1           |
| Construction/Purchase of other housing or commercial buildings    | 1.4          | 2.3          | 1.6           |
| Purchase of livestock                                             | 2.9          | 0.7          | 2.5           |
| Purchase of agricultural land                                     | 4.9          | 0.5          | 4.2           |
| Purchase of business assets                                       | 4.9          | 9.6          | 5.7           |
| Education                                                         | 6.3          | 7.5          | 6.5           |
| Construction/Purchase of current residence                        | 7.3          | 9.9          | 7.7           |
| Home improvement/ Renovation                                      | 7.6          | 10.1         | 8.0           |
| Purchase of agricultural assets                                   | 11.3         | 2.8          | 9.8           |
| Living expenses                                                   | 13.4         | 26.3         | 15.6          |
| Health care expenses                                              | 18.8         | 15.2         | 18.2          |
| Marriage expenses                                                 | 20.6         | 12.4         | 19.2          |
| <b>Number</b>                                                     | <b>1,308</b> | <b>342</b>   | <b>1,650</b>  |
| <b>Mean of original 1<sup>st</sup> largest loan amount (in ₹)</b> | 1,42,569     | 4,71,763     | 2,13,282      |
| <b>Mean of original 2<sup>nd</sup> largest loan amount (in ₹)</b> | 63,803       | 1,48,496     | 79,310        |
| <b>Mean of original 3<sup>rd</sup> largest loan amount (in ₹)</b> | 45,596       | 91,402       | 53,352        |
| <b>Mean/ median of total outstanding loan amount (in ₹)</b>       | 1,08,964     | 2,72,094     | 1,43,890      |

In LASI, information was also collected on household indebtedness by type and magnitude (Table 4.17). The mean household loan amount (first largest loan) is ₹ 2,13,282: ₹ 1,42,569 in rural areas and ₹ 4,71,763 in urban areas. Similarly, the mean household loan amount (second largest loan) is ₹ 63,803 in rural areas and ₹ 1,48,496 in urban areas. The mean outstanding loan amount is ₹ 1,43,890 in India: ₹ 1,08,964 in rural areas and ₹ 2,72,094 in urban areas. The purchase of agricultural assets is the single largest purpose of taking loans in rural areas, followed by marriage expenses and health care expenses. In urban areas, health-related expense is the single largest expense, followed by renovation of houses and marriage expenses. Purchase of agricultural assets, health-related expenses, and marriage expenses constitute the most dominant cause for household indebtedness.

**Figure 4.7 Box plot of monthly per capita consumption expenditure by number of consumer durables, India, LASI Wave 1, 2017-18**



#### Key findings: household assets & debts

- Ninety-five percent of households in India's rural areas, compared with 77% in urban areas, own a house.
- About half of the households in India do not own land.
- Mobile phone is the most prevalent (87%) consumer durable in Indian households. About half of households have a motorised vehicle (either a two-wheeler or car), and only 8% of households have a car.
- In urban areas, health-related expense is the most frequent reason for indebtedness (26%), followed by renovation of house (16%) and marriage expenses (13%), whereas the purchase of agricultural assets (19%) is the main reason for indebtedness in rural India.

## 4.4 HOUSEHOLD HEALTH INSURANCE

In the LASI survey, information was collected on the awareness, accessibility and coverage of various health insurance schemes provided by the central and state governments and private insurers. The awareness of and accessibility to health insurance schemes is important for all households, irrespective of their socio-economic status, as it will help people to improve their health-seeking behaviour and prevent catastrophic health expenditure. This section presents results related to the coverage of the selected public and private health insurance schemes at the household level in India and its states/UTs (Table 4.18).

### 4.4.1 Type of the health insurance: state differentials

In India, 26% of the households are covered by any health insurance. More than half of the households are covered by health insurance in Assam (65%), Mizoram (66%), Dadra & Nagar Haveli (55%), Goa (56%), Odisha (62%), Rajasthan (52%), Chhattisgarh (53%), and Telangana (52%). Health insurance coverage is less than 10% in Jammu & Kashmir, Punjab, Madhya Pradesh, Uttar Pradesh, Bihar, Manipur, Nagaland, Andaman & Nicobar Islands, and Puducherry.

### 4.4.2 Central Government Health Scheme

The Central Government Health Scheme (CGHS) is a contributory health scheme for central government employees and their dependents. CGHS offers comprehensive health services through allopathic, homeopathic, and traditional forms of medicines in India such as Ayurveda, Unani, Yoga, and Siddha. The CGHS coverage in India is 2.4%. This coverage is higher in the states/UTs of Jharkhand (26%), Assam (15%), Daman & Diu (12%), and Lakshadweep (9%). The coverage is less than 1% in the remaining 19 states/UTs in India.

### 4.4.3 Employee State Insurance Scheme

The Employee State Insurance Scheme (ESIS) is applicable to all types of establishments with 10 or more workers. ESIS is a self-financing social security and health insurance scheme, and it mainly covers medical and cash benefits. A little more than 2% of the total households have insurance through ESIS. The ESIS coverage is higher in the states/UTs of Karnataka (7%), Chandigarh (5%), Himachal Pradesh (5%), Goa (5%), Rajasthan (4%), Haryana (4%), and Delhi (4%). Similar to CGHS, the coverage of ESIS in many north-eastern states is almost negligible (less than 1%). A negligible proportion of households from eastern states such as Bihar (0.5%), Jharkhand (0.7%), and Odisha (0.2 %) are covered under ESIS. Other states/UTs with insignificant coverage of ESIS include Punjab (0.2%), Uttar Pradesh (0.4%), Dadra & Nagar Haveli (0.3%), Maharashtra (0.8%), Andaman & Nicobar Islands (0.7%), and Puducherry (0.9%). Lakshadweep and Daman & Diu have no coverage of ESIS.

### 4.4.4 Rashtriya Swasthya Bima Yojana and allied schemes

The Rashtriya Swasthya Bima Yojana (RSBY) and allied schemes have emerged as the most common health insurance schemes in India. Initiated by the Government of India and several state governments, the RSBY and the state-specific allied public health insurance schemes provide protection to all households against health expenses. About 21% of households in India are beneficiaries of RSBY and allied schemes. RSBY and allied schemes are popular in several states/UTs such as Mizoram (65%), Odisha (62%), Assam (59%), Dadra & Nagar Haveli (56%), and Goa (54%), where at least half of the total households are covered under these health insurance schemes. RSBY and other allied schemes have no or negligible presence in the states/UTs of Andaman & Nicobar Islands, Delhi, Uttar Pradesh, Manipur, and Haryana.

#### ***4.4.5 Community Cooperative Health Insurance Schemes***

Community-based health insurance offers protection to individuals and households against uncertain risks of medical expenses. The coverage of community-based health insurance across India is negligible (0.2%). As it is a community-owned model, it can potentially include the excluded and marginalised sections of people who are unable to access formal health insurance schemes. Such models need to be promoted and supported, so that low-income households can experience improved access to health care services.

#### ***4.4.6 Medical Reimbursement/Health Insurance through an Employer***

Employer-sponsored health promotion schemes, such as individual/group health insurance or medical reimbursement, are offered to eligible employees and their dependents. These forms of reimbursement or insurance generally consist of expenditure compensation for doctors' visits, surgery, medicine, medical treatment travel, etc. In India, the coverage of employer-sponsored health promotion schemes is 1.2%. Only the states/UTs of Himachal Pradesh, Karnataka, Goa, Dadra & Nagar Haveli, Gujarat, and Telangana have more than 2% of households covered under such employer-sponsored health promotion schemes.

#### ***4.4.7 Privately Purchased Commercial Health Insurance***

Commercial health insurance is provided by private insurance companies for profit, and it varies widely in the amount and type of coverage. About 1% of households have purchased health insurance from private insurance companies. Only in the state/UTs of Kerala, Chandigarh, and Delhi are more than 5% of households protected under any privately purchased commercial health insurance scheme.

It may be noted that the LASI survey was launched before the implementation of “Ayushman Bharat” and not captured in the survey.

**Table 4.18 Percentage of households covered by type of health insurance, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territories  | Types of health insurance |                                         |                                         |                                                          |                                                |                                                                              |                                                 | Number        |
|---------------------------|---------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------|---------------|
|                           | Any Health Insurance*     | Central Government Health Scheme (CGHS) | Employees State Insurance Scheme (ESIS) | Rashtriya Swasthya Bima Yojana (RSBY) and allied schemes | Community Cooperative Health Insurance Schemes | Medical reimbursement from an employer/ health insurance through an employer | Privately Purchased Commercial Health Insurance |               |
| <b>India</b>              | <b>26.2</b>               | <b>2.4</b>                              | <b>2.1</b>                              | <b>20.7</b>                                              | <b>0.2</b>                                     | <b>1.2</b>                                                                   | <b>1.4</b>                                      | <b>42,949</b> |
| <b>North</b>              |                           |                                         |                                         |                                                          |                                                |                                                                              |                                                 |               |
| Chandigarh                | 21.1                      | 8.6                                     | 4.8                                     | 2.2                                                      | 0.5                                            | 2.0                                                                          | 5.3                                             | 651           |
| Delhi                     | 22.9                      | 11.8                                    | 3.8                                     | 0.4                                                      | 0.0                                            | 2.1                                                                          | 7.2                                             | 754           |
| Haryana                   | 10.2                      | 3.1                                     | 3.7                                     | 0.7                                                      | 0.0                                            | 1.2                                                                          | 2.1                                             | 1,251         |
| Himachal Pradesh          | 21.5                      | 3.5                                     | 4.7                                     | 9.9                                                      | 0.5                                            | 5.2                                                                          | 0.7                                             | 805           |
| Jammu & Kashmir           | 3.0                       | 0.2                                     | 1.4                                     | 1.2                                                      | 0.0                                            | 0.1                                                                          | 0.2                                             | 957           |
| Punjab                    | 8.3                       | 1.5                                     | 0.2                                     | 6.3                                                      | 0.2                                            | 0.1                                                                          | 0.6                                             | 1,234         |
| Rajasthan                 | 51.7                      | 2.4                                     | 4.3                                     | 44.9                                                     | 0.1                                            | 1.0                                                                          | 0.6                                             | 1,302         |
| Uttarakhand               | 21.4                      | 4.8                                     | 1.1                                     | 13.5                                                     | 0.3                                            | 1.4                                                                          | 1.3                                             | 863           |
| <b>Central</b>            |                           |                                         |                                         |                                                          |                                                |                                                                              |                                                 |               |
| Chhattisgarh              | 52.6                      | 2.4                                     | 1.6                                     | 48.3                                                     | 0.1                                            | 0.9                                                                          | 0.7                                             | 1,189         |
| Madhya Pradesh            | 8.9                       | 1.2                                     | 1.5                                     | 3.5                                                      | 0.1                                            | 1.4                                                                          | 1.7                                             | 1,690         |
| Uttar Pradesh             | 2.9                       | 1.4                                     | 0.4                                     | 0.6                                                      | 0.0                                            | 0.0                                                                          | 0.6                                             | 2,747         |
| <b>East</b>               |                           |                                         |                                         |                                                          |                                                |                                                                              |                                                 |               |
| Bihar                     | 3.2                       | 0.8                                     | 0.5                                     | 1.4                                                      | 0.1                                            | 0.2                                                                          | 0.3                                             | 2,083         |
| Jharkhand                 | 28.4                      | 25.6                                    | 0.7                                     | 1.4                                                      | 0.0                                            | 1.0                                                                          | 0.3                                             | 1,408         |
| Odisha                    | 62.0                      | 0.4                                     | 0.2                                     | 61.6                                                     | 0.2                                            | 0.2                                                                          | 0.5                                             | 1,645         |
| West Bengal               | 24.8                      | 1.9                                     | 1.8                                     | 18.8                                                     | 1.0                                            | 1.0                                                                          | 2.2                                             | 2,279         |
| <b>Northeast</b>          |                           |                                         |                                         |                                                          |                                                |                                                                              |                                                 |               |
| Arunachal Pradesh         | 10.4                      | 0.4                                     | 0.0                                     | 9.6                                                      | 0.0                                            | 0.8                                                                          | 0.6                                             | 702           |
| Assam                     | 64.5                      | 14.7                                    | 0.6                                     | 58.7                                                     | 0.2                                            | 0.6                                                                          | 1.9                                             | 1,511         |
| Manipur                   | 1.5                       | 0.6                                     | 0.2                                     | 0.6                                                      | 0.0                                            | 0.4                                                                          | 0.1                                             | 860           |
| Meghalaya                 | 55.2                      | 0.9                                     | 0.5                                     | 54.0                                                     | 0.5                                            | 0.9                                                                          | 0.1                                             | 636           |
| Mizoram                   | 66.0                      | 0.0                                     | 0.1                                     | 65.2                                                     | 0.0                                            | 1.7                                                                          | 0.8                                             | 732           |
| Nagaland                  | 1.1                       | 0.0                                     | 0.0                                     | 1.1                                                      | 0.0                                            | 0.0                                                                          | 0.0                                             | 799           |
| Tripura                   | 38.7                      | 0.4                                     | 0.2                                     | 38.4                                                     | 0.0                                            | 0.7                                                                          | 0.2                                             | 721           |
| <b>West</b>               |                           |                                         |                                         |                                                          |                                                |                                                                              |                                                 |               |
| Dadra & Nagar Haveli      | 55.3                      | 7.2                                     | 0.3                                     | 55.8                                                     | 0.0                                            | 3.0                                                                          | 3.1                                             | 631           |
| Daman & Diu               | 18.9                      | 12.3                                    | 0.0                                     | 12.2                                                     | 0.0                                            | 1.5                                                                          | 3.4                                             | 577           |
| Goa                       | 58.5                      | 1.3                                     | 4.8                                     | 53.7                                                     | 0.2                                            | 3.5                                                                          | 1.4                                             | 877           |
| Gujarat                   | 38.5                      | 0.9                                     | 2.0                                     | 34.0                                                     | 0.1                                            | 2.3                                                                          | 3.4                                             | 1,455         |
| Maharashtra               | 11.4                      | 1.7                                     | 0.8                                     | 6.5                                                      | 0.1                                            | 1.2                                                                          | 2.0                                             | 2,421         |
| <b>South</b>              |                           |                                         |                                         |                                                          |                                                |                                                                              |                                                 |               |
| Andaman & Nicobar Islands | 1.2                       | 0.9                                     | 0.7                                     | 0.0                                                      | 0.0                                            | 0.0                                                                          | 0.2                                             | 725           |
| Andhra Pradesh            | 41.8                      | 0.5                                     | 2.3                                     | 39.4                                                     | 0.1                                            | 0.7                                                                          | 0.5                                             | 1,511         |
| Karnataka                 | 29.5                      | 1.0                                     | 6.8                                     | 22.6                                                     | 0.2                                            | 3.0                                                                          | 0.5                                             | 1,488         |
| Kerala                    | 44.2                      | 2.3                                     | 1.9                                     | 35.7                                                     | 0.3                                            | 1.9                                                                          | 5.3                                             | 1,411         |
| Lakshadweep               | 14.4                      | 9.0                                     | 0.0                                     | 7.6                                                      | 0.2                                            | 0.3                                                                          | 2.0                                             | 627           |
| Puducherry                | 8.7                       | 0.9                                     | 0.9                                     | 5.5                                                      | 0.0                                            | 0.1                                                                          | 1.7                                             | 839           |
| Tamil Nadu                | 48.5                      | 1.5                                     | 1.3                                     | 44.3                                                     | 0.2                                            | 0.5                                                                          | 2.6                                             | 2,150         |
| Telangana                 | 51.8                      | 3.7                                     | 2.9                                     | 44.4                                                     | 0.0                                            | 2.3                                                                          | 0.7                                             | 1,418         |

\*Any health insurance includes one or more types of health insurance.

### Key findings: household health insurance

- Twenty-six percent of households are covered by some form of health insurance in India.
- About 21% of households in India are beneficiaries of RSBY and allied schemes. RSBY and allied schemes are popular in several states/UTs such as Mizoram (65%), Odisha (62%), Assam (59%), Dadra & Nagar Haveli (56%), and Goa (54%)



## 5. DEMOGRAPHICS

Demographic and socio-economic characteristics of a study population provide essential background information for assessing the health and well-being of the older adult populations across the socio-economic spectrum. These characteristics are also key for tracking the LASI survey participants. In the LASI survey, information was collected on the following characteristics of older adults: age, sex, education, religion, caste, marital status, number of marriages, remarriage, and migration status. This chapter presents information on the demographic and socio-economic characteristics of the LASI survey participants age 45 and above, and their spouses, irrespective of their age. The characteristics include age and sex distribution, level of schooling, caste, religion, marital status, and migration status in the current place of residence.

### 5.1 AGE-SEX DISTRIBUTION OF OLDER ADULTS

Age and sex are vital characteristics, as they not only affect various demographic parameters but also influence the assessment of the social, economic, political, and health characteristics in a population. Age and sex also provide insight into the status and role of an individual in the family and society. Information on the distribution of the population by age and sex also helps in the effective projection and planning for various social welfare programs. In LASI, a total of 72,250 individual respondents, including age-eligible respondents (45 years and above) and their spouses (irrespective of age), were interviewed from 28 states and 6 union territories of India. Of these, 30,569 are males, and 41,681 are females. Fifteen percent of the female respondents and a small number of male respondents are less than 45 years of age. Among the male respondents, 18% are less than 49 years, and 31% are in the 50-59 age group. More than half of the male respondents are elderly age 60 and above (30% age 60-69, 16% age 70-79, and 6% age 80 years and above). In contrast, a little less than one-third of the female respondents (32%) are less than 49 years of age while 27% are in the age group 50-59 followed by 25% in the age group 60-69, 12% in the age group 70-79, and 5% are age 80 and above. By residence, in both rural and urban India, an almost similar proportion of respondents were interviewed across various age groups (Table 5.1).

**Table 5.1 Age distribution of older adults\* (five-year age group) by sex and place of residence, India, LASI Wave 1, 2017-18**

| Age groups   | Sex           |               | Place of residence |               |            | Number        |
|--------------|---------------|---------------|--------------------|---------------|------------|---------------|
|              | Male          | Female        | Rural              | Urban         | Total      |               |
| <45          | 0.1           | 14.9          | 8.2                | 9.6           | 8.7        | 6688          |
| 45-49        | 17.5          | 17.0          | 16.7               | 18.3          | 17.2       | 13182         |
| 50-54        | 16.4          | 13.5          | 14.1               | 16.1          | 14.7       | 10912         |
| 55-59        | 14.2          | 13.1          | 13.5               | 13.6          | 13.5       | 10004         |
| 60-64        | 15.2          | 12.6          | 14.5               | 12.1          | 13.7       | 10132         |
| 65-69        | 14.7          | 12.0          | 13.3               | 12.7          | 13.1       | 8842          |
| 70-74        | 9.8           | 7.8           | 8.8                | 8.2           | 8.6        | 5741          |
| 75-79        | 6.4           | 4.4           | 5.3                | 5.1           | 5.3        | 3360          |
| 80+          | 5.7           | 4.8           | 5.5                | 4.4           | 5.2        | 3389          |
| <b>Total</b> | <b>30,569</b> | <b>41,681</b> | <b>46,534</b>      | <b>25,716</b> | <b>100</b> | <b>72,250</b> |

\* Including spouse irrespective of age.

Table 5.2 presents the age distribution of the older adults and median age by states/UTs of India. A large proportion of respondents (17%) in almost all the states/UTs belong to the age group 45-49 years. More than a fifth of older adults are in the age group 45-49 years in Arunachal Pradesh (30%), Delhi (27%), Dadra & Nagar Haveli (23%), Assam (22%), Meghalaya (22%), Chandigarh (21%), Tripura (20%), and Chhattisgarh (21%). Between 13-16% of the total respondents in all the states and union territories belong to age 50-54 (except Chhattisgarh; 19%), whereas this percentage ranges from 10-16% in the age group 55-59 years. Except for Arunachal Pradesh and Karnataka, in all other states and union territories more than 11% of the older adults are in the age group 60-64 years. Most states/UTs have 2-7% oldest old elderly (aged 75 and above). Nagaland (9%), Jammu & Kashmir (7%), Mizoram (7%), Rajasthan (7%), Manipur (6%), and Kerala (6%) have a relatively higher proportion of older adults aged 80 and above.

**Table 5.2 Age distribution of older adults\* (five-year age group), states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age groups  |            |             |             |             |             |             |            |            |            | Number        |
|---------------------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|---------------|
|                           | Median Age  | <45        | 45-49       | 50-54       | 55-59       | 60-64       | 65-69       | 70-74      | 75-79      | 80+        |               |
| <b>India</b>              | <b>58.0</b> | <b>8.7</b> | <b>17.2</b> | <b>14.7</b> | <b>13.5</b> | <b>13.7</b> | <b>13.1</b> | <b>8.6</b> | <b>5.3</b> | <b>5.2</b> | <b>72,250</b> |
| <b>North</b>              |             |            |             |             |             |             |             |            |            |            |               |
| Chandigarh                | 56.0        | 8.2        | 20.7        | 15.9        | 15.4        | 12.6        | 8.6         | 7.4        | 5.8        | 5.4        | 1,026         |
| Delhi                     | 53.0        | 11.0       | 27.3        | 14.1        | 9.7         | 12.8        | 11.8        | 7.0        | 3.4        | 2.9        | 1,319         |
| Haryana                   | 59.0        | 6.9        | 17.9        | 14.8        | 12.6        | 15.2        | 13.1        | 9.2        | 5.7        | 4.7        | 1,898         |
| Himachal Pradesh          | 58.0        | 9.5        | 17.0        | 13.0        | 13.2        | 13.9        | 11.9        | 8.9        | 6.5        | 6.2        | 1,388         |
| Jammu & Kashmir           | 59.0        | 7.4        | 17.0        | 14.0        | 12.5        | 14.0        | 14.3        | 8.5        | 5.8        | 6.6        | 1,613         |
| Punjab                    | 58.0        | 7.0        | 17.8        | 14.5        | 12.9        | 13.3        | 13.5        | 10.0       | 5.1        | 5.8        | 2,124         |
| Rajasthan                 | 59.0        | 5.0        | 15.1        | 15.1        | 14.9        | 16.2        | 12.7        | 8.8        | 5.4        | 6.9        | 2,244         |
| Uttarakhand               | 59.0        | 6.7        | 18.4        | 13.1        | 12.6        | 16.8        | 15.0        | 9.5        | 4.6        | 3.4        | 1,358         |
| <b>Central</b>            |             |            |             |             |             |             |             |            |            |            |               |
| Chhattisgarh              | 55.0        | 7.3        | 19.9        | 18.8        | 15.6        | 14.0        | 11.0        | 6.2        | 3.4        | 3.8        | 2,055         |
| Madhya Pradesh            | 58.0        | 7.9        | 18.8        | 14.0        | 11.8        | 14.3        | 12.6        | 7.7        | 6.6        | 6.5        | 2,914         |
| Uttar Pradesh             | 59.0        | 5.7        | 16.3        | 14.0        | 14.6        | 14.6        | 14.0        | 9.9        | 5.2        | 5.7        | 4,567         |
| <b>East</b>               |             |            |             |             |             |             |             |            |            |            |               |
| Bihar                     | 60.0        | 5.6        | 14.3        | 13.2        | 13.0        | 17.0        | 14.7        | 10.4       | 5.9        | 6.0        | 3,520         |
| Jharkhand                 | 58.0        | 9.4        | 15.5        | 14.4        | 12.5        | 18.1        | 12.4        | 8.3        | 4.5        | 5.1        | 2,464         |
| Odisha                    | 57.0        | 9.7        | 17.6        | 15.0        | 13.8        | 14.9        | 11.5        | 7.4        | 5.3        | 5.0        | 2,917         |
| West Bengal               | 56.0        | 12.9       | 18.2        | 14.3        | 14.0        | 12.8        | 10.2        | 7.3        | 5.2        | 5.1        | 3,933         |
| <b>Northeast</b>          |             |            |             |             |             |             |             |            |            |            |               |
| Arunachal Pradesh         | 50.0        | 18.8       | 29.9        | 15.0        | 12.1        | 8.2         | 6.3         | 5.4        | 1.6        | 2.8        | 1,215         |
| Assam                     | 54.0        | 14.5       | 21.5        | 15.1        | 13.1        | 10.8        | 11.0        | 6.4        | 4.4        | 3.3        | 2,366         |
| Manipur                   | 58.0        | 8.7        | 16.5        | 14.7        | 13.4        | 12.5        | 13.0        | 8.8        | 6.1        | 6.4        | 1,369         |
| Meghalaya                 | 56.0        | 9.3        | 21.5        | 13.7        | 13.4        | 13.7        | 9.5         | 8.0        | 5.3        | 5.6        | 969           |
| Mizoram                   | 58.0        | 8.0        | 14.9        | 14.4        | 17.7        | 13.1        | 11.7        | 7.3        | 6.2        | 6.6        | 1,246         |
| Nagaland                  | 59.0        | 8.2        | 17.5        | 13.9        | 11.5        | 14.5        | 13.6        | 7.4        | 4.5        | 9.0        | 1,316         |
| Tripura                   | 55.0        | 12.8       | 20.0        | 13.6        | 14.4        | 14.0        | 10.0        | 6.1        | 4.1        | 5.2        | 1,195         |
| <b>West</b>               |             |            |             |             |             |             |             |            |            |            |               |
| Dadra & Nagar Haveli      | 55.0        | 9.8        | 22.7        | 16.1        | 12.6        | 12.6        | 12.6        | 7.8        | 3.3        | 2.6        | 1,090         |
| Daman & Diu               | 58.0        | 7.8        | 16.9        | 14.4        | 13.4        | 13.9        | 14.5        | 9.8        | 5.8        | 3.5        | 991           |
| Goa                       | 58.0        | 10.9       | 16.8        | 14.2        | 12.4        | 13.4        | 12.0        | 8.6        | 7.0        | 4.6        | 1,427         |
| Gujarat                   | 58.0        | 8.1        | 17.2        | 15.0        | 14.6        | 15.5        | 15.0        | 7.2        | 3.5        | 3.8        | 2,341         |
| Maharashtra               | 59.0        | 8.8        | 16.3        | 13.7        | 12.4        | 13.6        | 14.5        | 10.3       | 5.4        | 5.2        | 3,973         |
| <b>South</b>              |             |            |             |             |             |             |             |            |            |            |               |
| Andaman & Nicobar Islands | 56.0        | 12.3       | 19.0        | 14.7        | 13.2        | 14.5        | 10.9        | 7.0        | 4.2        | 4.2        | 1,244         |
| Andhra Pradesh            | 56.0        | 10.6       | 19.0        | 14.7        | 13.7        | 13.7        | 13.9        | 6.8        | 3.8        | 3.8        | 2,679         |
| Karnataka                 | 56.0        | 12.2       | 17.1        | 16.7        | 13.8        | 9.4         | 13.1        | 7.6        | 5.7        | 4.3        | 2,420         |
| Kerala                    | 60.0        | 7.4        | 14.0        | 14.5        | 12.5        | 14.4        | 14.7        | 9.8        | 6.7        | 6.1        | 2,497         |
| Lakshadweep               | 58.0        | 5.7        | 15.8        | 17.4        | 13.6        | 17.5        | 12.6        | 9.1        | 5.4        | 3.1        | 1,139         |
| Puducherry                | 58.0        | 9.0        | 14.3        | 14.3        | 15.5        | 15.0        | 12.9        | 9.1        | 4.5        | 5.4        | 1,428         |
| Tamil Nadu                | 57.0        | 9.1        | 16.6        | 15.3        | 13.2        | 13.6        | 12.6        | 9.2        | 5.9        | 4.7        | 3,530         |
| Telangana                 | 57.0        | 8.7        | 18.4        | 14.2        | 14.1        | 11.9        | 14.6        | 9.0        | 3.5        | 5.7        | 2,475         |

\* Including spouse irrespective of age.

## 5.2 OLDER ADULTS BY BACKGROUND CHARACTERISTICS

Table 5.3 presents the older adults interviewed in LASI Wave 1 by background characteristics. More than half of the respondents (54%) are less than 60 years of age, and 46% are age 60 and above. Sixty-eight percent of the older adults are from rural areas, while 32% are from urban areas. Among older adults age 45 years and above, 76% are currently married, 22% are widowed, and 3% are divorced/separated/deserted/other. More than a third (36%) of the elderly age 60 and above are widowed compared to only 9% in the older adults age 45-59. The proportion of widowed is three times higher among women older adults (30%) than men older adults (10%). This proportion is more than 50% among the women elderly as compared to only 17% among the men elderly. The living arrangements of older adults indicate that in India merely 3% of older adults live alone, and another 4% live with other relatives without a spouse and children. The majority of older adults age 45 and above (75%) live with their spouse, either with or without their children, and with other relatives. Approximately 28% of the elderly are living with children without a spouse. The living arrangements of the elderly age 60 and above are very different from those of older adults age 45-59. Six percent of the elderly age 60 and above live alone compared to 1% of the older adults age 45-59. Similarly, a large proportion of women elderly live alone (9%) or with their children and others (41%) than the men elderly (3% and 13%). Eighty-two percent of older adults belong to Hindu religion. Forty-six percent of the older adults belong to other backward classes. The proportion of older adults from Scheduled tribe is 9% and Scheduled caste is 19%.

**Table 5.3 Percent distribution of older adults by age according to sex and background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics        | Male        |             |             | Female      |             |             | Total       |             |              | Number        |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|---------------|
|                                   | Age 45-59*  | Age ≥ 60    | Total       | Age 45-59*  | Age ≥ 60    | Total       | Age 45-59*  | Age ≥ 60    | Total        |               |
| <b>Place of Residence</b>         |             |             |             |             |             |             |             |             |              |               |
| Rural                             | 67.1        | 72.1        | 69.7        | 65.7        | 69.2        | 67.2        | 66.2        | 70.6        | 68.2         | 46,534        |
| Urban                             | 32.9        | 28.0        | 30.4        | 34.3        | 30.8        | 32.9        | 33.8        | 29.5        | 31.8         | 25,716        |
| <b>Marital status</b>             |             |             |             |             |             |             |             |             |              |               |
| Currently married                 | 93.5        | 81.1        | 87.1        | 83.8        | 44.1        | 67.3        | 87.4        | 61.6        | 75.6         | 55,396        |
| Widowed                           | 3.3         | 16.5        | 10.1        | 13.0        | 54.0        | 30.0        | 9.4         | 36.2        | 21.7         | 14,593        |
| Divorced/Separated/Deserted/Other | 3.2         | 2.4         | 2.8         | 3.2         | 2.0         | 2.7         | 3.2         | 2.2         | 2.7          | 2,261         |
| <b>Living arrangement</b>         |             |             |             |             |             |             |             |             |              |               |
| Living alone                      | 0.9         | 2.5         | 1.8         | 1.7         | 8.5         | 4.5         | 1.4         | 5.7         | 3.4          | 2,313         |
| Living with spouse and/or others  | 12.0        | 26.0        | 19.3        | 12.3        | 15.2        | 13.5        | 12.2        | 20.3        | 15.9         | 10,838        |
| Living with spouse and children   | 80.8        | 54.4        | 67.1        | 70.2        | 28.2        | 52.7        | 74.2        | 40.6        | 58.8         | 43,663        |
| Living with children and others   | 3.5         | 13.2        | 8.6         | 12.8        | 40.7        | 24.4        | 9.4         | 27.6        | 17.7         | 12,494        |
| Living with others only           | 2.8         | 3.9         | 3.3         | 3.0         | 7.4         | 4.9         | 2.9         | 5.7         | 4.2          | 2,942         |
| <b>Religion</b>                   |             |             |             |             |             |             |             |             |              |               |
| Hindu                             | 82.2        | 82.0        | 82.1        | 81.3        | 82.4        | 81.8        | 81.7        | 82.2        | 81.9         | 52,973        |
| Muslim                            | 11.7        | 11.7        | 11.7        | 12.2        | 10.9        | 11.7        | 12.0        | 11.3        | 11.7         | 8,667         |
| Christian                         | 2.7         | 2.6         | 2.6         | 3.3         | 3.1         | 3.2         | 3.1         | 2.9         | 3.0          | 7,215         |
| Others                            | 3.4         | 3.7         | 3.6         | 3.2         | 3.6         | 3.4         | 3.3         | 3.6         | 3.5          | 3,395         |
| <b>Caste</b>                      |             |             |             |             |             |             |             |             |              |               |
| Scheduled tribe                   | 9.4         | 7.7         | 8.5         | 8.6         | 8.5         | 8.6         | 8.9         | 8.1         | 8.5          | 12,509        |
| Scheduled caste                   | 19.1        | 18.8        | 18.9        | 19.5        | 19.0        | 19.3        | 19.4        | 18.9        | 19.2         | 12,046        |
| Other backward class              | 45.6        | 45.9        | 45.7        | 45.8        | 44.7        | 45.3        | 45.7        | 45.2        | 45.5         | 27,184        |
| None of them                      | 26.0        | 27.6        | 26.9        | 26.1        | 27.8        | 26.8        | 26.1        | 27.7        | 26.8         | 20,511        |
| <b>Total</b>                      | <b>48.2</b> | <b>51.8</b> | <b>42.0</b> | <b>58.5</b> | <b>41.6</b> | <b>58.0</b> | <b>54.1</b> | <b>45.9</b> | <b>100.0</b> | <b>72,250</b> |

\* Including spouse irrespective of age.

## 5.3 LEVEL OF EDUCATION

Table 5.4 presents the older adults by level of education according to sex and background characteristics. All the respondents were asked whether they ever attended school, and if yes, the number of years of schooling they completed, and the highest level of schooling they attained. Half of the older adults age 45 and above did not have any formal education, 4% obtained a college degree, 2% possessed a professional course/degree and another 5% completed higher secondary school. The level of education is higher among older adults living in urban than those living in rural areas. Nearly 60% of older adults from rural areas do not have any formal schooling compared to 29% of those living in urban areas. Nearly 14% of older adults from urban and 2% from rural India completed college or attained a professional education. Forty-four percent of older adults age 45-59 and 57% of the elderly had no schooling. Only 4% of the elderly age 60 and above have had up to college/professional level education while 7% of older adults age 45-59 did so.

**Table 5.4 Percent distribution of older adults\* age 45 and above by level of education according to sex and background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics | Male         |                          |                          |                            |                                   |                   |                            | Number        |
|----------------------------|--------------|--------------------------|--------------------------|----------------------------|-----------------------------------|-------------------|----------------------------|---------------|
|                            | No schooling | Less than primary school | Primary school completed | Secondary school completed | Higher secondary school completed | College and above | Professional course/degree |               |
| <b>Place of residence</b>  |              |                          |                          |                            |                                   |                   |                            |               |
| Rural                      | 40.6         | 15.2                     | 15.5                     | 19.9                       | 4.9                               | 3.1               | 0.7                        | 19,945        |
| Urban                      | 18.1         | 9.1                      | 13.4                     | 30.0                       | 10.2                              | 13.7              | 5.6                        | 10,624        |
| <b>Age</b>                 |              |                          |                          |                            |                                   |                   |                            |               |
| Less than 60               | 28.6         | 12.0                     | 15.0                     | 25.6                       | 8.6                               | 7.7               | 2.5                        | 15,471        |
| More than 60               | 38.6         | 14.5                     | 14.8                     | 20.5                       | 4.6                               | 5.1               | 1.9                        | 15,098        |
| <b>Religion</b>            |              |                          |                          |                            |                                   |                   |                            |               |
| Hindu                      | 32.0         | 13.5                     | 15.0                     | 23.3                       | 7.0                               | 6.8               | 2.5                        | 22,483        |
| Muslim                     | 45.3         | 12.7                     | 14.3                     | 19.9                       | 3.7                               | 3.4               | 0.7                        | 3,555         |
| Christian                  | 39.4         | 13.3                     | 15.1                     | 22.6                       | 3.8                               | 4.2               | 1.7                        | 3,041         |
| Others                     | 33.6         | 11.2                     | 15.0                     | 24.4                       | 7.0                               | 7.4               | 1.5                        | 1,490         |
| <b>Caste</b>               |              |                          |                          |                            |                                   |                   |                            |               |
| Scheduled tribe            | 49.6         | 16.3                     | 12.7                     | 14.9                       | 2.8                               | 3.4               | 0.5                        | 5,303         |
| Scheduled caste            | 46.2         | 14.3                     | 13.4                     | 18.2                       | 4.9                               | 2.4               | 0.7                        | 5,056         |
| Other backward class       | 33.4         | 13.8                     | 16.8                     | 22.2                       | 6.3                               | 4.9               | 2.6                        | 11,537        |
| None of them               | 20.7         | 10.8                     | 13.4                     | 30.2                       | 9.4                               | 12.5              | 3.1                        | 8,673         |
| <b>MPCE quintile</b>       |              |                          |                          |                            |                                   |                   |                            |               |
| Poorest                    | 44.1         | 15.0                     | 13.9                     | 20.5                       | 3.5                               | 2.6               | 0.6                        | 5,976         |
| Poorer                     | 37.4         | 15.9                     | 15.8                     | 20.9                       | 4.7                               | 4.5               | 0.8                        | 6,103         |
| Middle                     | 33.4         | 13.1                     | 15.1                     | 24.1                       | 6.1                               | 6.1               | 2.1                        | 6,119         |
| Richer                     | 29.7         | 12.4                     | 15.9                     | 24.8                       | 8.1                               | 7.0               | 2.0                        | 6,227         |
| Richest                    | 22.9         | 9.7                      | 13.6                     | 24.9                       | 10.9                              | 12.2              | 5.9                        | 6,144         |
| <b>Total</b>               | <b>33.8</b>  | <b>13.3</b>              | <b>14.9</b>              | <b>23.0</b>                | <b>6.6</b>                        | <b>6.3</b>        | <b>2.2</b>                 | <b>30,569</b> |
| <b>Female</b>              |              |                          |                          |                            |                                   |                   |                            |               |
| <b>Place of residence</b>  |              |                          |                          |                            |                                   |                   |                            |               |
| Rural                      | 72.9         | 8.9                      | 8.7                      | 7.8                        | 1.1                               | 0.5               | 0.1                        | 26,589        |
| Urban                      | 36.3         | 9.2                      | 14.4                     | 22.2                       | 7.7                               | 6.9               | 3.3                        | 15,092        |
| <b>Age</b>                 |              |                          |                          |                            |                                   |                   |                            |               |
| Less than 60               | 52.5         | 9.3                      | 12.5                     | 15.8                       | 4.6                               | 3.7               | 1.7                        | 25,315        |
| More than 60               | 72.7         | 8.7                      | 7.9                      | 7.9                        | 1.4                               | 1.1               | 0.4                        | 16,366        |
| <b>Religion</b>            |              |                          |                          |                            |                                   |                   |                            |               |
| Hindu                      | 60.6         | 9.2                      | 10.4                     | 13.0                       | 3.2                               | 2.8               | 1.0                        | 30,490        |
| Muslim                     | 66.8         | 9.0                      | 11.1                     | 8.7                        | 0.8                               | 0.9               | 2.7                        | 5,112         |
| Christian                  | 52.2         | 7.9                      | 10.2                     | 11.9                       | 13.9                              | 2.9               | 1.0                        | 4,174         |
| Others                     | 55.7         | 7.4                      | 13.4                     | 15.7                       | 4.0                               | 3.5               | 0.3                        | 1,905         |
| <b>Caste</b>               |              |                          |                          |                            |                                   |                   |                            |               |
| Scheduled tribe            | 78.0         | 8.9                      | 4.8                      | 6.2                        | 1.1                               | 0.9               | 0.1                        | 7,206         |
| Scheduled caste            | 77.4         | 7.4                      | 6.5                      | 6.9                        | 1.1                               | 0.7               | 0.2                        | 6,990         |
| Other backward class       | 59.5         | 8.9                      | 11.8                     | 12.2                       | 3.7                               | 1.9               | 1.9                        | 15,647        |
| None of them               | 45.9         | 10.5                     | 13.3                     | 19.2                       | 4.7                               | 5.6               | 0.9                        | 11,838        |

Continued

Continued

| Background characteristics | Female       |                          |                          |                            |                                   |                   |                            | Number        |
|----------------------------|--------------|--------------------------|--------------------------|----------------------------|-----------------------------------|-------------------|----------------------------|---------------|
|                            | No schooling | Less than primary school | Primary school completed | Secondary school completed | Higher secondary school completed | College and above | Professional course/degree |               |
| <b>MPCE quintile</b>       |              |                          |                          |                            |                                   |                   |                            |               |
| Poorest                    | 75.3         | 7.5                      | 8.0                      | 6.4                        | 1.3                               | 1.0               | 0.5                        | 8,182         |
| Poorer                     | 66.4         | 9.6                      | 10.8                     | 10.1                       | 1.9                               | 1.1               | 0.2                        | 8,427         |
| Middle                     | 60.5         | 9.0                      | 11.3                     | 13.2                       | 3.6                               | 1.9               | 0.4                        | 8,418         |
| Richer                     | 53.6         | 10.4                     | 11.2                     | 16.1                       | 5.1                               | 3.0               | 0.6                        | 8,459         |
| Richest                    | 45.7         | 8.7                      | 11.9                     | 17.9                       | 4.6                               | 6.7               | 4.5                        | 8,195         |
| <b>Total</b>               | <b>60.9</b>  | <b>9.0</b>               | <b>10.6</b>              | <b>12.5</b>                | <b>3.3</b>                        | <b>2.6</b>        | <b>1.1</b>                 | <b>41,681</b> |
| <b>Total</b>               |              |                          |                          |                            |                                   |                   |                            |               |
| <b>Place of residence</b>  |              |                          |                          |                            |                                   |                   |                            |               |
| Rural                      | 59.1         | 11.6                     | 11.6                     | 13.0                       | 2.7                               | 1.6               | 0.4                        | 46,534        |
| Urban                      | 29.0         | 9.2                      | 14.0                     | 25.3                       | 8.7                               | 9.6               | 4.2                        | 25,716        |
| <b>Age</b>                 |              |                          |                          |                            |                                   |                   |                            |               |
| Less than 60*              | 43.6         | 10.3                     | 13.4                     | 19.5                       | 6.1                               | 5.2               | 2.0                        | 40,786        |
| More than 60               | 56.5         | 11.4                     | 11.2                     | 13.9                       | 2.9                               | 3.0               | 1.1                        | 31,464        |
| <b>Religion</b>            |              |                          |                          |                            |                                   |                   |                            |               |
| Hindu                      | 48.6         | 11.0                     | 12.3                     | 17.3                       | 4.8                               | 4.5               | 1.6                        | 52,973        |
| Muslim                     | 57.7         | 10.6                     | 12.5                     | 13.4                       | 2.1                               | 2.0               | 1.8                        | 8,667         |
| Christian                  | 47.4         | 9.9                      | 12.0                     | 15.9                       | 10.1                              | 3.4               | 1.2                        | 7,215         |
| Others                     | 46.1         | 9.0                      | 14.1                     | 19.5                       | 5.3                               | 5.2               | 0.8                        | 3,395         |
| <b>Caste</b>               |              |                          |                          |                            |                                   |                   |                            |               |
| Scheduled tribe            | 66.1         | 12.0                     | 8.1                      | 9.8                        | 1.8                               | 2.0               | 0.3                        | 12,509        |
| Scheduled caste            | 64.4         | 10.2                     | 9.4                      | 11.6                       | 2.7                               | 1.4               | 0.4                        | 12,046        |
| Other backward class       | 48.5         | 11.0                     | 13.9                     | 16.4                       | 4.8                               | 3.2               | 2.2                        | 27,184        |
| None of them               | 35.3         | 10.7                     | 13.3                     | 23.8                       | 6.7                               | 8.5               | 1.8                        | 20,511        |
| <b>MPCE quintile</b>       |              |                          |                          |                            |                                   |                   |                            |               |
| Poorest                    | 62.4         | 10.6                     | 10.4                     | 12.3                       | 2.2                               | 1.6               | 0.5                        | 14,158        |
| Poorer                     | 54.3         | 12.2                     | 12.9                     | 14.6                       | 3.1                               | 2.5               | 0.4                        | 14,530        |
| Middle                     | 49.1         | 10.7                     | 12.9                     | 17.8                       | 4.7                               | 3.7               | 1.1                        | 14,537        |
| Richer                     | 43.7         | 11.2                     | 13.2                     | 19.8                       | 6.4                               | 4.6               | 1.2                        | 14,686        |
| Richest                    | 35.9         | 9.1                      | 12.6                     | 20.9                       | 7.3                               | 9.0               | 5.1                        | 14,339        |
| <b>Total</b>               | <b>49.5</b>  | <b>10.8</b>              | <b>12.4</b>              | <b>16.9</b>                | <b>4.6</b>                        | <b>4.2</b>        | <b>1.6</b>                 | <b>72,250</b> |

\* Including spouse irrespective of age.

By religion, the proportion of adults with no formal education is the highest among Muslims (58%) and lowest among Christians (47%). The older adults from Scheduled tribe and Scheduled caste have a lower level of education than older adults from other caste groups. The percentage of older adults with no schooling decreases drastically with the increase in MPCE quintiles. In India, 62% of older adults from the poorest household consumption quintile did not attend any formal schooling as compared to 36% within the richest quintile. The educational attainment of men and women older adults is much different. Older adult men are more educated than their female counterparts. About 61% of older adult women did not have any formal schooling compared to 34% of men older adults.

State-wise educational attainment shows that more than half of the older adults do not have any formal education in the states of Telangana (66%), Bihar (66%), Rajasthan (64%), Jammu & Kashmir (63%), Chhattisgarh (61%), Uttar Pradesh (58%), Andhra Pradesh (57%), Arunachal Pradesh (56%), Jharkhand (55%), Haryana (54%), and Madhya Pradesh (53%). About a third of respondents in Kerala (36%), Puducherry (30%), and Goa (29%) have completed education up to the secondary level. Among all the states/UTs, Chandigarh (18%), Delhi (12%), and Manipur (12%) have the highest proportion of older adults with education up to college and above. Lakshadweep has the lowest percentage of older adults (0.9%) with a college-level education (Table 5.5).

**Table 5.5 Percent distribution of older adults\* age 45 and above by level of education, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | No schooling | Less than Primary school | Primary school completed | Secondary school completed | Higher secondary school completed | College and above | Professional course/ degree | Number        |
|---------------------------|--------------|--------------------------|--------------------------|----------------------------|-----------------------------------|-------------------|-----------------------------|---------------|
| <b>India</b>              | <b>49.5</b>  | <b>10.8</b>              | <b>12.4</b>              | <b>16.9</b>                | <b>4.6</b>                        | <b>4.2</b>        | <b>1.6</b>                  | <b>72,250</b> |
| <b>North</b>              |              |                          |                          |                            |                                   |                   |                             |               |
| Chandigarh                | 23.3         | 6.8                      | 13.0                     | 26.9                       | 6.1                               | 18.3              | 5.6                         | 1,026         |
| Delhi                     | 38.1         | 2.7                      | 13.4                     | 23.2                       | 8.9                               | 12.2              | 1.5                         | 1,319         |
| Haryana                   | 53.8         | 4.1                      | 12.7                     | 20.3                       | 3.5                               | 4.2               | 1.4                         | 1,898         |
| Himachal Pradesh          | 34.0         | 9.5                      | 20.4                     | 26.8                       | 3.4                               | 4.2               | 1.7                         | 1,388         |
| Jammu & Kashmir           | 63.0         | 2.3                      | 6.0                      | 21.5                       | 2.4                               | 3.9               | 0.9                         | 1,613         |
| Punjab                    | 43.4         | 5.2                      | 18.1                     | 25.9                       | 3.6                               | 2.8               | 1.0                         | 2,124         |
| Rajasthan                 | 64.1         | 7.2                      | 9.9                      | 11.0                       | 2.7                               | 3.9               | 1.2                         | 2,244         |
| Uttarakhand               | 45.8         | 6.3                      | 14.8                     | 19.3                       | 6.1                               | 7.3               | 0.4                         | 1,358         |
| <b>Central</b>            |              |                          |                          |                            |                                   |                   |                             |               |
| Chhattisgarh              | 60.7         | 11.2                     | 10.2                     | 11.2                       | 3.3                               | 2.6               | 0.9                         | 2,055         |
| Madhya Pradesh            | 52.8         | 12.8                     | 13.4                     | 11.2                       | 4.9                               | 4.2               | 0.7                         | 2,914         |
| Uttar Pradesh             | 58.3         | 5.4                      | 10.0                     | 15.0                       | 5.5                               | 4.6               | 1.2                         | 4,567         |
| <b>East</b>               |              |                          |                          |                            |                                   |                   |                             |               |
| Bihar                     | 65.5         | 4.6                      | 9.1                      | 14.0                       | 3.0                               | 3.4               | 0.4                         | 3,520         |
| Jharkhand                 | 55.1         | 8.6                      | 11.2                     | 16.6                       | 3.8                               | 4.1               | 0.7                         | 2,464         |
| Odisha                    | 45.7         | 17.7                     | 16.0                     | 14.3                       | 2.6                               | 3.0               | 0.8                         | 2,917         |
| West Bengal               | 42.2         | 15.2                     | 9.7                      | 22.2                       | 4.5                               | 5.6               | 0.5                         | 3,933         |
| <b>Northeast</b>          |              |                          |                          |                            |                                   |                   |                             |               |
| Arunachal Pradesh         | 56.1         | 5.7                      | 9.2                      | 19.2                       | 4.9                               | 4.0               | 0.8                         | 1,215         |
| Assam                     | 38.7         | 14.7                     | 11.0                     | 24.9                       | 5.7                               | 4.8               | 0.3                         | 2,366         |
| Manipur                   | 40.6         | 7.2                      | 7.5                      | 24.3                       | 7.1                               | 12.3              | 1.0                         | 1,369         |
| Meghalaya                 | 37.2         | 24.2                     | 11.7                     | 16.7                       | 4.6                               | 5.5               | 0.2                         | 969           |
| Mizoram                   | 14.1         | 33.0                     | 16.1                     | 27.7                       | 2.4                               | 5.8               | 0.9                         | 1,246         |
| Nagaland                  | 42.8         | 11.8                     | 13.5                     | 24.5                       | 4.0                               | 3.3               | 0.1                         | 1,316         |
| Tripura                   | 35.1         | 16.1                     | 16.3                     | 24.7                       | 4.5                               | 3.1               | 0.3                         | 1,195         |
| <b>West</b>               |              |                          |                          |                            |                                   |                   |                             |               |
| Dadra & Nagar Haveli      | 49.6         | 13.0                     | 11.2                     | 15.2                       | 4.3                               | 4.6               | 2.1                         | 1,090         |
| Daman & Diu               | 30.4         | 15.3                     | 21.4                     | 20.9                       | 5.9                               | 4.9               | 1.2                         | 991           |
| Goa                       | 27.5         | 14.6                     | 12.8                     | 29.0                       | 6.6                               | 7.3               | 2.3                         | 1,427         |
| Gujarat                   | 40.8         | 18.0                     | 15.6                     | 17.6                       | 2.7                               | 4.0               | 1.5                         | 2,341         |
| Maharashtra               | 39.9         | 15.6                     | 12.9                     | 19.7                       | 6.0                               | 4.5               | 1.4                         | 3,973         |
| <b>South</b>              |              |                          |                          |                            |                                   |                   |                             |               |
| Andaman & Nicobar Islands | 38.6         | 10.5                     | 17.2                     | 22.7                       | 6.5                               | 3.4               | 1.2                         | 1,244         |
| Andhra Pradesh            | 57.2         | 7.8                      | 15.8                     | 10.9                       | 3.5                               | 3.8               | 1.1                         | 2,679         |
| Karnataka                 | 46.4         | 13.9                     | 11.3                     | 14.5                       | 6.4                               | 2.9               | 4.5                         | 2,420         |
| Kerala                    | 9.2          | 19.5                     | 18.9                     | 36.0                       | 6.8                               | 5.6               | 4.0                         | 2,497         |
| Lakshadweep               | 22.3         | 19.1                     | 25.7                     | 26.1                       | 4.0                               | 0.9               | 1.9                         | 1,139         |
| Puducherry                | 31.2         | 8.0                      | 15.0                     | 29.8                       | 6.7                               | 6.2               | 3.2                         | 1,428         |
| Tamil Nadu                | 41.5         | 10.0                     | 18.4                     | 20.2                       | 4.7                               | 3.6               | 1.6                         | 3,530         |
| Telangana                 | 65.8         | 7.3                      | 8.8                      | 9.7                        | 3.3                               | 4.5               | 0.6                         | 2,475         |

\* Including spouse irrespective of age.



## 5.4 CASTE

Table 5.6 presents the distribution of older adults age 45 and above by caste in states and union territories of India. In Mizoram (98%), Lakshadweep (93%), Meghalaya (93%), Nagaland (89%) and Arunachal Pradesh (81%), the majority of the older adults belong to Scheduled tribe. A large proportion of the population in the states of Punjab (38%), West Bengal (30%), Tripura (29%), Uttar Pradesh (27%), and Himachal Pradesh (26%) belong to Scheduled caste. Additionally, the proportion of older adults belonging to other backward class is very high in all the south Indian states, such as Tamil Nadu (82%), Puducherry (74%), Karnataka (73%), Telangana (64%), Andhra Pradesh (53%), and Kerala (53%), and also in a few northern states such as Bihar (54%), Jharkhand (53%), and Madhya Pradesh (51%).

## 5.5 RELIGION

Table 5.6 also presents the percentage distribution of older adults according to their religion. The majority of older adults belong to the Hindu religion (82%) followed by Muslim (12%), Christian (3%), and Sikh (2%). The proportion of older adults belonging to Buddhist/Neo-Buddhist, Jain, and other religions is less than 1%. More than 90% of older adults from states such as Himachal Pradesh (97%), Chhattisgarh (96%), Rajasthan (94%), Daman & Diu (93%), Haryana (92%), Puducherry (91%), and Tamil Nadu (90%) are Hindu. Nearly all older adults in Lakshadweep (99%) and 71% in Jammu & Kashmir are Muslim. More than 69% of older adult in Punjab belongs to the Sikh religion. The majority of older adults from Mizoram (99%), Nagaland (90%), and Meghalaya (82%), half of the respondents from Arunachal Pradesh (54%), and a third of those from Andaman & Nicobar Islands (34%) are Christian.

## 5.6 MARITAL STATUS

Table 5.7 presents the marital status of older adults across the states and union territories of India. At the time of the survey, three-fourths of the total older adults (76%) were currently married, 22% were widowed, 1% was separated/ divorced/deserted, and almost 2% were either never married or in a live-in relationship. Except for Meghalaya (68%), Puducherry (65%), and Tamil Nadu (65%), in all the states/UTs, the proportion of currently married older adults all the states/UTs are more than 70%. These three states have a relatively higher proportion of older adults who are either widowed, divorced, separated, deserted, or never married or are in a live-in relationship. Across all the states/UTs, the proportion of older adults women who are currently married is the highest in Arunachal Pradesh (76%) followed by Bihar (75%), and Jammu & Kashmir (75%) and lowest in Puducherry (55%); while the proportion of women who are widowed is higher in Meghalaya (36%), Tamil Nadu (35%), Puducherry (35%), Telangana (35%), and Daman & Diu (35%).

## 5.7 MIGRATION

Table 5.8 presents the duration of stay in the current place of residence among older adults by sex and states/UTs. To understand the migration status of older adults, a question was asked about the number of years they have lived in the current town/village at the time of the survey. Almost half of the older adults said that they have been staying at their current place of residence for a duration exceeding 50 years or since birth—41% since birth, and 11% for more than 50 years. Around 34% have stayed in the same place for 25-49 years and 15% for less than 25 years. A similar pattern is observed across a majority of the states/UTs, except for Chandigarh, Delhi, and Tripura, where a lesser proportion of older adults have lived in their current place of residence since birth. In the states of Jammu & Kashmir (67%), Nagaland (66%), Manipur (64%), and Meghalaya (64%), more than three-fifths of the older adults have stayed in their current place of residence since birth. The pattern of the duration of stay in the current place of residence varies for men and women older adults. In the country overall, 69% of men older adults have lived in their current place of residence since birth as compared to 20% of women older adults. The scenario is almost the same in a large number of states/UTs with a few exceptions. For example, in Delhi (9%), Chandigarh (12%), and Kerala (22%), the majority of the men older adults have migrated to their current place of residence. In some states, such as Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Andaman & Nicobar Islands, an almost similar proportion of older adults women and men have resided in their current place of residence since birth.

## 5.8 LANGUAGE

Table 5.9 shows the languages spoken by older adults age 45 and above in the states/UTs of India. Hindi, the national language, is the predominant language (spoken by 34% of the population) across India with a specific state patterns. After Hindi, Bengali is the second most spoken (10%) language followed by Marathi (9%), Tamil (8%), and Telugu (7%) (Table 5.9). In the northern part (Delhi, Haryana, Himachal Pradesh, and Uttarakhand) and in the central part of India (Chhattisgarh, Madhya Pradesh, and Uttar Pradesh), Hindi is the universally spoken language. Languages like Punjabi, Oriya, Bengali, Gujarati, Marathi, Telugu, Kannada, Malayalam, Tamil, and Telugu exhibit state-specific dominance. Other state-specific local dialects are spoken mostly in the east and north-eastern states/UTs of India.

**Table 5.6 Percent distribution of older adults\* age 45 and above by caste and religion, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Caste           |                 |                      |              | Religion |        |           |      |                       |      | Total Adults |        |
|---------------------------|-----------------|-----------------|----------------------|--------------|----------|--------|-----------|------|-----------------------|------|--------------|--------|
|                           | Scheduled tribe | Scheduled caste | Other backward class | None of them | Hindu    | Muslim | Christian | Sikh | Buddhist/Neo-Buddhist | Jain |              | Other  |
| India                     | 8.5             | 19.2            | 45.5                 | 26.8         | 81.9     | 11.7   | 3.0       | 1.8  | 0.9                   | 0.3  | 0.5          | 72,250 |
| North                     |                 |                 |                      |              |          |        |           |      |                       |      |              |        |
| Chandigarh                | 1.0             | 20.3            | 17.7                 | 61.0         | 78.0     | 2.9    | 0.8       | 18.2 | 0.2                   | 0.0  | 0.0          | 1,026  |
| Delhi                     | 0.8             | 24.2            | 20.1                 | 55.0         | 76.5     | 16.9   | 1.1       | 4.5  | 0.0                   | 0.8  | 0.3          | 1,319  |
| Haryana                   | 0.2             | 21.7            | 30.3                 | 47.8         | 91.6     | 5.2    | 0.0       | 2.9  | 0.1                   | 0.1  | 0.1          | 1,898  |
| Himachal Pradesh          | 4.8             | 25.7            | 17.4                 | 52.1         | 97.2     | 0.3    | 0.1       | 1.7  | 0.6                   | 0.0  | 0.1          | 1,388  |
| Jammu & Kashmir           | 4.6             | 8.8             | 7.8                  | 78.8         | 27.8     | 71.1   | 0.3       | 0.8  | 0.0                   | 0.0  | 0.0          | 1,613  |
| Punjab                    | 1.4             | 38.2            | 19.1                 | 41.3         | 29.9     | 0.8    | 0.5       | 68.6 | 0.0                   | 0.0  | 0.2          | 2,124  |
| Rajasthan                 | 15.0            | 22.4            | 40.2                 | 22.5         | 93.7     | 3.3    | 0.0       | 1.6  | 0.0                   | 1.2  | 0.2          | 2,244  |
| Uttarakhand               | 4.5             | 20.1            | 16.1                 | 59.4         | 86.7     | 11.8   | 0.9       | 0.5  | 0.0                   | 0.1  | 0.0          | 1,358  |
| Central                   |                 |                 |                      |              |          |        |           |      |                       |      |              |        |
| Chhattisgarh              | 33.0            | 11.2            | 47.2                 | 8.7          | 96.3     | 1.5    | 1.2       | 0.2  | 0.4                   | 0.2  | 0.2          | 2,055  |
| Madhya Pradesh            | 14.3            | 15.5            | 51.2                 | 19.1         | 87.9     | 10.2   | 0.1       | 0.2  | 0.2                   | 1.1  | 0.2          | 2,914  |
| Uttar Pradesh             | 1.4             | 26.6            | 42.4                 | 29.7         | 86.1     | 13.1   | 0.0       | 0.3  | 0.1                   | 0.0  | 0.4          | 4,567  |
| East                      |                 |                 |                      |              |          |        |           |      |                       |      |              |        |
| Bihar                     | 2.6             | 21.5            | 53.7                 | 22.1         | 82.4     | 17.4   | 0.0       | 0.0  | 0.0                   | 0.0  | 0.2          | 3,520  |
| Jharkhand                 | 18.0            | 10.9            | 52.7                 | 18.4         | 80.2     | 11.9   | 4.7       | 0.3  | 0.3                   | 0.0  | 2.7          | 2,464  |
| Odisha                    | 26.7            | 18.7            | 35.3                 | 19.3         | 89.2     | 1.0    | 9.8       | 0.0  | 0.0                   | 0.0  | 0.0          | 2,917  |
| West Bengal               | 4.5             | 29.8            | 12.3                 | 53.5         | 80.3     | 17.6   | 0.2       | 0.0  | 0.0                   | 0.1  | 1.8          | 3,933  |
| Northeast                 |                 |                 |                      |              |          |        |           |      |                       |      |              |        |
| Arunachal Pradesh         | 80.7            | 4.9             | 1.9                  | 12.5         | 21.2     | 0.9    | 53.5      | 0.0  | 3.1                   | 0.0  | 21.3         | 1,215  |
| Assam                     | 14.9            | 9.2             | 39.0                 | 36.9         | 76.2     | 21.5   | 1.6       | 0.1  | 0.6                   | 0.0  | 0.1          | 2,366  |
| Manipur                   | 34.1            | 8.1             | 26.5                 | 31.3         | 45.3     | 7.9    | 32.8      | 0.0  | 0.2                   | 0.0  | 13.8         | 1,369  |
| Meghalaya                 | 92.9            | 3.6             | 0.3                  | 3.3          | 12.2     | 0.8    | 81.6      | 0.0  | 0.0                   | 0.0  | 5.4          | 969    |
| Mizoram                   | 98.4            | 0.6             | 0.5                  | 0.5          | 0.7      | 0.1    | 99.2      | 0.0  | 0.0                   | 0.0  | 0.0          | 1,246  |
| Nagaland                  | 89.3            | 5.0             | 0.4                  | 5.4          | 6.5      | 3.6    | 89.7      | 0.0  | 0.1                   | 0.0  | 0.0          | 1,316  |
| Tripura                   | 29.3            | 28.5            | 24.4                 | 17.8         | 89.1     | 0.2    | 3.7       | 0.0  | 6.8                   | 0.0  | 0.3          | 1,195  |
| West                      |                 |                 |                      |              |          |        |           |      |                       |      |              |        |
| Dadra & Nagar Haveli      | 61.7            | 1.4             | 18.5                 | 18.4         | 82.9     | 7.7    | 7.1       | 0.0  | 0.0                   | 0.0  | 2.4          | 1,090  |
| Daman & Diu               | 15.7            | 13.4            | 46.8                 | 24.1         | 93.4     | 2.8    | 3.1       | 0.0  | 0.0                   | 0.6  | 0.0          | 991    |
| Goa                       | 12.4            | 4.2             | 22.3                 | 61.1         | 77.0     | 5.3    | 17.4      | 0.2  | 0.0                   | 0.0  | 0.2          | 1,427  |
| Gujarat                   | 19.4            | 12.0            | 42.2                 | 26.5         | 88.9     | 9.8    | 0.9       | 0.1  | 0.0                   | 0.4  | 0.0          | 2,341  |
| Maharashtra               | 7.8             | 16.0            | 36.8                 | 39.5         | 79.6     | 11.4   | 0.7       | 0.1  | 7.1                   | 0.9  | 0.2          | 3,973  |
| South                     |                 |                 |                      |              |          |        |           |      |                       |      |              |        |
| Andaman & Nicobar Islands | 20.2            | 16.6            | 19.8                 | 43.5         | 58.5     | 7.8    | 33.6      | 0.0  | 0.0                   | 0.0  | 0.1          | 1,244  |
| Andhra Pradesh            | 6.3             | 19.1            | 53.0                 | 21.5         | 82.7     | 5.2    | 12.0      | 0.0  | 0.0                   | 0.2  | 0.0          | 2,679  |
| Karnataka                 | 4.0             | 13.2            | 73.4                 | 9.4          | 86.6     | 11.1   | 1.9       | 0.0  | 0.0                   | 0.4  | 0.0          | 2,420  |
| Kerala                    | 1.3             | 7.6             | 52.7                 | 38.4         | 58.8     | 18.5   | 22.7      | 0.0  | 0.0                   | 0.0  | 0.1          | 2,497  |
| Lakshadweep               | 93.1            | 1.6             | 4.5                  | 0.7          | 0.6      | 99.3   | 0.0       | 0.0  | 0.0                   | 0.0  | 0.1          | 1,139  |
| Puducherry                | 0.8             | 17.5            | 73.9                 | 7.8          | 91.3     | 3.9    | 4.8       | 0.0  | 0.0                   | 0.0  | 0.0          | 1,428  |
| Tamil Nadu                | 1.1             | 16.1            | 81.6                 | 1.2          | 90.3     | 3.3    | 6.2       | 0.0  | 0.0                   | 0.1  | 0.1          | 3,530  |
| Telangana                 | 5.9             | 18.1            | 64.1                 | 12.0         | 84.6     | 10.6   | 3.6       | 0.7  | 0.0                   | 0.1  | 0.3          | 2,475  |

\* Including spouse irrespective of age.

**Table 5.7 Percent distribution of older adults\* age 45 and above by marital status according to sex, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Male              |             |                               |            | Female        |                   |             |                               | Total      |               |                   |             |                               |            |               |
|---------------------------|-------------------|-------------|-------------------------------|------------|---------------|-------------------|-------------|-------------------------------|------------|---------------|-------------------|-------------|-------------------------------|------------|---------------|
|                           | Currently married | Widowed     | Divorced/ Separated/ Deserted | Others     | Number        | Currently married | Widowed     | Divorced/ Separated/ Deserted | Others     | Number        | Currently married | Widowed     | Divorced/ Separated/ Deserted | Others     | Number        |
| <b>India</b>              | <b>87.1</b>       | <b>10.1</b> | <b>0.8</b>                    | <b>2.0</b> | <b>30,569</b> | <b>67.3</b>       | <b>30.0</b> | <b>1.4</b>                    | <b>1.3</b> | <b>41,681</b> | <b>75.6</b>       | <b>21.7</b> | <b>1.1</b>                    | <b>1.6</b> | <b>72,250</b> |
| <b>North</b>              |                   |             |                               |            |               |                   |             |                               |            |               |                   |             |                               |            |               |
| Chandigarh                | 83.6              | 12.6        | 1.9                           | 2.0        | 452           | 73.1              | 24.6        | 0.9                           | 1.4        | 574           | 77.8              | 19.2        | 1.4                           | 1.7        | 1,026         |
| Delhi                     | 88.6              | 10.2        | 0.5                           | 0.8        | 599           | 74.9              | 24.3        | 0.1                           | 0.8        | 720           | 81.0              | 18.0        | 0.3                           | 0.8        | 1,319         |
| Haryana                   | 85.3              | 12.2        | 1.1                           | 1.4        | 792           | 66.9              | 32.4        | 0.6                           | 0.1        | 1,106         | 74.4              | 24.2        | 0.8                           | 0.6        | 1,898         |
| Himachal Pradesh          | 87.2              | 10.2        | 0.8                           | 1.7        | 562           | 68.4              | 29.8        | 1.4                           | 0.4        | 826           | 76.0              | 21.9        | 1.2                           | 0.9        | 1,388         |
| Jammu & Kashmir           | 85.1              | 11.8        | 0.7                           | 2.4        | 711           | 74.6              | 24.7        | 0.6                           | 0.1        | 902           | 79.1              | 19.1        | 0.6                           | 1.1        | 1,613         |
| Punjab                    | 80.3              | 15.6        | 1.6                           | 2.6        | 927           | 73.5              | 25.8        | 0.7                           | 0.0        | 1,197         | 76.4              | 21.4        | 1.1                           | 1.1        | 2,124         |
| Rajasthan                 | 90.9              | 8.0         | 0.4                           | 0.7        | 970           | 70.2              | 29.3        | 0.3                           | 0.1        | 1,274         | 79.0              | 20.2        | 0.3                           | 0.4        | 2,244         |
| Uttarakhand               | 86.6              | 10.8        | 1.0                           | 1.6        | 556           | 67.3              | 32.2        | 0.5                           | 0.0        | 802           | 75.2              | 23.4        | 0.7                           | 0.7        | 1,358         |
| <b>Central</b>            |                   |             |                               |            |               |                   |             |                               |            |               |                   |             |                               |            |               |
| Chhattisgarh              | 86.5              | 11.9        | 1.2                           | 0.4        | 906           | 68.4              | 29.0        | 2.2                           | 0.5        | 1,149         | 76.4              | 21.4        | 1.7                           | 0.5        | 2,055         |
| Madhya Pradesh            | 84.6              | 11.9        | 1.1                           | 2.5        | 1,324         | 74.2              | 24.6        | 0.9                           | 0.3        | 1,590         | 79.0              | 18.7        | 1.0                           | 1.3        | 2,914         |
| Uttar Pradesh             | 80.5              | 16.7        | 0.8                           | 2.1        | 2,081         | 70.7              | 28.3        | 0.9                           | 0.2        | 2,486         | 75.1              | 23.0        | 0.8                           | 1.0        | 4,567         |
| <b>East</b>               |                   |             |                               |            |               |                   |             |                               |            |               |                   |             |                               |            |               |
| Bihar                     | 86.9              | 12.1        | 0.1                           | 0.8        | 1,555         | 75.2              | 23.6        | 1.2                           | 0.0        | 1,965         | 80.4              | 18.5        | 0.7                           | 0.4        | 3,520         |
| Jharkhand                 | 89.0              | 9.5         | 0.4                           | 1.1        | 1,043         | 71.4              | 27.1        | 0.8                           | 0.7        | 1,421         | 78.8              | 19.7        | 0.6                           | 0.9        | 2,464         |
| Odisha                    | 87.9              | 9.6         | 1.1                           | 1.4        | 1,255         | 69.1              | 28.2        | 1.5                           | 1.2        | 1,662         | 77.2              | 20.2        | 1.3                           | 1.3        | 2,917         |
| West Bengal               | 89.3              | 7.8         | 0.5                           | 2.4        | 1,620         | 68.7              | 29.4        | 0.9                           | 1.1        | 2,313         | 77.2              | 20.5        | 0.8                           | 1.6        | 3,933         |
| <b>Northeast</b>          |                   |             |                               |            |               |                   |             |                               |            |               |                   |             |                               |            |               |
| Arunachal Pradesh         | 90.3              | 7.0         | 0.7                           | 2.0        | 552           | 76.4              | 21.9        | 1.3                           | 0.4        | 663           | 82.7              | 15.1        | 1.0                           | 1.2        | 1,215         |
| Assam                     | 90.8              | 7.0         | 0.9                           | 1.4        | 973           | 65.2              | 32.1        | 0.9                           | 1.9        | 1,393         | 75.5              | 21.9        | 0.9                           | 1.7        | 2,366         |
| Manipur                   | 88.2              | 9.1         | 1.1                           | 1.7        | 581           | 66.3              | 28.6        | 1.9                           | 3.3        | 788           | 75.5              | 20.4        | 1.5                           | 2.6        | 1,369         |
| Meghalaya                 | 87.0              | 7.6         | 1.1                           | 4.4        | 368           | 55.7              | 35.8        | 6.2                           | 2.3        | 601           | 67.6              | 25.1        | 4.3                           | 3.1        | 969           |
| Mizoram                   | 81.0              | 10.9        | 4.2                           | 4.0        | 563           | 68.6              | 23.3        | 4.0                           | 4.1        | 683           | 74.3              | 17.6        | 4.1                           | 4.0        | 1,246         |
| Nagaland                  | 87.7              | 7.7         | 2.1                           | 2.5        | 589           | 70.3              | 24.3        | 1.4                           | 4.0        | 727           | 77.9              | 17.1        | 1.7                           | 3.3        | 1,316         |
| Tripura                   | 91.1              | 7.6         | 0.6                           | 0.8        | 491           | 69.3              | 29.3        | 1.2                           | 0.3        | 704           | 78.1              | 20.5        | 0.9                           | 0.5        | 1,195         |
| <b>West</b>               |                   |             |                               |            |               |                   |             |                               |            |               |                   |             |                               |            |               |
| Dadra & Nagar Haveli      | 90.7              | 7.6         | 0.8                           | 0.9        | 475           | 73.0              | 24.8        | 2.0                           | 0.2        | 615           | 81.0              | 17.0        | 1.5                           | 0.5        | 1,090         |
| Daman & Diu               | 90.1              | 8.1         | 0.5                           | 1.3        | 410           | 61.2              | 34.7        | 1.7                           | 2.4        | 581           | 72.4              | 24.4        | 1.2                           | 2.0        | 991           |
| Goa                       | 90.1              | 6.6         | 0.5                           | 2.9        | 568           | 65.8              | 31.6        | 0.8                           | 1.9        | 859           | 75.5              | 21.6        | 0.7                           | 2.3        | 1,427         |
| Gujarat                   | 87.3              | 10.5        | 1.2                           | 1.1        | 989           | 67.1              | 30.7        | 1.6                           | 0.6        | 1,352         | 75.5              | 22.3        | 1.4                           | 0.8        | 2,341         |
| Maharashtra               | 90.3              | 8.2         | 0.7                           | 0.8        | 1,607         | 65.1              | 32.1        | 1.7                           | 1.1        | 2,366         | 75.2              | 22.5        | 1.3                           | 1.0        | 3,973         |
| <b>South</b>              |                   |             |                               |            |               |                   |             |                               |            |               |                   |             |                               |            |               |
| Andaman & Nicobar Islands | 86.9              | 8.7         | 2.1                           | 2.3        | 566           | 71.7              | 26.3        | 1.5                           | 0.5        | 678           | 78.6              | 18.3        | 1.7                           | 1.3        | 1,244         |
| Andhra Pradesh            | 90.5              | 7.5         | 0.8                           | 1.1        | 1,120         | 65.6              | 31.4        | 2.2                           | 0.8        | 1,559         | 76.1              | 21.4        | 1.6                           | 1.0        | 2,679         |
| Karnataka                 | 93.2              | 5.3         | 0.8                           | 0.8        | 973           | 62.4              | 33.6        | 1.7                           | 2.4        | 1,447         | 74.4              | 22.5        | 1.3                           | 1.7        | 2,420         |
| Kerala                    | 91.8              | 4.6         | 1.2                           | 2.4        | 991           | 63.8              | 32.1        | 2.0                           | 2.1        | 1,506         | 74.6              | 21.5        | 1.7                           | 2.2        | 2,497         |
| Lakshadweep               | 87.6              | 10.3        | 1.2                           | 1.0        | 446           | 63.9              | 32.3        | 3.0                           | 0.8        | 693           | 72.9              | 24.0        | 2.3                           | 0.9        | 1,139         |
| Puducherry                | 81.7              | 5.5         | 1.3                           | 11.5       | 552           | 54.7              | 34.8        | 2.9                           | 7.7        | 876           | 65.2              | 23.4        | 2.3                           | 9.1        | 1,428         |
| Tamil Nadu                | 79.5              | 8.9         | 1.8                           | 9.9        | 1,394         | 55.7              | 35.3        | 2.4                           | 6.5        | 2,136         | 65.2              | 24.8        | 2.2                           | 7.8        | 3,530         |
| Telangana                 | 87.4              | 11.1        | 1.0                           | 0.5        | 1,008         | 62.9              | 34.8        | 1.9                           | 0.4        | 1,467         | 72.9              | 25.1        | 1.6                           | 0.4        | 2,475         |

\* Including spouse irrespective of age.

**Table 5.8 Percent distribution of older adults\* age 45 and above by sex and duration of stay in the current place of residence, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory | Male        |           |             |                  | Female |             |           |             | Total            |        |             |           |             |                  |        |
|------------------------|-------------|-----------|-------------|------------------|--------|-------------|-----------|-------------|------------------|--------|-------------|-----------|-------------|------------------|--------|
|                        | Since birth | <25 years | 25-49 years | 50 years or more | Number | Since birth | <25 years | 25-49 years | 50 years or more | Number | Since birth | <25 years | 25-49 years | 50 years or more | Number |
| India                  | 69.3        | 10.2      | 13.2        | 7.3              | 30,569 | 19.6        | 18.9      | 48.7        | 12.8             | 41,681 | 40.5        | 15.2      | 33.8        | 10.5             | 72,250 |
| North                  |             |           |             |                  |        |             |           |             |                  |        |             |           |             |                  |        |
| Chandigarh             | 11.7        | 38.7      | 43.7        | 6.0              | 452    | 4.7         | 49.0      | 43.1        | 3.1              | 574    | 7.9         | 44.4      | 43.4        | 4.4              | 1,026  |
| Delhi                  | 8.5         | 35.9      | 48.2        | 7.4              | 599    | 2.4         | 45.8      | 48.4        | 3.3              | 720    | 5.2         | 41.4      | 48.3        | 5.2              | 1,319  |
| Haryana                | 60.4        | 9.3       | 18.1        | 12.3             | 792    | 1.1         | 16.1      | 66.3        | 16.5             | 1,106  | 25.2        | 13.3      | 46.7        | 14.8             | 1,898  |
| Himachal Pradesh       | 82.4        | 8.0       | 7.7         | 2.0              | 562    | 18.6        | 22.0      | 47.8        | 11.5             | 826    | 44.3        | 16.4      | 31.7        | 7.7              | 1,388  |
| Jammu & Kashmir        | 91.6        | 3.7       | 4.3         | 0.4              | 711    | 48.6        | 9.0       | 34.1        | 8.3              | 902    | 67.1        | 6.7       | 21.2        | 4.9              | 1,613  |
| Punjab                 | 71.7        | 7.6       | 13.3        | 7.5              | 927    | 10.4        | 21.8      | 56.0        | 11.8             | 1,197  | 36.8        | 15.7      | 37.6        | 10.0             | 2,124  |
| Rajasthan              | 77.2        | 9.6       | 11.0        | 2.2              | 970    | 18.0        | 14.9      | 55.1        | 12.0             | 1,274  | 43.2        | 12.6      | 36.4        | 7.8              | 2,244  |
| Uttarakhand            | 74.6        | 14.9      | 8.8         | 1.7              | 556    | 22.4        | 19.3      | 46.8        | 11.5             | 802    | 43.9        | 17.5      | 31.2        | 7.5              | 1,358  |
| Central                |             |           |             |                  |        |             |           |             |                  |        |             |           |             |                  |        |
| Chhattisgarh           | 77.2        | 9.4       | 10.8        | 2.6              | 906    | 22.4        | 13.3      | 55.7        | 8.6              | 1,149  | 46.6        | 11.6      | 35.9        | 5.9              | 2,055  |
| Madhya Pradesh         | 80.1        | 7.6       | 8.7         | 3.6              | 1,324  | 22.3        | 17.3      | 46.4        | 14.0             | 1,590  | 49.1        | 12.8      | 28.9        | 9.2              | 2,914  |
| Uttar Pradesh          | 83.7        | 5.2       | 6.6         | 4.5              | 2,081  | 9.1         | 12.3      | 60.9        | 17.7             | 2,486  | 43.1        | 9.1       | 36.2        | 11.7             | 4,567  |
| East                   |             |           |             |                  |        |             |           |             |                  |        |             |           |             |                  |        |
| Bihar                  | 87.8        | 3.3       | 5.0         | 4.0              | 1,555  | 11.8        | 9.7       | 60.5        | 18.0             | 1,965  | 45.3        | 6.9       | 36.0        | 11.8             | 3,520  |
| Jharkhand              | 80.4        | 7.2       | 9.1         | 3.4              | 1,043  | 12.7        | 16.1      | 56.5        | 14.8             | 1,421  | 41.1        | 12.3      | 36.6        | 10.0             | 2,464  |
| Odisha                 | 80.2        | 8.2       | 8.6         | 3.0              | 1,255  | 14.2        | 19.9      | 50.8        | 15.1             | 1,662  | 42.7        | 14.9      | 32.5        | 9.9              | 2,917  |
| West Bengal            | 54.5        | 7.6       | 22.9        | 15.0             | 1,620  | 12.9        | 20.8      | 51.5        | 14.8             | 2,313  | 30.0        | 15.3      | 39.8        | 14.9             | 3,933  |
| Northeast              |             |           |             |                  |        |             |           |             |                  |        |             |           |             |                  |        |
| Arunachal Pradesh      | 37.7        | 26.1      | 25.5        | 10.7             | 552    | 24.2        | 39.5      | 31.6        | 4.7              | 663    | 30.4        | 33.4      | 28.8        | 7.4              | 1,215  |
| Assam                  | 81.1        | 7.4       | 10.1        | 1.5              | 973    | 38.4        | 22.5      | 33.9        | 5.2              | 1,393  | 55.7        | 16.4      | 24.3        | 3.7              | 2,366  |
| Manipur                | 81.6        | 9.7       | 6.8         | 1.9              | 581    | 51.8        | 20.4      | 21.4        | 6.5              | 788    | 64.3        | 15.9      | 15.2        | 4.6              | 1,369  |
| Meghalaya              | 57.4        | 10.8      | 28.2        | 3.6              | 368    | 68.5        | 12.9      | 15.5        | 3.2              | 601    | 64.3        | 12.1      | 20.3        | 3.3              | 969    |
| Mizoram                | 40.5        | 27.6      | 26.3        | 5.7              | 563    | 38.0        | 33.5      | 25.0        | 3.5              | 683    | 39.2        | 30.8      | 25.6        | 4.5              | 1,246  |
| Nagaland               | 69.0        | 18.7      | 11.7        | 0.6              | 589    | 64.0        | 24.0      | 11.3        | 0.7              | 727    | 66.2        | 21.7      | 11.5        | 0.7              | 1,316  |
| Tripura                | 26.2        | 17.4      | 34.5        | 22.0             | 491    | 8.6         | 30.5      | 49.0        | 11.8             | 704    | 15.7        | 25.2      | 43.1        | 16.0             | 1,195  |
| West                   |             |           |             |                  |        |             |           |             |                  |        |             |           |             |                  |        |
| Dadra & Nagar Haveli   | 42.2        | 27.3      | 21.7        | 8.9              | 475    | 21.7        | 28.0      | 43.3        | 7.1              | 615    | 30.9        | 27.7      | 33.5        | 7.9              | 1,090  |
| Daman & Diu            | 63.9        | 24.3      | 8.4         | 3.4              | 410    | 43.6        | 20.5      | 28.1        | 7.8              | 581    | 51.4        | 22.0      | 20.5        | 6.1              | 991    |
| Goa                    | 48.9        | 23.5      | 19.4        | 8.3              | 568    | 9.6         | 36.3      | 42.4        | 11.7             | 859    | 25.3        | 31.2      | 33.2        | 10.3             | 1,427  |
| Gujarat                | 69.8        | 13.6      | 14.7        | 1.9              | 989    | 22.8        | 20.2      | 48.7        | 8.3              | 1,352  | 42.4        | 17.5      | 34.5        | 5.6              | 2,341  |
| Maharashtra            | 72.8        | 8.1       | 14.3        | 4.9              | 1,607  | 19.7        | 17.4      | 49.0        | 13.9             | 2,366  | 41.0        | 13.7      | 35.1        | 10.3             | 3,973  |

Continued

\* Including spouse irrespective of age.



**Table 5.9 Languages spoken by older adults\* age 45 and above, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Most spoken language (%) | Second most spoken language (%) | Number        |
|---------------------------|--------------------------|---------------------------------|---------------|
| <b>India</b>              | <b>Hindi (34)</b>        | <b>Bengali (10)</b>             | <b>72,250</b> |
| <b>North</b>              |                          |                                 |               |
| Chandigarh                | Hindi (59)               | Punjabi (35)                    | 1,026         |
| Delhi                     | Hindi (91)               | Punjabi (5)                     | 1,319         |
| Haryana                   | Hindi (96)               | Punjabi (3)                     | 1,898         |
| Himachal Pradesh          | Hindi (90)               | Other (6)                       | 1,388         |
| Jammu & Kashmir           | Kashmiri (66)            | Other (32)                      | 1,613         |
| Punjab                    | Punjabi (94)             | Hindi (5)                       | 2,124         |
| Rajasthan                 | Rajasthani (53)          | Hindi (40)                      | 2,244         |
| Uttarakhand               | Hindi (84)               | Other (13)                      | 1,358         |
| <b>Central</b>            |                          |                                 |               |
| Chhattisgarh              | Hindi (91)               | Other (8)                       | 2,055         |
| Madhya Pradesh            | Hindi (97)               | Other (1)                       | 2,914         |
| Uttar Pradesh             | Hindi (96)               | Others (3)                      | 4,567         |
| <b>East</b>               |                          |                                 |               |
| Bihar                     | Hindi (69)               | Other (29)                      | 3,520         |
| Jharkhand                 | Hindi (50)               | Others (39)                     | 2,464         |
| Odisha                    | Oriya (93)               | Telugu (4)                      | 2,917         |
| West Bengal               | Bengali (94)             | Other (3)                       | 3,933         |
| <b>Northeast</b>          |                          |                                 |               |
| Arunachal Pradesh         | Other (83)               | Hindi (5)                       | 1,215         |
| Assam                     | Assamese (44)            | Bengali (33)                    | 2,366         |
| Manipur                   | Manipuri (59)            | Others (40)                     | 1,369         |
| Meghalaya                 | Other (94)               | Bengali (3)                     | 969           |
| Mizoram                   | Other (99)               | Nepali (0.22)                   | 1,246         |
| Nagaland                  | Other (91)               | Bengali (5)                     | 1,316         |
| Tripura                   | Bengali (67)             | Other (29)                      | 1,195         |
| <b>West</b>               |                          |                                 |               |
| Dadra & Nagar Haveli      | Gujarati (41)            | Konkani (13)                    | 1,090         |
| Daman & Diu               | Gujarati (84)            | Hindi (6)                       | 991           |
| Goa                       | Konkani (76)             | Kannada (8)                     | 1,427         |
| Gujarat                   | Gujarati (88)            | Konkani (4)                     | 2,341         |
| Maharashtra               | Marathi (79)             | Hindi (12)                      | 3,973         |
| <b>South</b>              |                          |                                 |               |
| Andaman & Nicobar Islands | Others (27)              | Bengali (26)                    | 1,244         |
| Andhra Pradesh            | Telugu (90)              | Urdu (4)                        | 2,679         |
| Karnataka                 | Kannada (73)             | Urdu (10)                       | 2,420         |
| Kerala                    | Malayalam (99)           | Tamil (1)                       | 2,497         |
| Lakshadweep               | Other (60)               | Malayalam (40)                  | 1,139         |
| Puducherry                | Tamil (85)               | Telugu (7)                      | 1,428         |
| Tamil Nadu                | Tamil (94)               | Telugu (4)                      | 3,530         |
| Telangana                 | Telugu (83)              | Urdu (9)                        | 2,475         |

\* Including spouse irrespective of age.

### Key findings: demographics

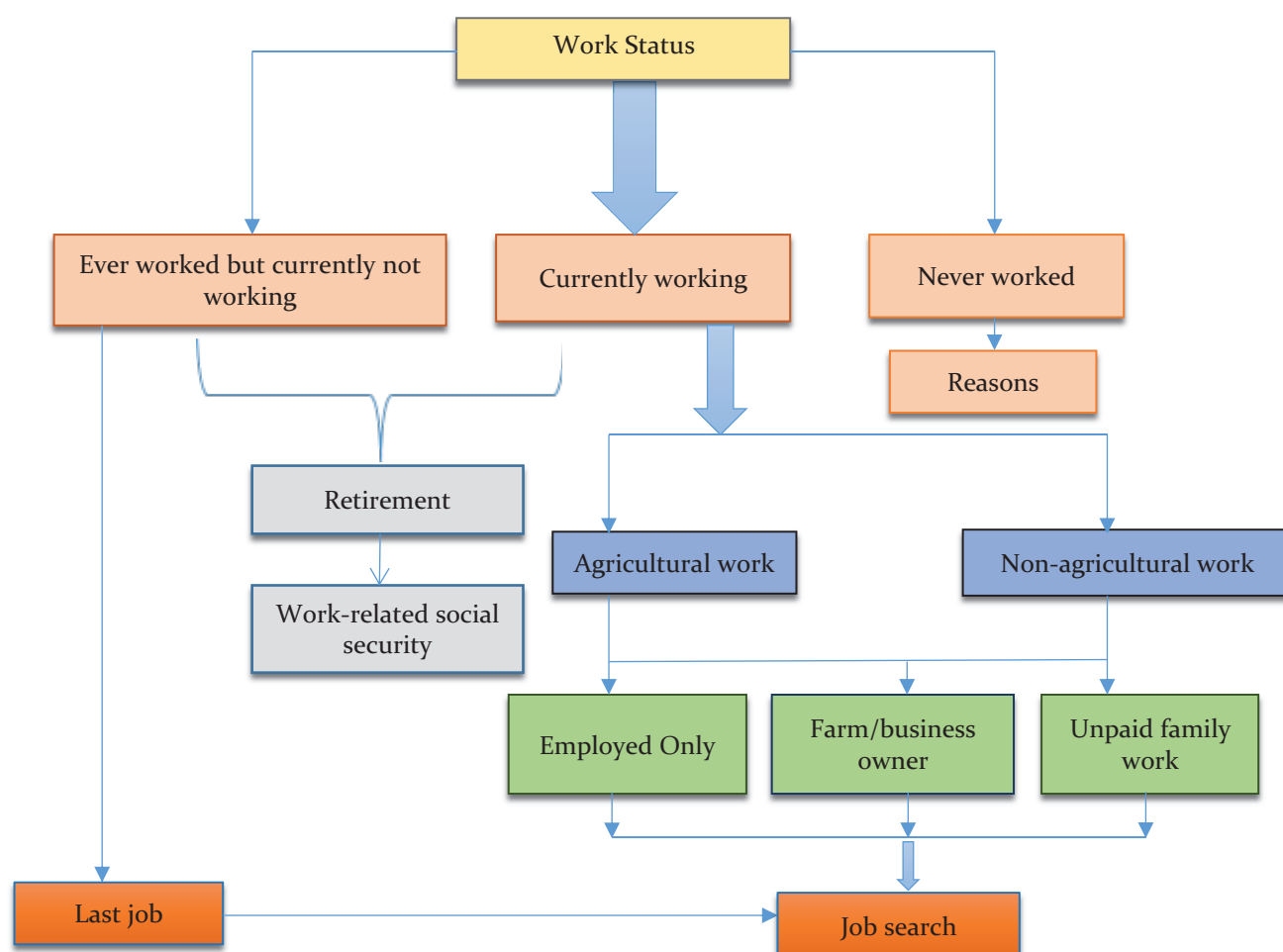
- In the LASI, overall in India, 72,250 individual respondents were interviewed (42% men and 58% women). Among them 46% are elderly (age 60 and above), 40% are older adults in the age group 45-59, and 9% are below the age of 45. Eleven percent of LASI age eligible individuals are 75 years and above.
- Among the women respondents, 15% are below age 45 years, while among the men, the percentage is lesser. The women respondents age less than 45 years are primarily the spouse of the age-eligible men respondents age 45 and above.
- Educational attainment is much lower among women older adults and among those from the rural areas in India. A higher share of the elderly age 60 and above across the states of India have had no education compared to older adults age 45-59 and above. Particularly in Telangana, Bihar, Rajasthan, Jammu & Kashmir, Chhattisgarh, Uttar Pradesh, Andhra Pradesh, Arunachal Pradesh, Jharkhand, Haryana, and Madhya Pradesh more than half the older adults have not had any formal education.
- Almost one in ten older adults age 45 and above are Scheduled tribe, 19% are Scheduled caste, 46% are from other backward class, and 27% belong to none of the above caste categories. The majority of the older adults age 45 and above are Hindu (82%) followed by Muslim (12%), Christian (3%), and others (3%).
- Nearly three-fourths of the older adults are currently married and 22% are widowed.
- Two-fifths (41%) of the older adults age 45 and above have been staying in their current place of their residence since birth whereas the majority of older adult women have migrated to their spousal residence.
- The most spoken languages in the country are Hindi (34%) and Bengali (10%).

## 6. WORK, RETIREMENT AND PENSION

Active ageing is the process of optimising opportunities for health, participation, and security to enhance the quality of life of people as they age. The word ‘active’ refers to one’s continuing participation in social, economic, cultural, spiritual, and civic affairs. Thus, engaging in the workforce is an important aspect of active aging. Opportunities for participation in labour activities, social protection, and security in old age, as well as positive dynamics in the workplace are key to achieving a productive ageing society. The overall wellbeing of older persons depends largely on their economic conditions and work participation, along with their social and health factors (WHO, 2002). Research shows that formal work is an important cushion against disability and a critical determinant of well-being, physical activity, and how active life is for the elderly. Furthermore, retirement from employment is a critical point in the life of a working individual. It brings about various socio-psychological and economic changes.

This chapter provides information on the work status, retirement, and pension of older adults age 45 years and above. In the LASI, information was collected on the following aspects of work: ever work and current work, reasons for not working, information related to current work such as type of work, main job and/or side job, characteristics of the main job, type of industry and occupation, job search details, and information about the last job of current non-workers. As regards social security related to work, information was also collected on social insurance coverage, provident fund coverage, and retirement benefits (including type of retirement, retirement age, work unit before retirement, reasons for early retirement, and types of pension benefits including lump sum amounts).

**Schematic representation of sections covered**



## 6.1 EVER AND CURRENT WORK

The Census of India 2011 defines ‘work’ as participation in any economically productive activity with or without compensation, wages, or profit. In LASI, work includes all types of labour, such as agricultural work, wage/salaried work, self-employed activities, and unpaid family business work. However, it excludes one’s own housework, irrespective of whether one receives wages. Older adults are classified into three categories: currently working (at the time of the survey), worked in the past but not currently working, and never worked (never engaged in any income-generating activities continuously for at least three months in their lifetime).

|                |                                                                                                                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Work         | LASI follows the census definition of work. Work refers to participation in any economically productive activity with or without compensation, wages, or profit. Unpaid helpers who assist in the operation of an economic activity on the household farm or in non-farm activities are also considered as workers. |
| • Ever work    | In LASI, ever work means that a person has worked continuously for at least three months in his or her lifetime. Work includes agricultural work, wage work, self-employed activities, and unpaid family business work.                                                                                             |
| • Current work | Current work refers to the work status of the respondent at the time of the survey. It includes those working at the time of the survey or those who are temporarily laid off, sick, or in training.                                                                                                                |

Table 6.1 presents the work status of older adults in India by selected background characteristics. Overall, in India, almost three-quarters (73%) of older adults age 45 and above have ever worked, and half of them (50%) are currently working. About three-fifths (62%) of the older adults age 45–59 and a little more than one-third (36%) of the elderly age 60 and above are currently working. The proportion of the elderly age 60 and above who are currently working is higher in rural areas (40%) than in urban areas (26%). Gender differences are notable in the current work status of older adults and their work-related characteristics: 70% of older adult men and 35% of older adult women age 45 and above are currently working; among elderly age 60 and above, 50% of men compared with 22% of women are currently working. By caste, the proportion of elderly age 60 and above currently working is the highest among the Scheduled tribe (48%), followed by the Scheduled caste (40%) and other backward classes (37%); and the proportion is lowest among those belonging to none of these caste/class groups. Current work participation of older adults varies inversely with the MPCE quintile.

Table 6.2 presents cross-state variations in the work status of older adults age 45 and above. A higher proportion of older adults are currently working in the states/UTs of Dadra & Nagar Haveli (68%), Karnataka (60%), and Chhattisgarh (60%). Similarly, there is a higher proportion of elderly age 60 and above who have worked in the past and are not currently working in the states/UTs of Daman & Diu (58%), Manipur (53%), and Gujarat (50%), whereas this proportion is comparatively lower in Arunachal Pradesh (14%), Jammu & Kashmir (27%), and Odisha (30%).

**Table 6.1 Percent distribution of older adults by work status according to age and background characteristics, India, LASI Wave 1, 2017-180**

| Background characteristics | Age 45-59*                         |                                              |              |        | Age ≥ 60          |                                              |              |        | Total             |                                              |              |        |        |
|----------------------------|------------------------------------|----------------------------------------------|--------------|--------|-------------------|----------------------------------------------|--------------|--------|-------------------|----------------------------------------------|--------------|--------|--------|
|                            | Currently working                  | Worked in the past but currently not working | Never worked | Number | Currently working | Worked in the past but currently not working | Never worked | Number | Currently working | Worked in the past but currently not working | Never worked | Number |        |
| Place of residence         |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | Rural                              | 66.4                                         | 9.2          | 24.4   | 25,809            | 39.9                                         | 37.8         | 22.2   | 20,725            | 53.9                                         | 22.8         | 23.4   | 46,534 |
|                            | Urban                              | 52.9                                         | 10.5         | 36.6   | 14,977            | 25.6                                         | 38.0         | 36.4   | 10,739            | 41.3                                         | 22.1         | 36.5   | 25,716 |
| Sex                        |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | Male                               | 91.5                                         | 6.2          | 2.3    | 15,471            | 50.9                                         | 45.3         | 3.8    | 15,098            | 70.4                                         | 26.5         | 3.1    | 30,569 |
|                            | Female                             | 44.2                                         | 11.6         | 44.2   | 25,315            | 22.0                                         | 31.1         | 46.8   | 16,366            | 35.0                                         | 19.7         | 45.3   | 41,681 |
| Marital status             |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | Currently married                  | 62.6                                         | 8.8          | 28.6   | 35,476            | 43.4                                         | 36.0         | 20.7   | 19,920            | 55.4                                         | 19.0         | 25.6   | 55,396 |
|                            | Widowed                            | 55.3                                         | 16.5         | 28.2   | 3,874             | 22.4                                         | 41.1         | 36.5   | 10,719            | 30.1                                         | 35.3         | 34.6   | 14,593 |
|                            | Divorced/Separated/Deserted/Others | 59.7                                         | 10.8         | 29.5   | 1,436             | 39.9                                         | 38.0         | 22.1   | 825               | 52.4                                         | 20.7         | 26.8   | 2,261  |
| Religion                   |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | Hindu                              | 63.5                                         | 9.7          | 26.8   | 29,936            | 36.0                                         | 38.6         | 25.4   | 23,037            | 50.8                                         | 23.0         | 26.2   | 52,973 |
|                            | Muslim                             | 52.2                                         | 9.6          | 38.2   | 4,936             | 35.2                                         | 32.3         | 32.6   | 3,731             | 44.7                                         | 19.7         | 35.7   | 8,667  |
|                            | Christian                          | 62.2                                         | 8.0          | 29.8   | 4,065             | 39.6                                         | 36.2         | 24.2   | 3,150             | 52.2                                         | 20.5         | 27.3   | 7,215  |
|                            | Others                             | 56.8                                         | 7.7          | 35.5   | 1,849             | 28.5                                         | 39.3         | 32.2   | 1,546             | 43.1                                         | 23.0         | 33.9   | 3,395  |
| Caste/tribe                |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | Scheduled tribe                    | 74.9                                         | 8.6          | 16.5   | 7,336             | 48.0                                         | 38.0         | 14.1   | 5,173             | 63.2                                         | 21.4         | 15.4   | 12,509 |
|                            | Scheduled caste                    | 66.2                                         | 10.2         | 23.7   | 6,906             | 40.0                                         | 39.0         | 21.0   | 5,140             | 54.3                                         | 23.2         | 22.5   | 12,046 |
|                            | Other backward class               | 62.8                                         | 9.8          | 27.4   | 15,298            | 36.6                                         | 37.9         | 25.5   | 11,886            | 50.9                                         | 22.6         | 26.5   | 27,184 |
|                            | None of the above                  | 52.5                                         | 9.2          | 38.3   | 11,246            | 27.7                                         | 37.1         | 35.2   | 9,265             | 40.7                                         | 22.4         | 36.9   | 20,511 |
| Education                  |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | No schooling                       | 60.9                                         | 11.2         | 27.9   | 16,322            | 34.0                                         | 37.3         | 28.7   | 16,889            | 46.8                                         | 24.8         | 28.3   | 33,211 |
|                            | Less than 5 years complete         | 67.0                                         | 10.0         | 23.0   | 4,273             | 38.7                                         | 37.9         | 23.5   | 3,781             | 53.3                                         | 23.5         | 23.2   | 8,054  |
|                            | 5-9 years complete                 | 60.5                                         | 8.2          | 31.3   | 10,892            | 39.6                                         | 32.8         | 27.7   | 6,017             | 52.4                                         | 17.7         | 29.9   | 16,909 |
|                            | 10 or more years complete          | 62.8                                         | 7.8          | 29.4   | 9,299             | 35.2                                         | 46.6         | 18.2   | 4,777             | 53.0                                         | 21.5         | 25.5   | 14,076 |
| MPCE quintile              |                                    |                                              |              |        |                   |                                              |              |        |                   |                                              |              |        |        |
|                            | Poorest                            | 64.6                                         | 9.3          | 26.1   | 7,674             | 35.5                                         | 39.8         | 24.7   | 6,484             | 50.6                                         | 24.0         | 25.5   | 14,158 |
|                            | Poorer                             | 61.5                                         | 10.5         | 28.0   | 8,053             | 35.9                                         | 37.5         | 26.6   | 6,477             | 49.5                                         | 23.2         | 27.3   | 14,530 |
|                            | Middle                             | 61.7                                         | 9.1          | 29.3   | 8,121             | 38.8                                         | 36.6         | 24.6   | 6,416             | 50.9                                         | 22.0         | 27.1   | 14,537 |
|                            | Richer                             | 60.6                                         | 10.3         | 29.1   | 8,516             | 36.2                                         | 36.9         | 27.0   | 6,170             | 49.6                                         | 22.3         | 28.1   | 14,686 |
|                            | Richest                            | 60.9                                         | 8.7          | 30.4   | 8,422             | 31.3                                         | 38.5         | 30.2   | 5,917             | 48.5                                         | 21.1         | 30.3   | 14,339 |
|                            | Total                              | 61.9                                         | 9.6          | 28.6   | 40,786            | 35.7                                         | 37.9         | 26.4   | 31,464            | 49.9                                         | 22.6         | 27.6   | 72,250 |

\* Including spouse irrespective of age.

**Table 6.2 Percent distribution of older adults by work status and age, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age 45-59*        |                                              |              |               |                   | Age ≥ 60                                     |              |               |                   |                                              | Total       |               |        |
|---------------------------|-------------------|----------------------------------------------|--------------|---------------|-------------------|----------------------------------------------|--------------|---------------|-------------------|----------------------------------------------|-------------|---------------|--------|
|                           | Currently working | Worked in the past but currently not working | Never worked | Number        | Currently working | Worked in the past but currently not working | Never worked | Number        | Currently working | Worked in the past but currently not working | Number      | Never worked  | Number |
| <b>India</b>              | <b>61.9</b>       | <b>9.6</b>                                   | <b>28.6</b>  | <b>40,786</b> | <b>35.7</b>       | <b>37.9</b>                                  | <b>26.4</b>  | <b>31,464</b> | <b>49.9</b>       | <b>22.6</b>                                  | <b>27.6</b> | <b>72,250</b> |        |
| <b>North</b>              |                   |                                              |              |               |                   |                                              |              |               |                   |                                              |             |               |        |
| Chandigarh                | 49.6              | 7.4                                          | 43.0         | 632           | 19.0              | 39.8                                         | 41.2         | 394           | 37.5              | 20.3                                         | 42.3        | 1,026         |        |
| Delhi                     | 48.1              | 6.7                                          | 45.3         | 824           | 21.6              | 36.4                                         | 42.1         | 495           | 38.0              | 17.9                                         | 44.1        | 1,319         |        |
| Haryana                   | 50.0              | 11.8                                         | 38.3         | 1,050         | 18.9              | 39.8                                         | 41.3         | 848           | 35.1              | 25.2                                         | 39.7        | 1,898         |        |
| Himachal Pradesh          | 73.4              | 10.6                                         | 16.0         | 767           | 40.5              | 45.2                                         | 14.3         | 621           | 57.8              | 27.0                                         | 15.2        | 1,388         |        |
| Jammu & Kashmir           | 30.4              | 4.2                                          | 65.5         | 882           | 15.1              | 26.8                                         | 58.1         | 731           | 22.9              | 15.3                                         | 61.9        | 1,613         |        |
| Punjab                    | 39.4              | 8.4                                          | 52.2         | 1,120         | 19.3              | 31.3                                         | 49.4         | 1,004         | 29.8              | 19.3                                         | 50.9        | 2,124         |        |
| Rajasthan                 | 63.5              | 14.7                                         | 21.8         | 1,166         | 31.9              | 47.0                                         | 21.2         | 1,078         | 47.7              | 30.8                                         | 21.5        | 2,244         |        |
| Uttarakhand               | 54.8              | 10.5                                         | 34.7         | 717           | 29.8              | 43.8                                         | 26.4         | 641           | 42.5              | 26.9                                         | 30.6        | 1,358         |        |
| <b>Central</b>            |                   |                                              |              |               |                   |                                              |              |               |                   |                                              |             |               |        |
| Chhattisgarh              | 73.5              | 11.1                                         | 15.4         | 1,275         | 38.2              | 48.4                                         | 13.4         | 780           | 59.9              | 25.4                                         | 14.7        | 2,055         |        |
| Madhya Pradesh            | 64.0              | 13.7                                         | 22.3         | 1,601         | 35.2              | 45.7                                         | 19.2         | 1,313         | 50.3              | 28.9                                         | 20.8        | 2,914         |        |
| Uttar Pradesh             | 55.6              | 7.4                                          | 36.9         | 2,398         | 32.9              | 35.0                                         | 32.1         | 2,169         | 44.4              | 21.0                                         | 34.6        | 4,567         |        |
| East                      |                   |                                              |              |               |                   |                                              |              |               |                   |                                              |             |               |        |
| Bihar                     | 55.9              | 6.7                                          | 37.4         | 1,712         | 36.0              | 33.9                                         | 30.1         | 1,808         | 45.2              | 21.4                                         | 33.5        | 3,520         |        |
| Jharkhand                 | 60.5              | 7.3                                          | 32.2         | 1,296         | 37.1              | 40.4                                         | 22.6         | 1,168         | 49.2              | 23.3                                         | 27.5        | 2,464         |        |
| Odisha                    | 61.3              | 4.0                                          | 34.7         | 1,680         | 37.3              | 30.2                                         | 32.5         | 1,237         | 50.7              | 15.6                                         | 33.7        | 2,917         |        |
| West Bengal               | 56.0              | 9.0                                          | 35.0         | 2,389         | 32.5              | 35.1                                         | 32.4         | 1,544         | 46.5              | 19.6                                         | 34.0        | 3,933         |        |
| <b>Northeast</b>          |                   |                                              |              |               |                   |                                              |              |               |                   |                                              |             |               |        |
| Arunachal Pradesh         | 62.5              | 4.4                                          | 33.1         | 897           | 40.1              | 13.7                                         | 46.2         | 318           | 57.1              | 6.6                                          | 36.3        | 1,215         |        |
| Assam                     | 57.4              | 6.7                                          | 36.0         | 1,550         | 30.4              | 34.9                                         | 34.8         | 816           | 47.7              | 16.8                                         | 35.5        | 2,366         |        |
| Manipur                   | 76.7              | 12.6                                         | 10.7         | 763           | 38.1              | 52.7                                         | 9.3          | 606           | 58.7              | 31.3                                         | 10.0        | 1,369         |        |
| Meghalaya                 | 73.1              | 6.4                                          | 20.6         | 557           | 35.3              | 33.3                                         | 31.4         | 412           | 57.1              | 17.7                                         | 25.2        | 969           |        |
| Mizoram                   | 68.3              | 9.0                                          | 22.7         | 715           | 32.1              | 45.8                                         | 22.2         | 531           | 52.0              | 25.5                                         | 22.5        | 1,246         |        |
| Nagaland                  | 60.3              | 9.6                                          | 30.1         | 708           | 43.8              | 35.7                                         | 20.5         | 608           | 52.2              | 22.4                                         | 25.4        | 1,316         |        |
| Tripura                   | 59.2              | 6.7                                          | 34.1         | 734           | 36.1              | 35.9                                         | 28.0         | 461           | 50.1              | 18.2                                         | 31.7        | 1,195         |        |
| <b>West</b>               |                   |                                              |              |               |                   |                                              |              |               |                   |                                              |             |               |        |
| Dadra & Nagar Haveli      | 76.8              | 10.3                                         | 12.9         | 639           | 54.6              | 34.3                                         | 11.1         | 451           | 68.2              | 19.6                                         | 12.2        | 1,090         |        |
| Daman & Diu               | 56.1              | 19.9                                         | 24.1         | 557           | 23.0              | 58.4                                         | 18.7         | 434           | 40.4              | 38.1                                         | 21.5        | 991           |        |
| Goa                       | 38.3              | 17.7                                         | 44.1         | 790           | 17.9              | 39.2                                         | 42.9         | 637           | 29.0              | 27.5                                         | 43.5        | 1,427         |        |
| Gujarat                   | 66.1              | 19.5                                         | 14.5         | 1,350         | 37.1              | 49.5                                         | 13.4         | 991           | 53.0              | 33.0                                         | 14.0        | 2,341         |        |
| Maharashtra               | 71.2              | 10.2                                         | 18.7         | 2,183         | 41.1              | 42.3                                         | 16.6         | 1,790         | 56.4              | 25.9                                         | 17.7        | 3,973         |        |
| <b>South</b>              |                   |                                              |              |               |                   |                                              |              |               |                   |                                              |             |               |        |
| Andaman & Nicobar Islands | 40.4              | 10.2                                         | 49.4         | 721           | 16.4              | 41.0                                         | 42.6         | 523           | 30.6              | 22.8                                         | 46.6        | 1,244         |        |
| Andhra Pradesh            | 67.1              | 11.9                                         | 21.1         | 1,574         | 45.6              | 36.1                                         | 18.3         | 1,105         | 58.1              | 22.1                                         | 19.9        | 2,679         |        |
| Karnataka                 | 70.9              | 8.8                                          | 20.3         | 1,416         | 44.4              | 34.4                                         | 21.3         | 1,004         | 60.2              | 19.1                                         | 20.7        | 2,420         |        |
| Kerala                    | 44.0              | 13.2                                         | 42.8         | 1,288         | 25.4              | 32.5                                         | 42.1         | 1,209         | 34.4              | 23.1                                         | 42.5        | 2,497         |        |
| Lakshadweep               | 31.2              | 3.8                                          | 65.0         | 637           | 10.7              | 35.3                                         | 54.1         | 502           | 21.4              | 18.8                                         | 59.8        | 1,139         |        |
| Puducherry                | 56.2              | 5.5                                          | 38.3         | 788           | 29.7              | 30.5                                         | 39.8         | 640           | 43.8              | 17.2                                         | 39.0        | 1,428         |        |
| Tamil Nadu                | 65.6              | 8.2                                          | 26.2         | 1,996         | 39.2              | 33.6                                         | 27.2         | 1,534         | 53.5              | 19.9                                         | 26.7        | 3,530         |        |
| Telangana                 | 71.8              | 11.0                                         | 17.1         | 1,414         | 43.3              | 40.4                                         | 16.3         | 1,061         | 59.1              | 24.1                                         | 16.8        | 2,475         |        |

\* Including spouse irrespective of age.



**Table 6.3 Percentage of older adults\* age 45 and above by work status and sex, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Male              |                                              |              |               | Female            |                                              |              |               |
|---------------------------|-------------------|----------------------------------------------|--------------|---------------|-------------------|----------------------------------------------|--------------|---------------|
|                           | Currently working | Worked in the past but currently not working | Never worked | Number        | Currently working | Worked in the past but currently not working | Never worked | Number        |
| <b>India</b>              | <b>70.4</b>       | <b>26.5</b>                                  | <b>3.1</b>   | <b>30,569</b> | <b>35.0</b>       | <b>19.7</b>                                  | <b>45.3</b>  | <b>41,681</b> |
| <b>North</b>              |                   |                                              |              |               |                   |                                              |              |               |
| Chandigarh                | 59.7              | 32.4                                         | 7.9          | 452           | 19.3              | 10.3                                         | 70.4         | 574           |
| Delhi                     | 68.1              | 30.7                                         | 1.2          | 599           | 13.7              | 7.6                                          | 78.8         | 720           |
| Haryana                   | 63.7              | 34.9                                         | 1.4          | 792           | 15.6              | 18.5                                         | 65.9         | 1,106         |
| Himachal Pradesh          | 67.7              | 30.6                                         | 1.7          | 562           | 51.2              | 24.6                                         | 24.3         | 826           |
| Jammu & Kashmir           | 49.7              | 32.4                                         | 18.0         | 711           | 2.6               | 2.3                                          | 95.1         | 902           |
| Punjab                    | 56.1              | 35.8                                         | 8.1          | 927           | 9.9               | 6.9                                          | 83.3         | 1,197         |
| Rajasthan                 | 66.9              | 31.2                                         | 1.9          | 970           | 33.6              | 30.5                                         | 35.9         | 1,274         |
| Uttarakhand               | 62.5              | 34.9                                         | 2.7          | 556           | 28.5              | 21.4                                         | 50.1         | 802           |
| <b>Central</b>            |                   |                                              |              |               |                   |                                              |              |               |
| Chhattisgarh              | 76.1              | 22.7                                         | 1.2          | 906           | 47.2              | 27.5                                         | 25.3         | 1,149         |
| Madhya Pradesh            | 67.3              | 27.8                                         | 4.9          | 1,324         | 35.5              | 29.9                                         | 34.6         | 1,590         |
| Uttar Pradesh             | 66.4              | 29.4                                         | 4.2          | 2,081         | 26.0              | 14.0                                         | 59.9         | 2,486         |
| <b>East</b>               |                   |                                              |              |               |                   |                                              |              |               |
| Bihar                     | 69.2              | 29.3                                         | 1.5          | 1,555         | 26.2              | 15.2                                         | 58.7         | 1,965         |
| Jharkhand                 | 69.4              | 29.7                                         | 0.9          | 1,043         | 34.5              | 18.6                                         | 46.8         | 1,421         |
| Odisha                    | 78.0              | 19.1                                         | 2.9          | 1,255         | 30.0              | 12.9                                         | 57.2         | 1,662         |
| West Bengal               | 70.2              | 25.5                                         | 4.3          | 1,620         | 29.8              | 15.4                                         | 54.8         | 2,313         |
| <b>Northeast</b>          |                   |                                              |              |               |                   |                                              |              |               |
| Arunachal Pradesh         | 68.4              | 6.9                                          | 24.8         | 552           | 47.6              | 6.4                                          | 46.0         | 663           |
| Assam                     | 76.8              | 20.2                                         | 3.0          | 973           | 27.9              | 14.5                                         | 57.7         | 1,393         |
| Manipur                   | 68.7              | 27.3                                         | 4.0          | 581           | 51.4              | 34.2                                         | 14.4         | 788           |
| Meghalaya                 | 69.4              | 14.7                                         | 15.9         | 368           | 49.6              | 19.5                                         | 30.9         | 601           |
| Mizoram                   | 62.8              | 31.0                                         | 6.3          | 563           | 42.9              | 20.9                                         | 36.2         | 683           |
| Nagaland                  | 62.0              | 29.4                                         | 8.6          | 589           | 44.7              | 17.0                                         | 38.2         | 727           |
| Tripura                   | 72.7              | 21.1                                         | 6.2          | 491           | 34.8              | 16.2                                         | 49.1         | 704           |
| <b>West</b>               |                   |                                              |              |               |                   |                                              |              |               |
| Dadra & Nagar Haveli      | 81.2              | 18.2                                         | 0.6          | 475           | 57.5              | 20.8                                         | 21.7         | 615           |
| Daman & Diu               | 54.0              | 44.2                                         | 1.8          | 410           | 31.8              | 34.3                                         | 33.9         | 581           |
| Goa                       | 55.0              | 36.0                                         | 9.0          | 568           | 11.7              | 21.9                                         | 66.4         | 859           |
| Gujarat                   | 69.1              | 28.9                                         | 2.0          | 989           | 41.6              | 35.9                                         | 22.6         | 1,352         |
| Maharashtra               | 69.8              | 28.7                                         | 1.5          | 1,607         | 47.5              | 24.0                                         | 28.5         | 2,366         |
| <b>South</b>              |                   |                                              |              |               |                   |                                              |              |               |
| Andaman & Nicobar Islands | 53.3              | 36.3                                         | 10.3         | 566           | 11.8              | 11.5                                         | 76.7         | 678           |
| Andhra Pradesh            | 76.6              | 21.5                                         | 2.0          | 1,120         | 44.7              | 22.5                                         | 32.8         | 1,559         |
| Karnataka                 | 81.9              | 17.6                                         | 0.5          | 973           | 46.4              | 20.0                                         | 33.7         | 1,447         |
| Kerala                    | 62.6              | 33.4                                         | 4.0          | 991           | 16.8              | 16.7                                         | 66.5         | 1,506         |
| Lakshadweep               | 48.8              | 42.4                                         | 8.8          | 446           | 4.6               | 4.4                                          | 91.0         | 693           |
| Puducherry                | 71.4              | 27.7                                         | 1.0          | 552           | 26.1              | 10.6                                         | 63.4         | 876           |
| Tamil Nadu                | 71.7              | 24.9                                         | 3.4          | 1,394         | 41.5              | 16.5                                         | 41.9         | 2,136         |
| Telangana                 | 72.8              | 23.6                                         | 3.6          | 1,008         | 49.7              | 24.5                                         | 25.8         | 1,467         |

\* Including spouse irrespective of age.

Table 6.3 presents the variation in the percent distribution of older adult men and women based on work status across states/UTs. Work participation among older adult women age 45 and above is much higher in the states/UTs of Dadra & Nagar Haveli (58%), Manipur (51%), Himachal Pradesh (51%), and Telangana (50%), while it is lower in Jammu & Kashmir (3%), Lakshadweep (5%), Punjab (10%), and Goa (12%).

**Figure 6.1 Percent distribution of older adults by work status according to age, India, LASI Wave 1, 2017-18**

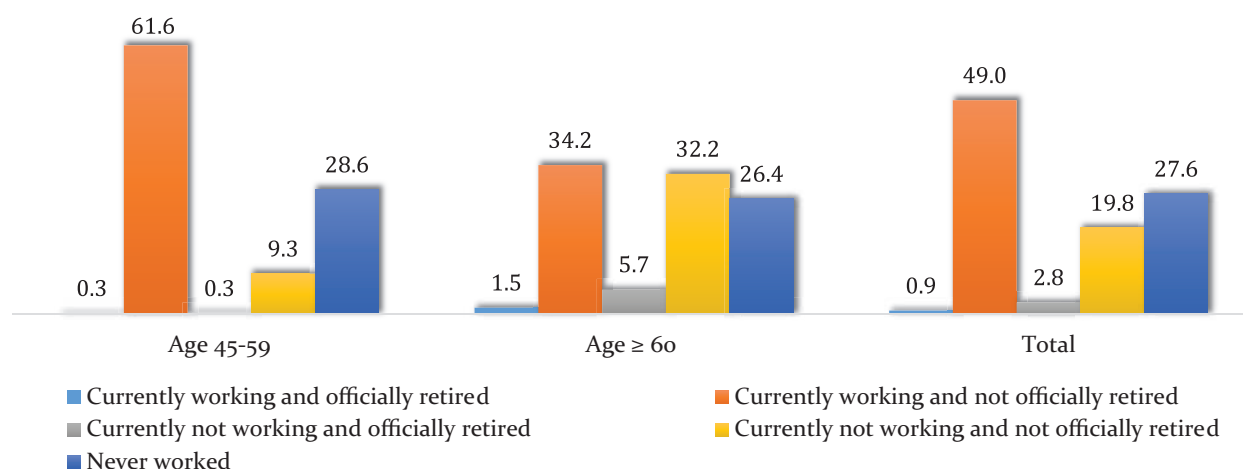


Figure 6.1 compares the percent distribution of older adults age 45–59 and the elderly age 60 and above in India by work status according to age. Among older adults age 45–59, 62% are currently working, and 9% (who have ever worked) are neither currently working nor officially retired in India. Among the elderly age 60 and above, 34% are currently working, followed by 32% who are neither working currently nor officially retired. A very small proportion of older adults (1%) age 45 and above in India continue to work after retirement as well.

## 6.2 MAIN JOB AND SIDE JOB

Information on current workforce participation of older adults by type of main job is presented in this section. The main jobs are classified as follows: farm/fishery/forestry owner, agricultural labourer, business owner, self-employed, wage/salaried worker, and non-paid family worker.

|                                |                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • <b>Main job</b>              | Main job is defined as a paid job at which a person works for the longest hours.                                                                                                                                                                                                                                                         |
| • <b>Wage/salaried workers</b> | Wage/salaried workers are persons working on another's non-agricultural farm or non-farm enterprise (both household and non-household and in the public or private sector) who receive salary or wages.                                                                                                                                  |
| • <b>Self-employed</b>         | Self-employed includes two categories of workers: own account worker and non-agricultural business owner. Own account worker refers to an individual who works for him/herself, without employees. Non-agricultural business owner includes entities with one or more employees, wherein the business entity is owned by the respondent. |
| • <b>Side job</b>              | Side job is defined as any job other than the respondent's main job.                                                                                                                                                                                                                                                                     |
| • <b>Occupation</b>            | Occupation refers to a specific task or set of tasks with which a person is engaged. LASI follows the abridged version of the National Classification of Occupation, 2015 ( <a href="http://www.ncs.gov.in">www.ncs.gov.in</a> ).                                                                                                        |
| • <b>Industry</b>              | An industry refers to the type of firm for which a person works. LASI follows the abridged version of the National Classification of Industry, 2015 ( <a href="http://www.mospi.nic.in">www.mospi.nic.in</a> ).                                                                                                                          |

## 6.2.1 Type of main job

More than half of the older adults age 45 and above are engaged in agricultural and allied activities (56%), while 17% are self-employed. In India, more than a fourth (27%) of older adults age 45 and above are engaged in wage/salaried work. Among the elderly age 60 and above, the majority are engaged in agricultural and allied activities (65%), less than one-fifth (19%) are engaged in wage/salaried work, and 17% are self-employed (Figure 6.2).

**Figure 6.2 Percent distribution of older adults by type of main job, India, LASI Wave 1, 2017-18**

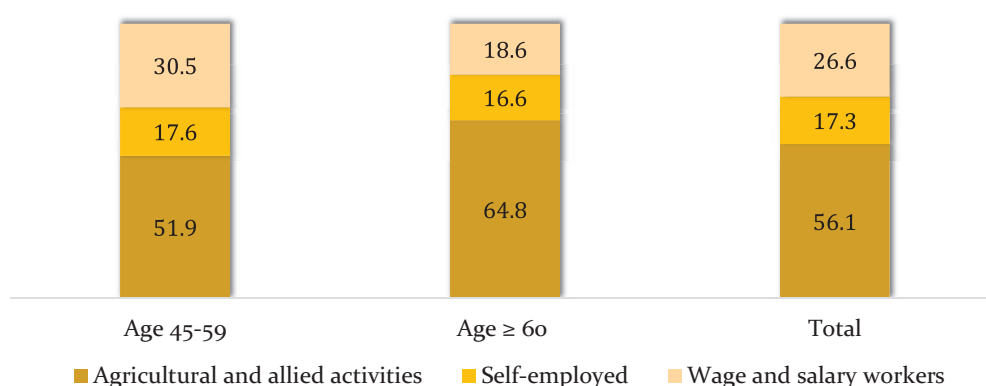


Figure 6.3 presents the percent distribution of currently working older adults by type of main job according to sex and residence. Overall, in India, 37% and 14% of older adult men age 45 and above are engaged in farm/fishery/forestry (own/family) and as agricultural labourers, respectively. In rural areas, 47% and 25% of older adults age 45 and above are engaged in farm/fishery/forestry (own/family) and as agricultural labourers, respectively. Half of the older adults in urban areas (51%) are engaged in wage/salaried work, followed by small business, that is, own account work (28%).

**Figure 6.3 Percent distribution of currently working older adults age 45 and above by type of main job according to sex and place of residence, India, LASI Wave 1, 2017-18**

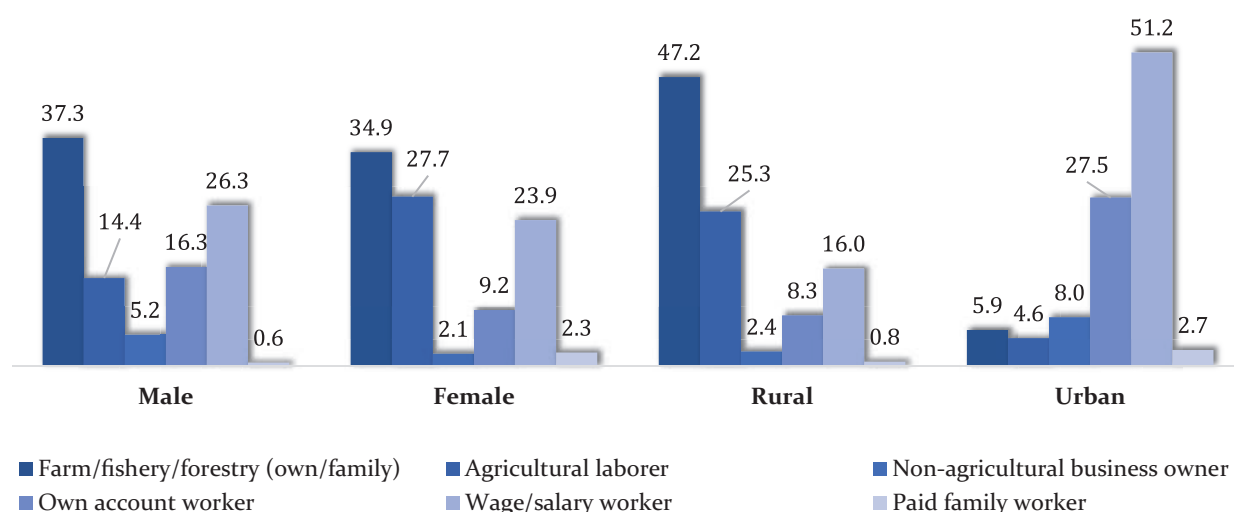


Table 6.4 presents the percent distribution of currently working older adults by type of main job according to their background characteristics. Most older adults age 45 and above are engaged in agricultural and allied activities (63% of women, and 52% of men). Regardless of age, the proportion of women engaged in agricultural and allied activities is higher than that of their male counterparts; the proportion of men who are self-employed is higher than that of their female counterparts. By caste, older adults age 45 and above belonging to Scheduled tribe (76%) and Scheduled caste (59%) mostly engage in agricultural and allied activities, followed by those belonging to other backward class (55%).

It is also observed that, as the level of education and MPCE quintile increases, there is a decrease in the proportion of older adults age 45 and above engaged in agricultural and allied activities and an increase in the proportion of self-employed and those in wage/salaried work.

**Table 6.4 Percent distribution of currently working older adults by type of main job according to age and background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics         | Age 45-59*                         |               |                         |               | Age ≥ 60                           |               |                         |               | Total                              |               |                         |               |
|------------------------------------|------------------------------------|---------------|-------------------------|---------------|------------------------------------|---------------|-------------------------|---------------|------------------------------------|---------------|-------------------------|---------------|
|                                    | Agricultural and allied activities | Self-employed | Wage and salary workers | Number        | Agricultural and allied activities | Self-employed | Wage and salary workers | Number        | Agricultural and allied activities | Self-employed | Wage and salary workers | Number        |
| <b>Place of residence</b>          |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Rural                              | 70.0                               | 10.8          | 19.3                    | 16,698        | 77.1                               | 10.8          | 12.2                    | 7,951         | 72.5                               | 10.8          | 16.8                    | 24,649        |
| Urban                              | 7.6                                | 34.4          | 58.0                    | 7,620         | 18.8                               | 38.7          | 42.5                    | 2,687         | 10.5                               | 35.5          | 53.9                    | 10,307        |
| <b>Sex</b>                         |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Male                               | 45.4                               | 22.5          | 32.1                    | 13,859        | 62.3                               | 19.6          | 18.1                    | 7,237         | 51.7                               | 21.4          | 26.9                    | 21,096        |
| Female                             | 60.0                               | 11.6          | 28.5                    | 10,459        | 70.0                               | 10.5          | 19.5                    | 3,401         | 62.6                               | 11.3          | 26.1                    | 13,860        |
| <b>Marital status</b>              |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Currently married                  | 52.3                               | 17.7          | 30.0                    | 21,345        | 66.6                               | 16.9          | 16.5                    | 8,092         | 56.5                               | 17.5          | 26.1                    | 29,437        |
| Widowed                            | 51.2                               | 17.5          | 31.3                    | 2,080         | 60.4                               | 15.3          | 24.4                    | 2,256         | 56.4                               | 16.2          | 27.4                    | 4,336         |
| Divorced/Separated/Deserted/Others | 44.0                               | 15.1          | 41.0                    | 893           | 50.2                               | 22.5          | 27.3                    | 290           | 45.7                               | 17.1          | 37.2                    | 1,183         |
| <b>Religion</b>                    |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Hindu                              | 54.5                               | 16.0          | 29.6                    | 18,391        | 66.3                               | 15.5          | 18.2                    | 8,016         | 58.3                               | 15.8          | 25.9                    | 26,407        |
| Muslim                             | 31.1                               | 32.7          | 36.3                    | 2,188         | 54.3                               | 25.9          | 19.8                    | 1,007         | 39.1                               | 30.3          | 30.6                    | 3,195         |
| Christian                          | 51.8                               | 10.3          | 37.9                    | 2,702         | 60.7                               | 12.4          | 27.0                    | 1,196         | 54.7                               | 11.0          | 34.3                    | 3,898         |
| Others                             | 50.6                               | 21.0          | 28.4                    | 1,037         | 66.1                               | 18.0          | 15.9                    | 419           | 55.6                               | 20.0          | 24.4                    | 1,456         |
| <b>Caste/tribe</b>                 |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Scheduled tribe                    | 73.6                               | 6.5           | 19.9                    | 5,085         | 81.1                               | 6.8           | 12.1                    | 2,170         | 76.1                               | 6.6           | 17.3                    | 7,255         |
| Scheduled caste                    | 53.9                               | 14.6          | 31.5                    | 4,362         | 68.8                               | 10.7          | 20.5                    | 1,907         | 58.9                               | 13.3          | 27.8                    | 6,269         |
| Other backward class               | 50.8                               | 18.3          | 30.9                    | 9,257         | 64.1                               | 18.1          | 17.8                    | 4,247         | 55.1                               | 18.2          | 26.6                    | 13,504        |
| None of the above                  | 41.9                               | 24.4          | 33.7                    | 5,614         | 54.1                               | 24.3          | 21.7                    | 2,314         | 45.8                               | 24.4          | 29.9                    | 7,928         |
| <b>Education</b>                   |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| No schooling                       | 67.8                               | 11.6          | 20.6                    | 9,634         | 73.4                               | 10.6          | 16.0                    | 5,550         | 70.0                               | 11.2          | 18.9                    | 15,184        |
| Less than 5 years complete         | 58.0                               | 17.7          | 24.3                    | 2,753         | 63.1                               | 20.5          | 16.4                    | 1,402         | 59.8                               | 18.7          | 21.5                    | 4,155         |
| 5-9 years complete                 | 46.6                               | 23.1          | 30.3                    | 6,264         | 58.4                               | 23.1          | 18.5                    | 2,269         | 50.1                               | 23.1          | 26.9                    | 8,533         |
| 10 or more years complete          | 24.1                               | 23.5          | 52.4                    | 5,667         | 42.4                               | 27.1          | 30.5                    | 1,417         | 28.4                               | 24.3          | 47.3                    | 7,084         |
| <b>MPCE quintile</b>               |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Poorest                            | 54.9                               | 15.7          | 29.3                    | 4,799         | 66.0                               | 14.8          | 19.3                    | 2,287         | 58.7                               | 15.4          | 25.9                    | 7,086         |
| Poorer                             | 54.6                               | 17.8          | 27.6                    | 4,859         | 65.5                               | 16.5          | 18.0                    | 2,290         | 58.3                               | 17.4          | 24.3                    | 7,149         |
| Middle                             | 53.6                               | 18.8          | 27.6                    | 4,842         | 62.3                               | 18.2          | 19.5                    | 2,206         | 56.7                               | 18.6          | 24.7                    | 7,048         |
| Richer                             | 53.7                               | 15.8          | 30.6                    | 5,026         | 64.2                               | 17.4          | 18.4                    | 2,085         | 57.1                               | 16.3          | 26.6                    | 7,111         |
| Richest                            | 42.2                               | 20.0          | 37.8                    | 4,792         | 66.9                               | 16.1          | 17.1                    | 1,770         | 48.8                               | 19.0          | 32.2                    | 6,562         |
| <b>Total</b>                       | <b>51.9</b>                        | <b>17.6</b>   | <b>30.5</b>             | <b>24,318</b> | <b>64.8</b>                        | <b>16.6</b>   | <b>18.6</b>             | <b>10,638</b> | <b>56.1</b>                        | <b>17.3</b>   | <b>26.6</b>             | <b>34,956</b> |

\* Including spouse irrespective of age.

Table 6.5 shows state-wise differentials of currently working older adults by type of main job. In almost all the states/UTs, a larger proportion of elderly workers are engaged in agricultural and allied activities than their younger counterparts. In Nagaland (90%), Himachal Pradesh (81%), Chhattisgarh (77%), and Jharkhand (76%), more than three-fourths of the elderly are engaged in agricultural and allied activities. However, in Delhi (59%), Jammu & Kashmir (41%), and Goa (38%), a sizeable proportion of elderly workers are self-employed, and two-thirds of the elderly in Chandigarh (66%) are engaged as salaried workers.

**Table 6.5 Percent distribution of currently working older adults by type of main job according to age, states/ UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age 45-59*                         |               |                         |               | Age ≥ 60                           |               |                         |               | Total                              |               |                         |               |
|---------------------------|------------------------------------|---------------|-------------------------|---------------|------------------------------------|---------------|-------------------------|---------------|------------------------------------|---------------|-------------------------|---------------|
|                           | Agricultural and allied activities | Self-employed | Wage and salary workers | Number        | Agricultural and allied activities | Self-employed | Wage and salary workers | Number        | Agricultural and allied activities | Self-employed | Wage and salary workers | Number        |
| <b>India</b>              | <b>51.9</b>                        | <b>17.6</b>   | <b>30.5</b>             | <b>24,318</b> | <b>64.8</b>                        | <b>16.6</b>   | <b>18.6</b>             | <b>10,638</b> | <b>56.1</b>                        | <b>17.3</b>   | <b>26.6</b>             | <b>34,956</b> |
| <b>North</b>              |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Chandigarh                | 1.7                                | 31.3          | 67.0                    | 319           | 1.6                                | 32.8          | 65.6                    | 75            | 1.7                                | 31.6          | 66.8                    | 394           |
| Delhi                     | 1.4                                | 42.3          | 56.3                    | 404           | 1.6                                | 59.0          | 39.5                    | 108           | 1.5                                | 45.8          | 52.7                    | 512           |
| Haryana                   | 43.6                               | 19.4          | 37.0                    | 542           | 58.3                               | 26.2          | 15.5                    | 175           | 47.4                               | 21.2          | 31.4                    | 717           |
| Himachal Pradesh          | 68.0                               | 6.5           | 25.4                    | 559           | 81.3                               | 8.9           | 9.8                     | 259           | 72.4                               | 7.3           | 20.2                    | 818           |
| Jammu & Kashmir           | 30.7                               | 30.1          | 39.2                    | 277           | 40.9                               | 41.0          | 18.1                    | 125           | 34.0                               | 33.6          | 32.5                    | 402           |
| Punjab                    | 41.0                               | 29.4          | 29.7                    | 469           | 52.5                               | 27.8          | 19.7                    | 215           | 44.5                               | 28.9          | 26.6                    | 684           |
| Rajasthan                 | 58.3                               | 15.8          | 25.9                    | 754           | 68.6                               | 15.1          | 16.4                    | 361           | 61.7                               | 15.6          | 22.7                    | 1,115         |
| Uttarakhand               | 42.0                               | 19.9          | 38.1                    | 388           | 59.8                               | 21.6          | 18.6                    | 191           | 48.1                               | 20.5          | 31.4                    | 579           |
| <b>Central</b>            |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Chhattisgarh              | 71.3                               | 8.7           | 20.0                    | 945           | 76.8                               | 9.7           | 13.6                    | 307           | 72.7                               | 8.9           | 18.4                    | 1,252         |
| Madhya Pradesh            | 58.3                               | 15.7          | 26.0                    | 1,042         | 70.9                               | 12.3          | 16.8                    | 472           | 62.5                               | 14.6          | 22.9                    | 1,514         |
| Uttar Pradesh             | 64.2                               | 13.2          | 22.5                    | 1,314         | 69.4                               | 13.9          | 16.7                    | 726           | 66.1                               | 13.5          | 20.4                    | 2,040         |
| <b>East</b>               |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Bihar                     | 60.7                               | 15.5          | 23.9                    | 938           | 73.8                               | 12.9          | 13.3                    | 640           | 66.2                               | 14.4          | 19.4                    | 1,578         |
| Jharkhand                 | 62.2                               | 17.2          | 20.6                    | 796           | 76.4                               | 15.8          | 7.8                     | 446           | 67.3                               | 16.7          | 15.9                    | 1,242         |
| Odisha                    | 60.1                               | 13.6          | 26.4                    | 1,013         | 72.2                               | 14.7          | 13.2                    | 450           | 64.0                               | 13.9          | 22.1                    | 1,463         |
| West Bengal               | 28.3                               | 28.8          | 42.9                    | 1,327         | 42.1                               | 27.4          | 30.6                    | 456           | 32.2                               | 28.4          | 39.4                    | 1,783         |
| <b>Northeast</b>          |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Arunachal Pradesh         | 42.4                               | 16.3          | 41.3                    | 577           | 47.7                               | 23.4          | 28.9                    | 128           | 43.3                               | 17.5          | 39.2                    | 705           |
| Assam                     | 33.5                               | 30.7          | 35.8                    | 889           | 48.9                               | 28.6          | 22.5                    | 253           | 37.0                               | 30.3          | 32.7                    | 1,142         |
| Manipur                   | 37.8                               | 32.8          | 29.4                    | 594           | 50.3                               | 29.5          | 20.2                    | 259           | 41.6                               | 31.8          | 26.6                    | 853           |
| Meghalaya                 | 46.9                               | 21.3          | 31.8                    | 393           | 45.9                               | 36.9          | 17.2                    | 151           | 46.6                               | 25.4          | 28.0                    | 544           |
| Mizoram                   | 46.9                               | 26.5          | 26.7                    | 485           | 67.3                               | 17.1          | 15.6                    | 184           | 52.5                               | 23.9          | 23.6                    | 669           |
| Nagaland                  | 68.6                               | 9.0           | 22.4                    | 533           | 90.1                               | 2.6           | 7.3                     | 314           | 77.4                               | 6.4           | 16.3                    | 847           |
| Tripura                   | 31.9                               | 17.7          | 50.4                    | 447           | 37.0                               | 17.5          | 45.5                    | 168           | 33.4                               | 17.7          | 49.0                    | 615           |
| <b>West</b>               |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Dadra & Nagar Haveli      | 51.9                               | 9.7           | 38.5                    | 510           | 76.4                               | 13.3          | 10.4                    | 258           | 59.5                               | 10.8          | 29.7                    | 768           |
| Daman & Diu               | 20.7                               | 28.7          | 50.6                    | 310           | 41.7                               | 34.7          | 23.6                    | 115           | 26.4                               | 30.3          | 43.3                    | 425           |
| Goa                       | 8.6                                | 27.3          | 64.1                    | 295           | 24.4                               | 38.0          | 37.5                    | 98            | 13.0                               | 30.3          | 56.6                    | 393           |
| Gujarat                   | 56.7                               | 13.9          | 29.4                    | 904           | 58.5                               | 17.1          | 24.5                    | 380           | 57.3                               | 14.9          | 27.8                    | 1,284         |
| Maharashtra               | 59.1                               | 16.7          | 24.2                    | 1,471         | 68.8                               | 16.2          | 14.9                    | 704           | 62.6                               | 16.5          | 20.9                    | 2,175         |
| <b>South</b>              |                                    |               |                         |               |                                    |               |                         |               |                                    |               |                         |               |
| Andaman & Nicobar Islands | 20.6                               | 19.7          | 59.8                    | 295           | 43.0                               | 17.1          | 39.9                    | 82            | 25.5                               | 19.1          | 55.4                    | 377           |
| Andhra Pradesh            | 50.7                               | 17.2          | 32.1                    | 1,067         | 56.5                               | 14.2          | 29.3                    | 506           | 52.6                               | 16.2          | 31.2                    | 1,573         |
| Karnataka                 | 59.5                               | 13.8          | 26.8                    | 1,006         | 79.8                               | 12.8          | 7.4                     | 462           | 65.5                               | 13.5          | 21.1                    | 1,468         |
| Kerala                    | 19.3                               | 30.8          | 49.9                    | 553           | 39.5                               | 27.3          | 33.2                    | 298           | 26.9                               | 29.5          | 43.6                    | 851           |
| Lakshadweep               | 15.1                               | 9.6           | 75.3                    | 207           | 31.4                               | 32.4          | 36.2                    | 54            | 18.8                               | 14.9          | 66.3                    | 261           |
| Puducherry                | 28.8                               | 10.6          | 60.5                    | 423           | 46.1                               | 17.1          | 36.7                    | 190           | 34.3                               | 12.7          | 53.0                    | 613           |
| Tamil Nadu                | 42.9                               | 16.6          | 40.5                    | 1,236         | 51.8                               | 17.8          | 30.5                    | 570           | 45.9                               | 17.0          | 37.1                    | 1,806         |
| Telangana                 | 63.0                               | 16.1          | 20.9                    | 1,036         | 66.8                               | 15.8          | 17.4                    | 458           | 64.3                               | 16.0          | 19.8                    | 1,494         |

\* Including spouse irrespective of age.

## 6.2.2 Characteristics of the main job

The characteristics of the main job include the workplace, duration of work in a year, duration of hours of work, number of employees of the self-employed, and type of employer for wage/salaried workers. Table 6.6 presents the percentage of currently working older adults age 45 and above by characteristics of the main job.

**Place of the current main job:** A relatively higher proportion of older adults age 45 and above are working in their own farm or business (32%), and 13% are working in their own dwelling. About 18% of elderly age 60 and above are working in a workplace without a fixed location.

**Duration of work in a year:** Among the currently working older adults age 45 and above, 85% are engaged in work for at least six months in a year.

**Type of employer of wage/salaried workers:** Among the wage/salaried workers, almost half (50%) of the older adults age 45 and above are engaged in work for a private sector company/organisation; 24% work in the government sector, and about one-fifth (20%) work in individual households.

**Number of employees:** Almost four-fifths (78%) of the self-employed older adults age 45 and above function without an employee, indicating a high proportion of ‘own account workers’ in India.

**Table 6.6 Percent distribution of currently working older adults by characteristics of main job, India, LASI Wave 1, 2017-18**

| Characteristics of main job                        | Age 45-59*    | Age ≥ 60      | Total         |
|----------------------------------------------------|---------------|---------------|---------------|
| <b>Place of current main job</b>                   |               |               |               |
| Own dwelling                                       | 13.2          | 13.3          | 13.2          |
| Own farm or business                               | 29.3          | 38.5          | 32.3          |
| Employer's dwelling                                | 4.2           | 3.9           | 4.1           |
| Employer's workplace                               | 12.3          | 9.7           | 11.4          |
| Construction site                                  | 2.7           | 2.0           | 2.5           |
| Place with fixed location                          | 19.3          | 14.7          | 17.8          |
| Place without fixed location                       | 19.1          | 18.0          | 18.7          |
| <b>Number of working older adults</b>              | <b>24,354</b> | <b>10,675</b> | <b>35,029</b> |
| <b>Duration of work in a year</b>                  |               |               |               |
| Less than 6 months                                 | 13.6          | 18.1          | 15.0          |
| 6 months and more                                  | 86.4          | 82.0          | 85.0          |
| <b>Number of working older adults</b>              | <b>24,325</b> | <b>10,669</b> | <b>34,994</b> |
| <b>Type of employer of wage and salary workers</b> |               |               |               |
| Government sector                                  | 25.8          | 16.7          | 23.8          |
| Private sector/organization/entrepreneur           | 50.4          | 49.6          | 50.2          |
| Cooperatives                                       | 1.8           | 1.7           | 1.8           |
| NGO/ Trust                                         | 4.1           | 5.1           | 4.3           |
| Individual household                               | 17.9          | 26.9          | 19.9          |
| <b>Number of wage and salary workers</b>           | <b>7,325</b>  | <b>1,921</b>  | <b>9,246</b>  |
| <b>Number of employees among self employed</b>     |               |               |               |
| No employee                                        | 77.4          | 78.0          | 77.6          |
| 1 –20 employees                                    | 21.8          | 21.6          | 21.7          |
| More than 20 employees                             | 0.8           | 0.4           | 0.7           |
| <b>Number of self employed</b>                     | <b>9,012</b>  | <b>4,989</b>  | <b>14,001</b> |
| <b>Duration of hours of work</b>                   |               |               |               |
| Same in each week                                  | 37.8          | 28.8          | 34.9          |
| Vary a little                                      | 38.2          | 42.3          | 39.5          |
| Vary a lot                                         | 24.0          | 28.9          | 25.6          |
| <b>Number of working older adults</b>              | <b>24,356</b> | <b>10,687</b> | <b>35,043</b> |

\* Including spouse irrespective of age.



### 6.2.3 Earnings by the main job

The mean monthly individual earnings of older adults age 45 and above is ₹ 5,117 for those engaged in agricultural and allied activities, ₹ 9,119 for the self-employed, and ₹ 10,996 for wage/salaried workers. The mean monthly earnings of the elderly age 60 and above who are engaged in any type of work are lower than that of older adults age 45–59 (Figure 6.4). For example, the mean monthly earnings of the elderly age 60 and above who are wage/salaried workers is ₹ 7,012.

**Figure 6.4 Mean monthly earnings of currently working older adults (in ₹) from work related activities by age and main job, India, LASI Wave 1, 2017-18**

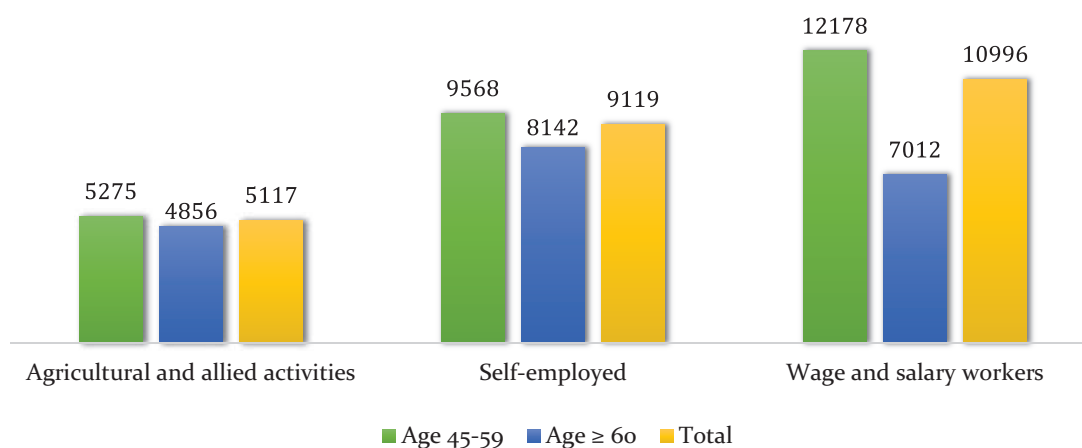


Table 6.7 presents the mean monthly individual earnings from work-related activities for currently working older adults by age and main job across the states/UTs. The mean monthly individual earnings from agricultural and allied activities are the highest in Lakshadweep (₹ 10,589), followed by Kerala (₹ 10,501), Jammu & Kashmir (₹ 9,738), and Punjab (₹ 8,704). Comparatively, the mean monthly earnings are lower in the states/UTs of Dadra & Nagar Haveli (₹ 3,286), Chhattisgarh (₹ 3,523), and Odisha (₹ 4,090). Whereas the mean monthly individual earnings from wage/salaried workers are the highest in the states/UTs of Mizoram (₹ 31,300), Lakshadweep (₹ 28,785), Andaman & Nicobar Islands (₹ 27,660), they are the lowest in the states of West Bengal (₹ 6,993), Andhra Pradesh (₹ 8,873), and Bihar (₹ 8,975).

**Table 6.7 Mean monthly earnings of currently working older adults (in ₹) from work related activities by age and main job, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Mean monthly earnings from work related activities** |               |                         |                                    |               |                         |                                    |               |                         |
|---------------------------|------------------------------------------------------|---------------|-------------------------|------------------------------------|---------------|-------------------------|------------------------------------|---------------|-------------------------|
|                           | Age 45-59*                                           |               |                         | Age ≥ 60                           |               |                         | Total                              |               |                         |
|                           | Agricultural and allied activities                   | Self-employed | Wage and salary workers | Agricultural and allied activities | Self-employed | Wage and salary workers | Agricultural and allied activities | Self-employed | Wage and salary workers |
| <b>India</b>              | <b>5,275</b>                                         | <b>9,568</b>  | <b>12,178</b>           | <b>4,856</b>                       | <b>8,142</b>  | <b>7,012</b>            | <b>5,117</b>                       | <b>9,119</b>  | <b>10,996</b>           |
| <b>North</b>              |                                                      |               |                         |                                    |               |                         |                                    |               |                         |
| Chandigarh                | 9,398                                                | 14,227        | 25,782                  | 6,516                              | 26,344        | 14,502                  | 8,847                              | 16,979        | 23,502                  |
| Delhi                     | 9,592                                                | 13,785        | 17,419                  | 5,723                              | 13,458        | 10,804                  | 8,688                              | 13,701        | 16,383                  |
| Haryana                   | 8,651                                                | 12,066        | 14,508                  | 7,396                              | 11,588        | 7,383                   | 8,258                              | 11,910        | 13,613                  |
| Himachal Pradesh          | 5,680                                                | 12,718        | 20,665                  | 6,098                              | 9,508         | 7,496                   | 5,837                              | 11,424        | 18,549                  |
| Jammu & Kashmir           | 9,878                                                | 12,629        | 20,153                  | 9,513                              | 11,080        | 21,568                  | 9,738                              | 12,021        | 20,407                  |
| Punjab                    | 9,773                                                | 11,577        | 10,408                  | 6,854                              | 8,678         | 6,123                   | 8,704                              | 10,729        | 9,441                   |
| Rajasthan                 | 5,471                                                | 10,007        | 14,900                  | 5,068                              | 8,951         | 6,809                   | 5,329                              | 9,666         | 12,963                  |
| Uttarakhand               | 4,728                                                | 9,800         | 18,083                  | 4,791                              | 9,025         | 8,391                   | 4,755                              | 9,514         | 16,092                  |
| <b>Central</b>            |                                                      |               |                         |                                    |               |                         |                                    |               |                         |
| Chhattisgarh              | 3,478                                                | 8,038         | 16,260                  | 3,654                              | 7,841         | 9,338                   | 3,523                              | 7,987         | 15,020                  |
| Madhya Pradesh            | 5,140                                                | 8,310         | 10,855                  | 4,250                              | 8,142         | 5,548                   | 4,803                              | 8,263         | 9,566                   |
| Uttar Pradesh             | 5,070                                                | 9,097         | 12,115                  | 4,623                              | 6,146         | 6,007                   | 4,896                              | 7,993         | 10,383                  |
| <b>East</b>               |                                                      |               |                         |                                    |               |                         |                                    |               |                         |
| Bihar                     | 4,720                                                | 9,278         | 10,273                  | 4,493                              | 6,340         | 5,765                   | 4,613                              | 8,180         | 8,975                   |
| Jharkhand                 | 4,334                                                | 10,618        | 12,817                  | 4,024                              | 5,972         | 7,419                   | 4,206                              | 9,028         | 11,853                  |
| Odisha                    | 4,235                                                | 9,235         | 9,936                   | 3,838                              | 7,015         | 7,148                   | 4,090                              | 8,485         | 9,398                   |
| West Bengal               | 4,505                                                | 7,494         | 7,525                   | 4,021                              | 6,482         | 5,112                   | 4,325                              | 7,216         | 6,993                   |
| <b>Northeast</b>          |                                                      |               |                         |                                    |               |                         |                                    |               |                         |
| Arunachal Pradesh         | 6,997                                                | 15,087        | 23,147                  | 4,643                              | 8,172         | 7,695                   | 6,556                              | 13,517        | 21,213                  |
| Assam                     | 5,219                                                | 7,859         | 10,633                  | 4,341                              | 5,543         | 11,051                  | 4,962                              | 7,356         | 10,699                  |
| Manipur                   | 5,856                                                | 12,092        | 14,872                  | 5,004                              | 5,829         | 17,710                  | 5,541                              | 10,332        | 15,523                  |
| Meghalaya                 | 6,547                                                | 14,284        | 17,824                  | 4,906                              | 11,698        | 16,240                  | 6,113                              | 13,376        | 17,583                  |
| Mizoram                   | 5,704                                                | 12,918        | 30,735                  | 5,576                              | 10,799        | 33,994                  | 5,660                              | 12,452        | 31,300                  |
| Nagaland                  | 4,667                                                | 14,169        | 25,086                  | 3,516                              | 21,458        | 20,028                  | 4,097                              | 15,159        | 24,086                  |
| Tripura                   | 5,393                                                | 13,320        | 11,749                  | 4,245                              | 5,687         | 4,483                   | 5,033                              | 11,177        | 9,820                   |
| <b>West</b>               |                                                      |               |                         |                                    |               |                         |                                    |               |                         |
| Dadra & Nagar Haveli      | 3,546                                                | 13,508        | 15,960                  | 2,892                              | 26,099        | 12,601                  | 3,286                              | 18,338        | 15,581                  |
| Daman & Diu               | 7,325                                                | 9,658         | 13,554                  | 5,265                              | 7,215         | 7,191                   | 6,426                              | 8,896         | 12,606                  |
| Goa                       | 7,939                                                | 14,423        | 15,650                  | 7,627                              | 14,764        | 11,985                  | 7,776                              | 14,546        | 14,968                  |
| Gujarat                   | 5,057                                                | 8,816         | 10,323                  | 4,175                              | 10,859        | 8,024                   | 4,774                              | 9,558         | 9,688                   |
| Maharashtra               | 5,382                                                | 9,527         | 12,650                  | 4,997                              | 8,507         | 7,961                   | 5,232                              | 9,170         | 11,456                  |
| <b>South</b>              |                                                      |               |                         |                                    |               |                         |                                    |               |                         |
| Andaman & Nicobar Islands | 8,757                                                | 18,429        | 30,764                  | 8,210                              | 6,353         | 10,512                  | 8,555                              | 16,277        | 27,660                  |
| Andhra Pradesh            | 6,059                                                | 10,854        | 10,062                  | 5,247                              | 10,096        | 6,121                   | 5,775                              | 10,629        | 8,873                   |
| Karnataka                 | 5,575                                                | 10,835        | 17,030                  | 5,057                              | 8,502         | 7,014                   | 5,384                              | 10,171        | 15,871                  |
| Kerala                    | 11,634                                               | 12,760        | 17,417                  | 9,544                              | 10,953        | 10,510                  | 10,501                             | 12,142        | 15,548                  |
| Lakshadweep               | 11,257                                               | 10,500        | 31,578                  | 9,541                              | 13,205        | 10,029                  | 10,589                             | 11,866        | 28,785                  |
| Puducherry                | 6,277                                                | 13,036        | 17,927                  | 6,508                              | 8,380         | 12,846                  | 6,376                              | 11,038        | 16,816                  |
| Tamil Nadu                | 6,206                                                | 11,084        | 9,755                   | 6,742                              | 9,487         | 7,186                   | 6,410                              | 10,521        | 9,046                   |
| Telangana                 | 4,923                                                | 8,977         | 13,499                  | 5,510                              | 6,365         | 6,374                   | 5,121                              | 8,137         | 11,514                  |

\* Including spouse irrespective of age.

\*\*Monthly earning includes earning from main and side job.

## 6.2.4 Occupation and industry of the main job

Occupation refers to a specific task or set of tasks with which a person is engaged. Industry refers to the type of firm for which a person works. Following the National Classification of Occupation, the categories of occupation in LASI are: legislators, senior officials and managers, professional/technical workers, clerical workers, sales and services, skilled agricultural workers, craft and related trade workers, plant and machine operators, and elementary occupations. Following the National Classification of Industry, in LASI, the categories of industry are agriculture, forestry, and fishing; mining and quarrying; manufacturing; electricity; water supply; construction; wholesale and retail trade; transportation and storage; information and communication; financial activities, professional, scientific, and technical activities; public administration; education; and human health activities. Table 6.8 presents the percent distribution of currently working older adults by type of occupation and industry of their main job.

**Industry:** Most older adults age 45 and above are engaged in agriculture, forestry, and fishing (52% for men, and 64% for women), followed by wholesale and retail trade and transportation, accommodation and information & communication (17% for men, and 9% for women).

**Occupation:** Most older adults age 45 and above in India work as skilled agriculture/fishery workers, followed by those in elementary occupations. Elementary occupations involve the performance of simple and routine tasks that may require the use of hand-held tools and considerable physical effort. The proportion of women in agriculture/fishery and elementary occupations is much higher than their male counterparts. The proportion of older adults age 45 and above engaged as senior officials, managers, technicians is less than 6%. Nonetheless, men dominate these occupations, and the share of women in these areas is much lower.

**Table 6.8 Percent distribution of currently working older adults by type of occupation and industry of main job according to age and sex, India, LASI Wave 1, 2017-1**

| Occupation/Industry                                                                 | Male       |          |        | Female    |          |        | Total  |
|-------------------------------------------------------------------------------------|------------|----------|--------|-----------|----------|--------|--------|
|                                                                                     | Age 45-59* | Age ≥ 60 | Total  | Age 45-59 | Age ≥ 60 | Total  |        |
| Industry                                                                            |            |          |        |           |          |        |        |
| Agriculture, forestry, fishing                                                      | 45.7       | 63.4     | 52.3   | 62.0      | 70.8     | 64.3   | 57.2   |
| Quarrying and mining                                                                | 1.4        | 0.9      | 1.2    | 0.5       | 0.6      | 0.6    | 1.0    |
| Manufacturing                                                                       | 5.1        | 3.1      | 4.3    | 3.9       | 2.4      | 3.5    | 4.0    |
| Electricity, gas, water supply                                                      | 2.1        | 1.4      | 1.8    | 1.1       | 0.8      | 1.0    | 1.5    |
| Construction                                                                        | 7.3        | 4.6      | 6.3    | 3.2       | 2.6      | 3.1    | 5.0    |
| Wholesale and retail, transportation, accommodation and information & communication | 18.1       | 14.0     | 16.6   | 9.2       | 8.3      | 9.0    | 13.5   |
| Financial, real estate and professional services                                    | 4.1        | 1.7      | 3.2    | 1.4       | 0.9      | 1.3    | 2.4    |
| Administrative and public administration and defence services                       | 4.7        | 2.1      | 3.7    | 1.0       | 0.5      | 0.8    | 2.6    |
| Other services**                                                                    | 11.5       | 8.8      | 10.5   | 17.8      | 13.1     | 16.6   | 13.0   |
| Number                                                                              | 13,870     | 7,258    | 21,128 | 10,479    | 3,416    | 13,895 | 35,023 |
| Occupation                                                                          |            |          |        |           |          |        |        |
| Legislators, senior officials and managers                                          | 1.9        | 0.5      | 1.4    | 0.6       | 0.1      | 0.5    | 1.0    |
| Professionals                                                                       | 5.6        | 2.6      | 4.4    | 6.8       | 1.0      | 5.3    | 4.8    |
| Technicians and associate professionals                                             | 3.1        | 1.0      | 2.3    | 0.7       | 0.3      | 0.6    | 1.6    |
| Clerks                                                                              | 2.6        | 1.1      | 2.1    | 0.8       | 0.3      | 0.6    | 1.5    |
| Service workers and shop and market sales workers                                   | 13.2       | 12.3     | 12.9   | 8.0       | 7.2      | 7.8    | 10.8   |
| Skilled agricultural and fishery workers                                            | 42.8       | 57.1     | 48.2   | 53.7      | 60.5     | 55.4   | 51.1   |
| Craft and related trade workers                                                     | 5.1        | 4.2      | 4.8    | 5.0       | 3.3      | 4.6    | 4.7    |
| Plant and machine operators and assemblers                                          | 5.5        | 1.8      | 4.1    | 0.3       | 0.2      | 0.3    | 2.5    |
| Elementary occupations                                                              | 20.2       | 19.6     | 20.0   | 24.1      | 27.1     | 24.9   | 22.0   |
| Number                                                                              | 11,702     | 6,316    | 18,018 | 8,976     | 2,924    | 11,900 | 29,918 |

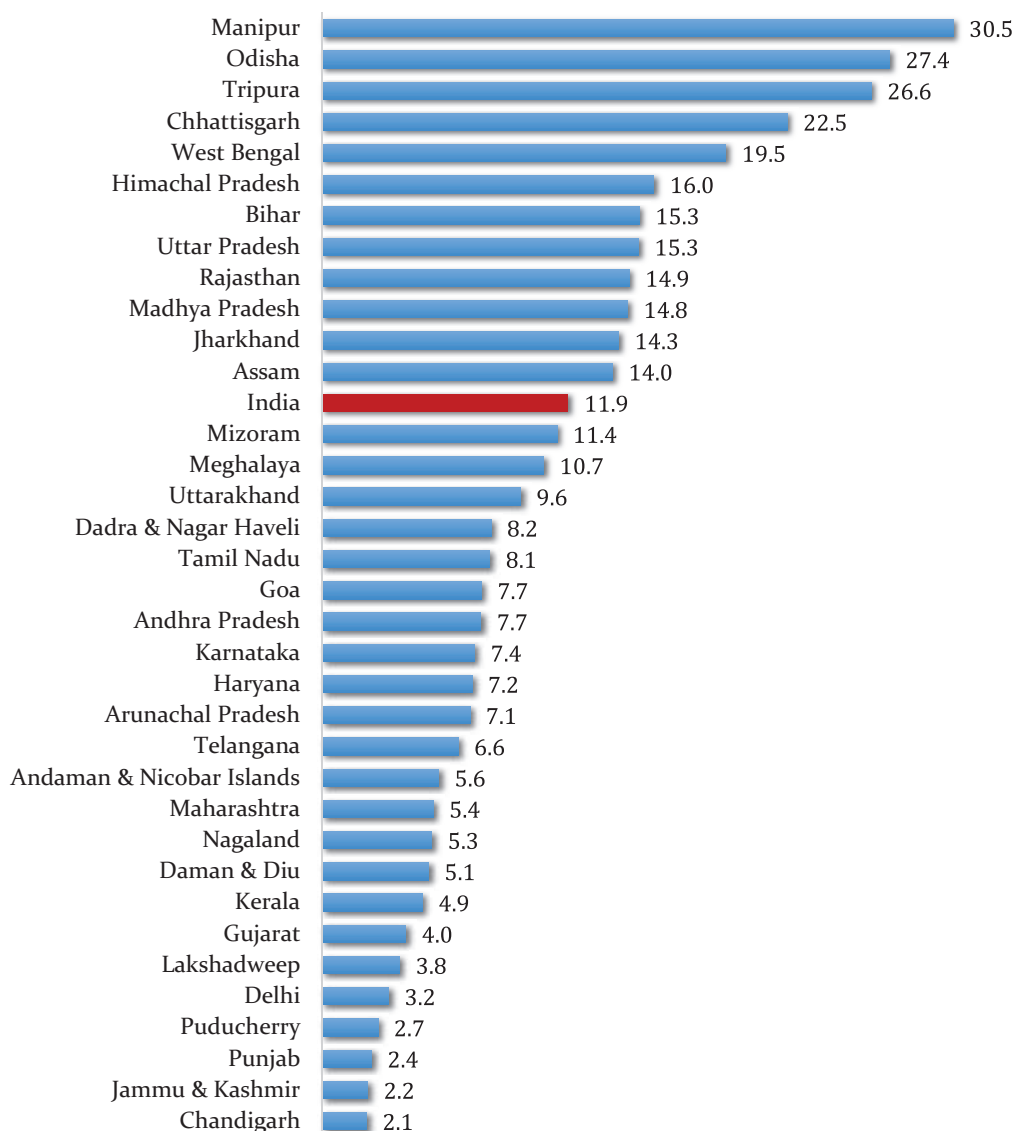
\* Including spouse irrespective of age.

\*\*Other services include education, human health and social work activities, art, entertainment, and recreation, other services activities, activities of households as employers, activities of extraterritorial organizations and other.

### 6.2.5 Side job

Figure 6.5 shows the percentage of older adults engaged in side jobs. Twelve percent of the currently working older adults age 45 and above in India are engaged in side jobs, alongside their main jobs. In states such as Manipur (31%), Odisha (27%), Tripura (27%), and Chhattisgarh (23%), more than one-fifth of the older adults age 45 and above are also engaged in a side job. By contrast, this proportion is much lower in Chandigarh, Puducherry, Jammu & Kashmir, and Punjab at 3%.

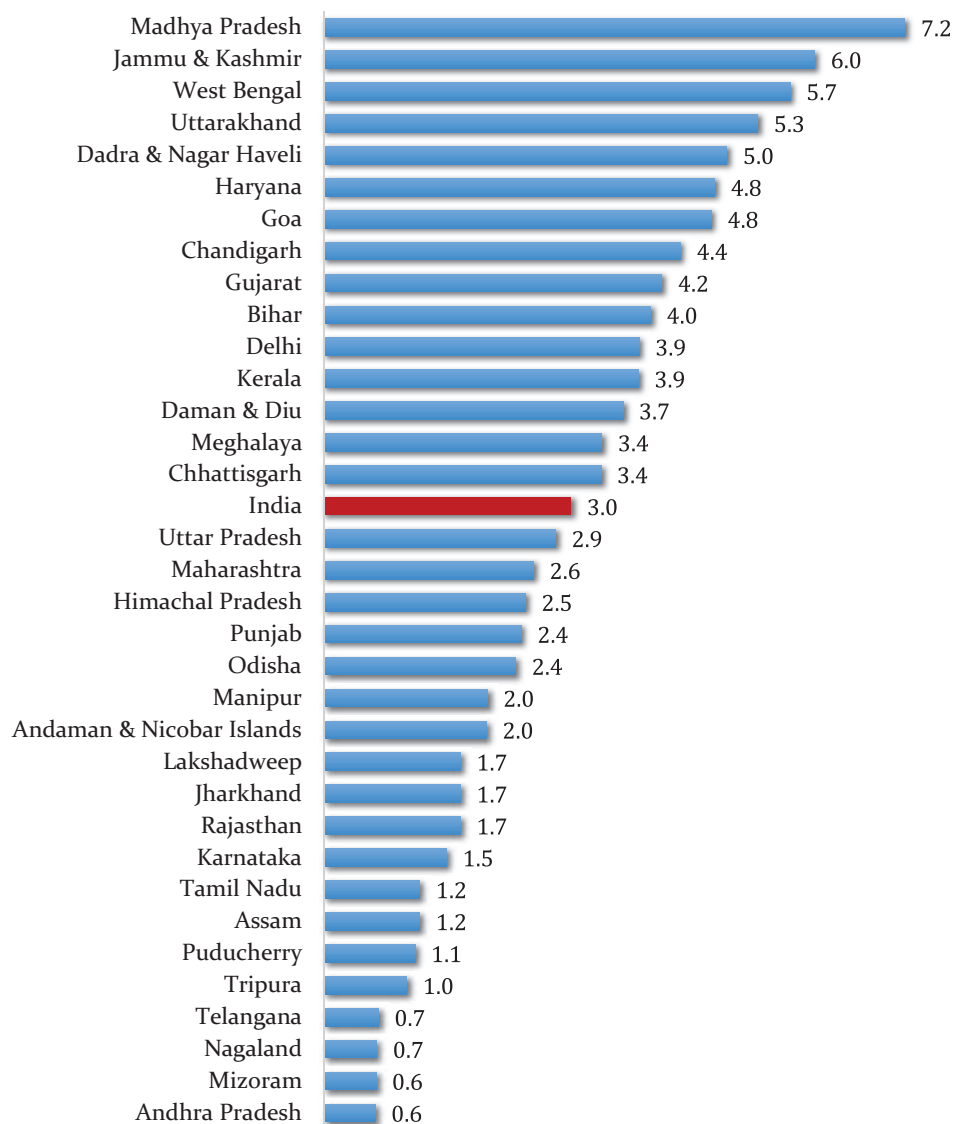
**Figure 6.5 Percentage of currently working older adults age 45 and above engaged in side job, states/UTs, LASI Wave 1, 2017-18**



### 6.3 JOB SEARCH

In LASI, older adults who ever worked were asked about their job search. Specifically, they were asked whether they were searching for a job at the time of the survey and whether they were registered in the employment exchange or under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Respondents were also asked what type of jobs they were looking for. In India, a small proportion (3%) of ever-worked older adults are searching for a job. This percentage is the highest in Madhya Pradesh (7%), followed by Jammu & Kashmir (6%) and West Bengal (6%) (Figure 6.6).

**Figure 6.6 Percentage of ever-worked older adults age 45 and above seeking for alternative employment opportunities, states/UTs, LASI Wave 1, 2017-18**



## 6.4 WORK-RELATED SOCIAL SECURITY COVERAGE

In LASI, work-related social insurance coverage focuses on six categories of social security schemes, that is, work-related pension, provident fund, work-related health insurance (but not life insurance), medical re-imbursement from employer, worker's employment insurance, and worker's injury insurance.

- **Social insurance** Work-related social insurance includes pension, provident fund, health insurance, injury/accident insurance, and any other benefits related to work. It includes both contributory and government-funded schemes.

**Figure 6.7 Percentage of ever worked older adults age 45 and above by work related social insurance, India, LASI Wave 1, 2017-18**

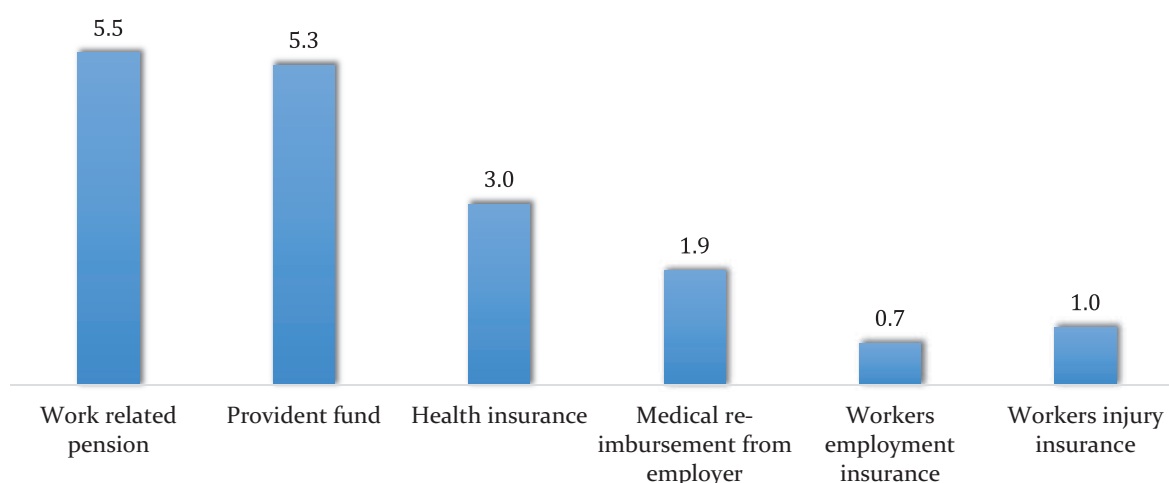


Table 6.9 presents the percentage of ever-worked older adults covered under social insurance across the states/UTs. In India, 6% of the older adults age 45 and above who have ever worked are covered under a work-related pension, and 5% are covered under provident fund scheme. The remaining types of coverage (i.e. health insurance, medical re-imbursement from an employer, worker's employment, and injury insurance) are provided to only a small percentage of the population (2% or below); (Figure 6.7). The percentage of people who have a work-related pension or provident fund scheme is higher among the elderly age 60 and above than among older adults age 45–59. The proportion of ever-worked older adults age 45 and above who are covered under a work-related pension is the highest in Lakshadweep (38%). Moreover, a higher proportion of older adults age 45 and above is covered under a work-related pension in Chandigarh (21%), Mizoram (17%), Goa (16%) and Kerala (15%). Similarly, a higher percentage of older adults is covered under a provident fund in Lakshadweep (33%), Goa (20%), Chandigarh (19%), Mizoram (17%) and Daman & Diu (17%)



**Table 6.9 Percentage of ever worked older adults covered under work related social insurance, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age 45-59*           |                |               | Age ≥ 60             |                |               | Total                |                |               |
|---------------------------|----------------------|----------------|---------------|----------------------|----------------|---------------|----------------------|----------------|---------------|
|                           | Work related pension | Provident fund | Number        | Work related pension | Provident fund | Number        | Work related pension | Provident fund | Number        |
| <b>India</b>              | <b>2.8</b>           | <b>4.7</b>     | <b>28,222</b> | <b>8.6</b>           | <b>6.0</b>     | <b>22,645</b> | <b>5.5</b>           | <b>5.3</b>     | <b>50,867</b> |
| <b>North</b>              |                      |                |               |                      |                |               |                      |                |               |
| Chandigarh                | 5.7                  | 13.2           | 362           | 42.6                 | 26.2           | 218           | 20.8                 | 18.5           | 580           |
| Delhi                     | 6.6                  | 11.0           | 459           | 25.2                 | 12.0           | 290           | 14.0                 | 11.4           | 749           |
| Haryana                   | 4.8                  | 8.0            | 664           | 14.7                 | 11.8           | 513           | 9.4                  | 9.7            | 1,177         |
| Himachal Pradesh          | 6.6                  | 6.9            | 640           | 23.2                 | 15.4           | 527           | 14.6                 | 11.0           | 1,167         |
| Jammu & Kashmir           | 9.6                  | 11.6           | 319           | 11.7                 | 10.2           | 336           | 10.7                 | 10.9           | 655           |
| Punjab                    | 1.9                  | 1.3            | 545           | 9.2                  | 2.3            | 518           | 5.5                  | 1.8            | 1,063         |
| Rajasthan                 | 3.9                  | 4.3            | 924           | 7.9                  | 5.8            | 873           | 5.9                  | 5.0            | 1,797         |
| Uttarakhand               | 5.4                  | 6.6            | 460           | 22.6                 | 9.6            | 469           | 14.4                 | 8.1            | 929           |
| <b>Central</b>            |                      |                |               |                      |                |               |                      |                |               |
| Chhattisgarh              | 4.3                  | 3.9            | 1,091         | 6.0                  | 4.3            | 679           | 5.0                  | 4.1            | 1,770         |
| Madhya Pradesh            | 2.2                  | 3.8            | 1,273         | 6.8                  | 3.3            | 1,064         | 4.5                  | 3.5            | 2,337         |
| Uttar Pradesh             | 1.6                  | 2.0            | 1,487         | 10.2                 | 3.6            | 1,469         | 6.0                  | 2.8            | 2,956         |
| <b>East</b>               |                      |                |               |                      |                |               |                      |                |               |
| Bihar                     | 1.6                  | 1.9            | 1,095         | 5.6                  | 4.2            | 1,301         | 3.9                  | 3.2            | 2,396         |
| Jharkhand                 | 2.9                  | 4.0            | 898           | 10.8                 | 10.4           | 917           | 7.0                  | 7.3            | 1,815         |
| Odisha                    | 1.7                  | 2.8            | 1,085         | 5.5                  | 4.1            | 828           | 3.4                  | 3.4            | 1,913         |
| West Bengal               | 4.1                  | 4.9            | 1,527         | 11.3                 | 10.9           | 1,056         | 7.1                  | 7.4            | 2,583         |
| <b>Northeast</b>          |                      |                |               |                      |                |               |                      |                |               |
| Arunachal Pradesh         | 8.2                  | 4.2            | 607           | 4.4                  | 1.9            | 171           | 7.4                  | 3.7            | 778           |
| Assam                     | 4.5                  | 7.2            | 986           | 13.1                 | 9.7            | 528           | 7.6                  | 8.1            | 1,514         |
| Manipur                   | 3.2                  | 4.3            | 674           | 12.1                 | 9.7            | 544           | 7.4                  | 6.8            | 1,218         |
| Meghalaya                 | 3.4                  | 4.2            | 430           | 13.4                 | 5.2            | 283           | 7.2                  | 4.6            | 713           |
| Mizoram                   | 15.0                 | 16.9           | 548           | 19.2                 | 18.2           | 410           | 16.9                 | 17.5           | 958           |
| Nagaland                  | 8.9                  | 6.8            | 578           | 16.5                 | 11.9           | 526           | 12.8                 | 9.4            | 1,104         |
| Tripura                   | 7.3                  | 9.5            | 496           | 11.7                 | 10.9           | 330           | 9.1                  | 10.0           | 826           |
| <b>West</b>               |                      |                |               |                      |                |               |                      |                |               |
| Dadra & Nagar Haveli      | 3.2                  | 11.3           | 568           | 6.1                  | 7.9            | 416           | 4.3                  | 9.9            | 984           |
| Daman & Diu               | 1.9                  | 17.5           | 428           | 12.3                 | 15.7           | 352           | 7.0                  | 16.6           | 780           |
| Goa                       | 10.9                 | 18.9           | 438           | 22.0                 | 21.8           | 351           | 16.0                 | 20.2           | 789           |
| Gujarat                   | 3.0                  | 8.6            | 1157          | 6.6                  | 10.6           | 870           | 4.6                  | 9.5            | 2027          |
| Maharashtra               | 2.9                  | 4.9            | 1707          | 9.5                  | 7.8            | 1460          | 6.2                  | 6.3            | 3167          |
| <b>South</b>              |                      |                |               |                      |                |               |                      |                |               |
| Andaman & Nicobar Islands | 7.0                  | 9.3            | 364           | 20.4                 | 6.9            | 302           | 12.9                 | 8.3            | 666           |
| Andhra Pradesh            | 1.7                  | 2.8            | 1264          | 3.8                  | 3.6            | 911           | 2.6                  | 3.1            | 2175          |
| Karnataka                 | 1.9                  | 4.3            | 1150          | 5.7                  | 1.9            | 855           | 3.4                  | 3.4            | 2005          |
| Kerala                    | 11.1                 | 14.0           | 729           | 18.5                 | 11.5           | 718           | 15.0                 | 12.7           | 1447          |
| Lakshadweep               | 28.5                 | 31.7           | 234           | 46.7                 | 33.8           | 240           | 38.4                 | 32.8           | 474           |
| Puducherry                | 3.4                  | 3.5            | 475           | 19.5                 | 7.4            | 384           | 10.9                 | 5.3            | 859           |
| Tamil Nadu                | 2.3                  | 5.7            | 1370          | 11.0                 | 6.4            | 1057          | 6.3                  | 6.0            | 2427          |
| Telangana                 | 1.9                  | 2.7            | 1190          | 4.6                  | 2.3            | 879           | 3.1                  | 2.6            | 2069          |

\* Including spouse irrespective of age.

### Key findings: work and social security coverage

- About three-fifths (62%) of older adults age 45–59 and a little more than one-third (36%) of the elderly age 60 and above are currently working. Gender differences are notable in the current work status of older adults and their work-related characteristics: 70% of older adult men and 35% of older adult women age 45 and above are currently working; among elderly age 60 and above, 50% of men compared with 22% of women are currently working. The proportion of elderly age 60 and above who are currently working is higher in rural areas (40%) than urban areas (26%).
- Ten percent of older adults age 45–59 and 38% of elderly age 60 and above have ever worked and are currently not working. Twelve percent of older adult women and 6% of older adult men age 45–59 have ever worked and are currently not working.
- Work participation among women age 45 and above is much higher in Dadra & Nagar Haveli (58%), Manipur (51%), Himachal Pradesh (51%), and Telangana (50%), while it is lower in states such as Jammu & Kashmir (3%), Lakshadweep (5%), Punjab (10%), and Goa (12%).
- Regardless of age, the proportion of women engaged in agricultural and allied activities is higher than that of their male counterparts.
- More than half of the older adults age 45 and above are engaged in agricultural and allied activities, while 17% are self-employed. Among the elderly age 60 and above, the majority are engaged in agricultural and allied activities (65%).
- One-fourth of adults age 45 and above and less than one-fifth of the elderly age 60 and above who are currently working are engaged in wage/salaried work. Moreover, 17% of the elderly age 60 and above are self-employed.
- Among the currently working older adults age 45 and above, 85% are engaged in work for at least six months in a year.
- Among the wage/salaried workers, half of the older adults age 45 and above are working in the private sector or a private organization, followed by 24% in the government sector.
- The mean monthly earnings of the elderly age 60 and above engaged in any type of work are lower than those of older adults age 45–59. The mean monthly individual earnings of currently working older adults age 45 and above is ₹5,117 from agricultural and allied activities, ₹9,119 for those who are self-employed, and ₹10,996 for wage/salaried workers. The mean income from different types of main jobs varies from ₹4,090 in Odisha to ₹10,589 in Lakshadweep.
- Twelve percent of older adults age 45 and above in India are engaged in side jobs alongside their main jobs.
- Almost four-fifths (78%) of the self-employed older adults are functioning without an employee, indicating a high prevalence of ‘own account workers’ in India.
- In India, 6% of older adults age 45 and above who have ever worked are covered under work-related pension and 5% are covered under the provident fund scheme. The proportion of older adults age 45 and above who have ever worked and are covered under a work-related pension is the highest in Lakshadweep (38%), followed by Chandigarh (21%), and it is the lowest in Andhra Pradesh (3%).

## 6.5 RETIREMENT AND PENSION

In LASI, information on planning for retirement or stopping work was collected from those who ever worked. Stopping work refers to the point at which the respondent intends to stop all income-earning activities and does not intend to engage in any other income-earning activities in the future. Further information on pension and retirement was collected from those who had officially retired.

- |                        |                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Official retirement  | Official retirement refers to retirement from an organised sector of employment, including the government, state-owned enterprises, and private sector enterprises. An organised sector provides employment terms that are fixed or regular and up to a specific age. Moreover, official retirement is usually applicable for permanent employees. |
| • Work-related pension | Pension is a fixed sum paid regularly to a retired person in connection to his/her work once the person retires. There are different types of pensions, including defined benefit plans and defined contribution plans.                                                                                                                            |

Figure 6.8 presents the percentage of elderly age 60 and above who are officially retired from the organised sector of employment. In India, 7% of the elderly age 60 and above have officially retired from the organised sector of employment. Figure 6.9 indicates the officially retired elderly who are currently receiving a pension across the states/UTs. Only 6% of the officially retired elderly age 60 and above are currently receiving pension. The proportion of the elderly who are officially retired from the organised sector of employment is the highest in Chandigarh (28%), followed by Himachal Pradesh (23%), Uttarakhand (16%), and Lakshadweep (15%). It is the lowest in the state of Arunachal Pradesh (3%), followed by Karnataka (3%) and Telangana (5%). A similar state-wise pattern is observed for elderly age 60 and above who are currently receiving a pension.

Table 6.10 presents the mean monthly pension received by elderly age 60 and above who officially retired from an organised sector of employment. In India, the mean monthly pension received by elderly age 60 and above who have retired is ₹16,498 from the central government, ₹16,949 from the state government, and ₹6,128 from an employer-funded pension scheme. The mean monthly pension received by elderly age 60 and above is higher in Chandigarh (₹ 25,951), Jammu & Kashmir (₹ 23,181), and Delhi (₹21,427), whereas it is lower in the states of Tamil Nadu (₹10,224), Jharkhand (₹10,860), and Tripura (₹11,220).

Table 6.11 presents the percent distribution of elderly age 60 and above who have ever worked and officially retired by their work-related pension status according to their background characteristics. In India, about one-fifth (19%) of the elderly age 60 and above who are officially retired are currently receiving a pension; an additional 3% are expected to receive it, and a large proportion (78%) are neither receiving nor expected to receive a pension. The proportion of elderly age 60 and above who are currently receiving a pension is higher in urban areas (39%) than in rural areas (11%). More elderly men (23%) than women (8%) age 60 and above are currently receiving a pension. Only 4% of the elderly with no schooling are receiving a pension, compared with 54% of the elderly with 10 or more years of schooling. Thirty-seven percent of the elderly age 60 and above belonging to the richest MPCE quintile who are officially retired are currently receiving a pension or expected to receive it, compared with 12% of the elderly in the poorest MPCE quintile.

Table 6.12 shows the percent distribution of the elderly age 60 and above who have ever worked and officially retired by their work-related pension status according to states/UTs. In India, 78% of the elderly age 60 and above who have ever worked and retired are neither receiving nor expected to receive a pension. This proportion is higher than the national average in the states/UTs of Arunachal Pradesh (92%), Odisha (87%), Andhra Pradesh (87%), and Bihar (86%). The proportion of the elderly age 60 and above who have ever worked and are currently receiving pension is much higher in the states/UTs of Haryana (93%), Delhi (80%), and Chandigarh (65%).

**Figure 6.8 Percentage of elderly age 60 and above who officially retired from organized sector of employment, states/UTs, LASI Wave 1, 2017-18**

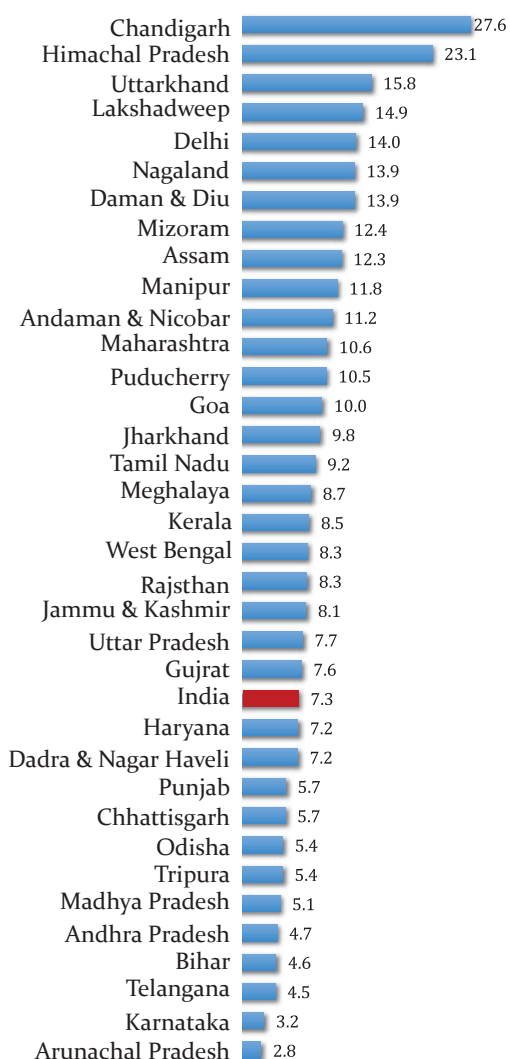
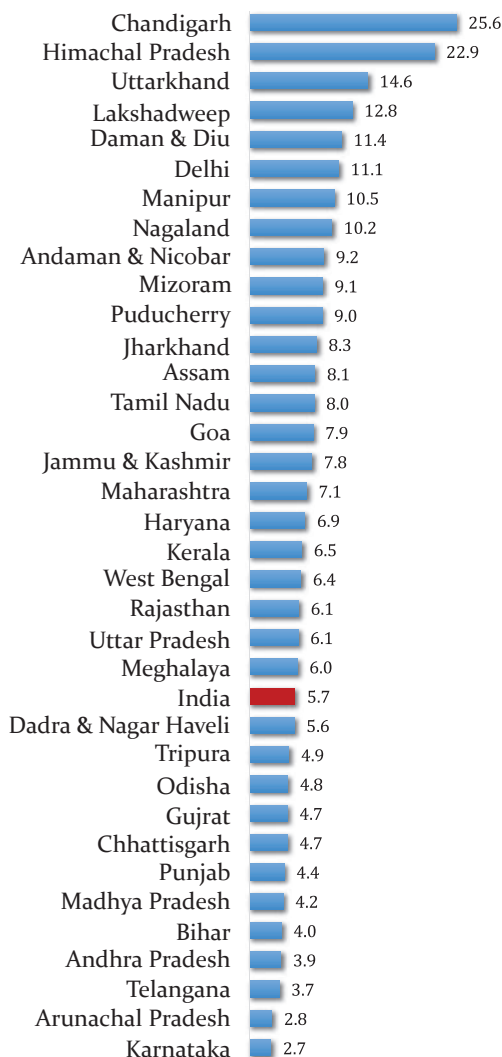


**Figure 6.9 Percentage of elderly age 60 and above\* currently receiving pension, states/UTs, LASI Wave 1, 2017-18**



\*Based on all elderly age 60 and above

**Table 6.10 Mean monthly pension (in ₹) of officially retired elderly age 60 and above, states/UTs, LASI Wave 1, 2017-1**

| States/Union Territory    | Central Government Pension Schemes | State Government Pension Schemes | Employer Funded Pension Schemes |
|---------------------------|------------------------------------|----------------------------------|---------------------------------|
| <b>India</b>              | <b>16,498</b>                      | <b>16,949</b>                    | <b>6,128</b>                    |
| <b>North</b>              |                                    |                                  |                                 |
| Chandigarh                | 25,951                             | 22,001                           | 5,426                           |
| Delhi                     | 21,427                             | 14,330                           | 4,536                           |
| Haryana                   | 14,743                             | 17,083                           | 4,100                           |
| Himachal Pradesh          | 16,177                             | 14,349                           | 18,978                          |
| Jammu & Kashmir           | 23,181                             | 19,750                           |                                 |
| Punjab                    | 17,384                             | 24,085                           | 22,900                          |
| Rajasthan                 | 17,030                             | 17,310                           | 13,679                          |
| Uttarakhand               | 14,354                             | 18,799                           | 19,740                          |
| <b>Central</b>            |                                    |                                  |                                 |
| Chhattisgarh              | 11,838                             | 13,554                           | 4,955                           |
| Madhya Pradesh            | 15,756                             | 14,813                           | 12,325                          |
| Uttar Pradesh             | 19,265                             | 15,836                           | 7,699                           |
| East                      |                                    |                                  |                                 |
| Bihar                     | 16,456                             | 16,486                           | 4,672                           |
| Jharkhand                 | 10,860                             | 16,328                           | 5,788                           |
| Odisha                    | 15,032                             | 15,840                           | -                               |
| West Bengal               | 15,259                             | 16,977                           | 8,635                           |
| <b>Northeast</b>          |                                    |                                  |                                 |
| Arunachal Pradesh         | 15,148                             | 35,229                           | -                               |
| Assam                     | 16,250                             | 20,072                           | -                               |
| Manipur                   | 17,634                             | 14,410                           | 8,461                           |
| Meghalaya                 | 18,838                             | 15,638                           |                                 |
| Mizoram                   | 27,868                             | 18,755                           | -                               |
| Nagaland                  | 13,923                             | 21,861                           | -                               |
| Tripura                   | 11,220                             | 14,603                           | -                               |
| <b>West</b>               |                                    |                                  |                                 |
| Dadra & Nagar Haveli      | 16,259                             | 9,161                            | 8,000                           |
| Daman & Diu               | 15,067                             | 12,771                           | 1,357                           |
| Goa                       | 13,522                             | 18,283                           | 10,677                          |
| Gujarat                   | 15,753                             | 11,231                           | 1,192                           |
| Maharashtra               | 18,108                             | 15,063                           | 4,939                           |
| <b>South</b>              |                                    |                                  |                                 |
| Andaman & Nicobar Islands | 13,498                             | 10,615                           | 1,887                           |
| Andhra Pradesh            | 18,844                             | 25,042                           | 5,702                           |
| Karnataka                 | 12,960                             | 24,592                           | 11,030                          |
| Kerala                    | 17,600                             | 15,397                           | 7,409                           |
| Lakshadweep               | 14,582                             | 4,208                            | -                               |
| Puducherry                | 17,949                             | 13,889                           | 7,537                           |
| Tamil Nadu                | 10,224                             | 16,385                           | 4,455                           |
| Telangana                 | 15,908                             | 20,529                           | -                               |

"-" indicates less number of cases/ no cases.

**Table 6.11 Percent distribution of ever worked elderly age 60 and above who have officially retired by work-related pension status according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics         | Currently receiving pension* | Expected to receive pension in future* | Neither currently receiving nor expected to receive in future* | Number        |
|------------------------------------|------------------------------|----------------------------------------|----------------------------------------------------------------|---------------|
| <b>Place of residence</b>          |                              |                                        |                                                                |               |
| Rural                              | 11.3                         | 2.9                                    | 85.8                                                           | 6,757         |
| Urban                              | 39.2                         | 3.5                                    | 57.3                                                           | 3,280         |
| <b>Sex</b>                         |                              |                                        |                                                                |               |
| Male                               | 23.2                         | 3.1                                    | 73.7                                                           | 7,224         |
| Female                             | 7.8                          | 2.9                                    | 89.2                                                           | 2,813         |
| <b>Marital status</b>              |                              |                                        |                                                                |               |
| Currently married                  | 19.3                         | 3.4                                    | 77.3                                                           | 5,743         |
| Widowed                            | 16.8                         | 2.2                                    | 81.1                                                           | 1,517         |
| Divorced/Separated/Deserted/Others | 15.8                         | 0.6                                    | 83.6                                                           | 216           |
| <b>Caste/tribe</b>                 |                              |                                        |                                                                |               |
| Scheduled tribe                    | 9.3                          | 2.8                                    | 87.9                                                           | 2,030         |
| Scheduled caste                    | 12.8                         | 3.0                                    | 84.2                                                           | 1,690         |
| Other backward class (OBC)         | 17.3                         | 3.2                                    | 79.5                                                           | 3,592         |
| None of the above                  | 28.7                         | 2.9                                    | 68.5                                                           | 2,725         |
| <b>Religion</b>                    |                              |                                        |                                                                |               |
| Hindu                              | 19.4                         | 3.0                                    | 77.6                                                           | 7,324         |
| Muslim                             | 13.5                         | 2.9                                    | 83.6                                                           | 951           |
| Christian                          | 16.3                         | 3.5                                    | 80.3                                                           | 1,322         |
| Others                             | 19.0                         | 2.5                                    | 78.5                                                           | 440           |
| <b>Education</b>                   |                              |                                        |                                                                |               |
| No schooling                       | 4.0                          | 2.3                                    | 93.7                                                           | 4,272         |
| Less than 5 years complete         | 6.7                          | 3.4                                    | 90.0                                                           | 1,146         |
| 5-9 years complete                 | 18.3                         | 3.5                                    | 78.2                                                           | 2,131         |
| 10 or more years complete          | 53.9                         | 3.9                                    | 42.2                                                           | 2,488         |
| <b>MPCE quintile</b>               |                              |                                        |                                                                |               |
| Poorest                            | 9.4                          | 2.4                                    | 88.2                                                           | 1,876         |
| Poorer                             | 13.4                         | 3.3                                    | 83.4                                                           | 2,002         |
| Middle                             | 19.4                         | 2.7                                    | 77.9                                                           | 2,062         |
| Richer                             | 20.8                         | 3.2                                    | 75.9                                                           | 2,063         |
| Richest                            | 32.8                         | 3.7                                    | 63.6                                                           | 2,034         |
| <b>Total</b>                       | <b>18.7</b>                  | <b>3.0</b>                             | <b>78.3</b>                                                    | <b>10,037</b> |

\*Elderly age 60 and above who ever worked and have officially retired from organized sector of employment.



**Table 6.12 Percent distribution of ever worked elderly age 60 and above who have officially retired by work-related pension status, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Currently receiving pension* | Expected to receive pension in future* | Neither currently receiving nor expected to receive in future* | Number        |
|---------------------------|------------------------------|----------------------------------------|----------------------------------------------------------------|---------------|
| <b>India</b>              | <b>18.7</b>                  | <b>3.0</b>                             | <b>78.3</b>                                                    | <b>10,037</b> |
| <b>North</b>              |                              |                                        |                                                                |               |
| Chandigarh                | 64.6                         | 5.1                                    | 30.4                                                           | 144           |
| Delhi                     | 80.3                         | 3.8                                    | 15.9                                                           | 73            |
| Haryana                   | 93.1                         | 2.8                                    | 4.1                                                            | 57            |
| Himachal Pradesh          | 42.7                         | 4.7                                    | 52.6                                                           | 323           |
| Jammu & Kashmir           | 43.0                         | 2.5                                    | 54.5                                                           | 165           |
| Punjab                    | 19.3                         | 1.3                                    | 79.4                                                           | 239           |
| Rajasthan                 | 24.2                         | 3.3                                    | 72.5                                                           | 278           |
| Uttarakhand               | 34.6                         | 9.9                                    | 55.4                                                           | 260           |
| <b>Central</b>            |                              |                                        |                                                                |               |
| Chhattisgarh              | 18.6                         | 4.7                                    | 76.7                                                           | 195           |
| Madhya Pradesh            | 25.6                         | 5.8                                    | 68.6                                                           | 238           |
| Uttar Pradesh             | 26.3                         | 2.4                                    | 71.3                                                           | 504           |
| <b>East</b>               |                              |                                        |                                                                |               |
| Bihar                     | 10.6                         | 3.0                                    | 86.4                                                           | 717           |
| Jharkhand                 | 19.1                         | 2.8                                    | 78.2                                                           | 511           |
| Odisha                    | 12.1                         | 0.7                                    | 87.2                                                           | 476           |
| West Bengal               | 16.5                         | 3.0                                    | 80.5                                                           | 562           |
| <b>Northeast</b>          |                              |                                        |                                                                |               |
| Arunachal Pradesh         | 7.0                          | 1.0                                    | 92.0                                                           | 132           |
| Assam                     | 21.5                         | 6.2                                    | 72.4                                                           | 311           |
| Manipur                   | 22.9                         | 4.1                                    | 73.0                                                           | 290           |
| Meghalaya                 | 14.5                         | 3.2                                    | 82.4                                                           | 167           |
| Mizoram                   | 21.8                         | 8.4                                    | 69.7                                                           | 218           |
| Nagaland                  | 18.4                         | 8.5                                    | 73.1                                                           | 378           |
| Tripura                   | 12.0                         | 1.4                                    | 86.6                                                           | 187           |
| <b>West</b>               |                              |                                        |                                                                |               |
| Dadra & Nagar Haveli      | 15.9                         | 2.6                                    | 81.5                                                           | 139           |
| Daman & Diu               | 50.8                         | 2.7                                    | 46.5                                                           | 107           |
| Goa                       | 39.4                         | 2.8                                    | 57.8                                                           | 124           |
| Gujarat                   | 20.7                         | 6.1                                    | 73.2                                                           | 257           |
| Maharashtra               | 16.1                         | 1.0                                    | 82.9                                                           | 785           |
| <b>South</b>              |                              |                                        |                                                                |               |
| Andaman & Nicobar Islands | 41.3                         | 6.3                                    | 52.4                                                           | 110           |
| Andhra Pradesh            | 11.0                         | 2.2                                    | 86.8                                                           | 399           |
| Karnataka                 | 21.6                         | 1.6                                    | 76.9                                                           | 144           |
| Kerala                    | 29.2                         | 7.0                                    | 63.8                                                           | 279           |
| Lakshadweep               | 62.3                         | 7.2                                    | 30.5                                                           | 100           |
| Puducherry                | 28.7                         | 1.2                                    | 70.1                                                           | 202           |
| Tamil Nadu                | 20.8                         | 4.3                                    | 74.9                                                           | 602           |
| Telangana                 | 10.8                         | 3.8                                    | 85.4                                                           | 364           |

\*Elderly age 60 and above who ever worked and have officially retired from organized sector of employment.

### Key findings: retirement and pension

- Seven percent of the elderly age 60 and above are officially retired from any organised sector of employment.
- The proportion of the elderly age 60 and above who have officially retired from the organised sector of employment is the highest in Chandigarh (27%), followed by Himachal Pradesh (23%), Uttarakhand (16%), and Lakshadweep (15%). This proportion is low in the states of Arunachal Pradesh (3%), Karnataka (3%), and Telangana (5%). A similar state-wise pattern is observed for the elderly age 60 and above who are currently receiving a pension.
- One-fifth (19%) of officially retired elderly age 60 and above are currently receiving a pension. This figure ranges from 93% in Haryana, followed by 80% in Delhi, 11% in Bihar, and 7% in Arunachal Pradesh.
- More than half of the elderly age 60 and above (54%) with 10 or more years of schooling who are officially retired are receiving a pension, compared with just 4% of those with no schooling.

## 7. Chronic Health Conditions

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Ageing is a multifactorial process characterised by a decline in physical and mental health, occurrence of degenerative changes including decline in body functions, and high vulnerability to chronic diseases and health conditions. The burden of disability and death increases with age and, by age of 60, the prevalence of age-related losses in hearing, vision, and mobility become prominent. In addition, the occurrence of non-communicable diseases (NCDs), including heart disease, stroke, chronic respiratory disorders, cancer, and dementia, adds to the burden of disease in a significant way in older age. These diseases are not only prevalent in higher-income countries; in fact, the burden associated with these conditions in older people is generally far higher in low and middle-income countries (WHO, 2015). The prevalence of chronic non-communicable diseases (NCDs) is increasing worldwide. In 2016, NCDs are estimated to account for 71% of 57 million global deaths, with cardiovascular diseases (CVDs) contributing to 31% (NCD Countdown 2030 collaborators, 2018).

Studies show that India's burden of non-communicable diseases (NCDs) is escalating (Arokiasamy, 2018). In India, NCDs account for 63% of all deaths; deaths from CVDs, chronic respiratory diseases, cancers, and other NCDs account for 27%, 11%, 9%, and 13%, respectively (WHO, 2018a). Also, while NCDs typically occur in individuals aged 55 years or older in many developed countries, their onset occurs a decade earlier in India and are quite prevalent in the ages 45-55 years. Exacerbating this problem are the issues of multiple chronic conditions and the fact many diseases remain undiagnosed due to lack of awareness and insufficient health-care access (Sen, 2002; Vellakkal et al., 2013; Arokiasamy et al., 2017). At the same time, infectious and parasitic diseases still pose substantial challenges to the public health system in India, resulting in a double burden of disease and a substantial share of the global burden of disease (Arokiasamy, 2018).

Understanding the burden of chronic health conditions such as cardiovascular diseases, diabetes, chronic respiratory diseases, bone diseases, and cancers, as well as their risk factors, is important for developing appropriate and effective healthcare policies for the prevention and control of NCDs. However, there is a lack of population-based estimates of chronic health conditions for India and its states/UTs and by socioeconomic spectrum based on internationally comparable designs and tools. In consideration of this void, one of the main objectives of the LASI is to assess chronic health conditions of the older adult population in India by states/UTs including socioeconomic differentials in health. To address the lack of comparable data on physical and mental health conditions, in the LASI, comprehensive data was collected on chronic health conditions and other health measures using internationally comparable design and standardised instruments and survey protocols. This chapter presents the health profile of older adults age 45-59 and the elderly age 60 and above including self-reported chronic health conditions and organ-related health conditions in India

### 7.1 GENERAL HEALTH STATUS

In the LASI, general health status was measured using self-rated health (SRH) question, which is a subjective assessment of health status. SRH is simple, easy to administer, and a known predictor of mortality (Idler and Benyamini, 1997; DeSalvo et al., 2006). Measurement of SRH is an essential component of health assessment of the elderly age 60 and above. Self-rated health captures the full range of illnesses a person has and the possible symptoms of undiagnosed diseases (Idler and Benyamini, 1997). In the LASI, respondents were asked, 'Overall, how is your health in general? Would you say it is very good, good, fair, poor or very poor?' The five possible responses were categorised into three groups as follows: good ('very good' and 'good'), moderate (fair), and poor ('poor' and 'very poor').

Table 7.1 presents the percent distribution of older adults and elderly by self-rated health (SRH) status: good, moderate, and poor. Overall, about two fifths (39%) of older adults age 45 and above in India reported good SRH, and a sixth of older adults age 45 and above (18%) reported poor SRH; the remaining proportion of older adults reported moderate health (44%). The prevalence of poor SRH is two times higher among the elderly age 60 and above (24%) than older adults age 45-59 (12%). Among the elderly age 60 and above, the prevalence of poor SRH is higher among women (26%) than men (22%), and the prevalence rate shows a decreasing trend among the elderly with educational attainment, from 27% among those with no schooling to 16% among those with 10 or more years of schooling. The prevalence of poor SRH does not show any consistent pattern with MPCE quintile. Compared to those who worked in past but currently not working (30%) and never worked (26%), currently working (16%) elderly age 60 and above have lower prevalence of poor SRH.

Among the elderly age 60 and above, the prevalence of good SRH is higher among those residing in urban areas (34%) compared to those in rural areas (29%). The prevalence is also higher among elderly men (34%) than among elderly women (28%). A higher proportion of currently married elderly (34%) and those living with spouse and children only (35%) reported good SRH.

Cross-state variations in self-rated health indicate that the prevalence of poor SRH among older adults age 45 and above is a quarter or more in the demographically advanced states/UTs of Kerala (39%), Tamil Nadu (38%), and Puducherry (25%) (Table 7.2), whereas more than half of elderly age 60 and above reported poor SRH in the states of Kerala (53%) and Tamil Nadu (53%). More than half of elderly age 60 and above reported good SRH in Meghalaya (65%), Daman & Diu (56%), Nagaland (54%), Gujarat (53%), and Arunachal Pradesh (52%).

#### Key findings: general health status

- Overall in India, a quarter of elderly age 60 and above and a sixth of older adults age 45 and above reported poor self-rated health (SRH). More than half of elderly age 60 and above reported poor SRH in the states of Kerala (53%) and Tamil Nadu (53%).
- Among elderly age 60 and above, women than men, those with no schooling than those with 10 or more years of schooling and those currently not working compared to those working are more likely to report poor SRH.

**Table 7.1 Self-rated health<sup>1</sup>: percent distribution of older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                     | Age 45-59*  |             |             |               | Age ≥ 60    |             |             |               | Total       |             |             |               |
|------------------------------------------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|
|                                                | Good        | Moderate    | Poor        | Number        | Good        | Moderate    | Poor        | Number        | Good        | Moderate    | Poor        | Number        |
| <b>Place of residence</b>                      |             |             |             |               |             |             |             |               |             |             |             |               |
| Rural                                          | 44.0        | 43.1        | 12.9        | 25,636        | 29.4        | 45.3        | 25.2        | 20,289        | 37.2        | 44.1        | 18.7        | 45,925        |
| Urban                                          | 48.3        | 41.3        | 10.4        | 14,877        | 33.7        | 44.6        | 21.7        | 10,509        | 42.2        | 42.7        | 15.2        | 25,386        |
| <b>Sex</b>                                     |             |             |             |               |             |             |             |               |             |             |             |               |
| Male                                           | 49.6        | 38.8        | 11.6        | 15,348        | 33.9        | 43.9        | 22.3        | 14,778        | 41.5        | 41.4        | 17.1        | 30,126        |
| Female                                         | 43.0        | 44.6        | 12.3        | 25,165        | 27.8        | 46.2        | 26.0        | 16,020        | 36.8        | 45.3        | 17.9        | 41,185        |
| <b>Marital status</b>                          |             |             |             |               |             |             |             |               |             |             |             |               |
| Currently married                              | 46.9        | 41.7        | 11.4        | 35,287        | 33.7        | 44.2        | 22.1        | 19,629        | 42.0        | 42.6        | 15.4        | 54,916        |
| Widowed                                        | 37.9        | 45.8        | 16.3        | 3,847         | 25.5        | 47.1        | 27.3        | 10,376        | 28.5        | 46.8        | 24.7        | 14,223        |
| Divorced/Separated/<br>Deserted/Others         | 29.6        | 53.7        | 16.7        | 1,379         | 29.0        | 37.9        | 33.1        | 793           | 29.4        | 48.0        | 22.7        | 2,172         |
| <b>Living arrangement</b>                      |             |             |             |               |             |             |             |               |             |             |             |               |
| Living alone                                   | 36.1        | 48.3        | 15.6        | 686           | 24.1        | 40.9        | 35.1        | 1,597         | 26.8        | 42.5        | 30.6        | 2,283         |
| Living with spouse<br>and/or others            | 42.1        | 45.5        | 12.5        | 4,514         | 32.0        | 43.7        | 24.4        | 6,091         | 36.2        | 44.4        | 19.4        | 10,605        |
| Living with spouse<br>and children             | 47.5        | 41.2        | 11.3        | 30,122        | 34.6        | 44.4        | 20.9        | 13,305        | 43.5        | 42.2        | 14.4        | 43,427        |
| Living with children<br>and others             | 38.3        | 45.0        | 16.8        | 4,055         | 26.1        | 48.7        | 25.2        | 8,167         | 29.6        | 47.6        | 22.7        | 12,222        |
| Living with others<br>only                     | 34.7        | 53.3        | 12.0        | 1,136         | 26.1        | 42.0        | 31.9        | 1,638         | 29.4        | 46.2        | 24.4        | 2,774         |
| <b>Religion</b>                                |             |             |             |               |             |             |             |               |             |             |             |               |
| Hindu                                          | 46.2        | 42.2        | 11.6        | 29,744        | 31.2        | 45.3        | 23.5        | 22,585        | 39.3        | 43.6        | 17.1        | 52,329        |
| Muslim                                         | 41.9        | 42.5        | 15.5        | 4,898         | 29.3        | 43.9        | 26.7        | 3,637         | 36.5        | 43.1        | 20.3        | 8,535         |
| Christian                                      | 43.9        | 43.2        | 12.9        | 4,038         | 26.2        | 37.3        | 36.5        | 3,053         | 36.1        | 40.6        | 23.3        | 7,091         |
| Others                                         | 42.8        | 47.7        | 9.5         | 1,833         | 26.4        | 51.5        | 22.1        | 1,523         | 34.9        | 49.5        | 15.6        | 3,356         |
| Caste/tribe                                    |             |             |             |               |             |             |             |               |             |             |             |               |
| Scheduled tribe                                | 51.7        | 39.8        | 8.5         | 7,300         | 33.5        | 48.1        | 18.4        | 5,044         | 43.9        | 43.4        | 12.7        | 12,344        |
| Scheduled caste                                | 42.3        | 44.0        | 13.7        | 6,855         | 27.9        | 44.6        | 27.5        | 5,026         | 35.8        | 44.3        | 19.9        | 11,881        |
| Other backward<br>class                        | 45.1        | 42.3        | 12.6        | 15,203        | 30.6        | 44.0        | 25.4        | 11,657        | 38.6        | 43.0        | 18.4        | 26,860        |
| None of the above                              | 46.4        | 42.6        | 11.0        | 11,155        | 31.8        | 46.4        | 21.7        | 9,071         | 39.5        | 44.4        | 16.1        | 20,226        |
| <b>Education</b>                               |             |             |             |               |             |             |             |               |             |             |             |               |
| No schooling                                   | 42.4        | 43.8        | 13.9        | 16,194        | 28.0        | 45.4        | 26.5        | 16,463        | 34.9        | 44.6        | 20.4        | 32,657        |
| Less than 5 years<br>complete                  | 41.0        | 44.7        | 14.3        | 4,246         | 30.1        | 44.3        | 25.7        | 3,713         | 35.7        | 44.5        | 19.8        | 7,959         |
| 5-9 years complete                             | 46.6        | 41.1        | 12.3        | 10,846        | 32.1        | 45.3        | 22.6        | 5,919         | 41.1        | 42.7        | 16.2        | 16,765        |
| 10 or more years<br>complete                   | 52.4        | 40.4        | 7.2         | 9,227         | 40.0        | 44.3        | 15.7        | 4,703         | 48.1        | 41.7        | 10.1        | 13,930        |
| <b>Work status</b>                             |             |             |             |               |             |             |             |               |             |             |             |               |
| Currently working                              | 48.5        | 42.3        | 9.2         | 23,579        | 37.3        | 47.1        | 15.6        | 9,258         | 45.1        | 43.8        | 11.2        | 32,837        |
| Worked in past<br>but currently not<br>working | 34.2        | 39.1        | 26.8        | 4,515         | 28.0        | 42.3        | 29.6        | 12,967        | 29.6        | 41.5        | 28.9        | 17,482        |
| Never worked                                   | 44.0        | 44.2        | 11.8        | 12,419        | 27.0        | 47.2        | 25.8        | 8,573         | 36.6        | 45.5        | 17.9        | 20,992        |
| <b>MPCE quintile</b>                           |             |             |             |               |             |             |             |               |             |             |             |               |
| Poorest                                        | 46.9        | 42.6        | 10.5        | 7,621         | 27.8        | 45.8        | 26.4        | 6,318         | 37.8        | 44.1        | 18.1        | 13,939        |
| Poorer                                         | 46.7        | 42.2        | 11.0        | 7,985         | 30.2        | 45.7        | 24.2        | 6,332         | 39.0        | 43.8        | 17.1        | 14,317        |
| Middle                                         | 44.6        | 42.5        | 12.9        | 8,074         | 33.5        | 44.6        | 22.0        | 6,288         | 39.5        | 43.5        | 17.1        | 14,362        |
| Richer                                         | 45.2        | 42.3        | 12.5        | 8,471         | 31.0        | 44.9        | 24.0        | 6,053         | 38.9        | 43.5        | 17.7        | 14,524        |
| Richest                                        | 43.9        | 42.7        | 13.4        | 8,362         | 31.3        | 44.3        | 24.4        | 5,807         | 38.7        | 43.4        | 17.9        | 14,169        |
| <b>Total</b>                                   | <b>45.5</b> | <b>42.5</b> | <b>12.1</b> | <b>40,513</b> | <b>30.7</b> | <b>45.1</b> | <b>24.2</b> | <b>30,798</b> | <b>38.8</b> | <b>43.7</b> | <b>17.6</b> | <b>71,311</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Self-rated health includes five possible responses grouped into three categories: good (includes respondent's choices 'very good' & 'good'), moderate (includes respondent's choice 'fair') and poor (includes respondent's choices 'poor' & 'very poor').

**Table 7.2 Self-rated health<sup>1</sup>: percent distribution of older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*  |             |             |               | Age ≥ 60    |             |             |               | Total       |             |             |               |
|---------------------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|
|                           | Good        | Moderate    | Poor        | Number        | Good        | Moderate    | Poor        | Number        | Good        | Moderate    | Poor        | Number        |
| <b>India</b>              | <b>45.5</b> | <b>42.5</b> | <b>12.1</b> | <b>40,513</b> | <b>30.7</b> | <b>45.1</b> | <b>24.2</b> | <b>30,798</b> | <b>38.8</b> | <b>43.7</b> | <b>17.6</b> | <b>71,311</b> |
| <b>North</b>              |             |             |             |               |             |             |             |               |             |             |             |               |
| Chandigarh                | 63.7        | 31.2        | 5.2         | 625           | 43.8        | 39.9        | 16.3        | 388           | 55.8        | 34.6        | 9.6         | 1,013         |
| Delhi                     | 64.4        | 28.6        | 7.1         | 822           | 40.5        | 44.8        | 14.7        | 495           | 55.3        | 34.7        | 10.0        | 1,317         |
| Haryana                   | 52.5        | 34.6        | 12.9        | 1,042         | 36.8        | 40.3        | 23.0        | 835           | 45.0        | 37.3        | 17.7        | 1,877         |
| Himachal Pradesh          | 48.8        | 38.9        | 12.4        | 760           | 30.1        | 44.1        | 25.9        | 609           | 40.0        | 41.3        | 18.7        | 1,369         |
| Jammu & Kashmir           | 42.9        | 43.5        | 13.5        | 878           | 30.9        | 37.1        | 32.0        | 714           | 37.1        | 40.4        | 22.5        | 1,592         |
| Punjab                    | 32.6        | 53.5        | 13.9        | 1,103         | 21.6        | 55.6        | 22.8        | 991           | 27.4        | 54.5        | 18.1        | 2,094         |
| Rajasthan                 | 58.7        | 28.6        | 12.7        | 1,158         | 38.6        | 40.9        | 20.6        | 1,069         | 48.6        | 34.8        | 16.6        | 2,227         |
| Uttarakhand               | 34.8        | 54.1        | 11.1        | 715           | 23.5        | 57.2        | 19.3        | 637           | 29.2        | 55.6        | 15.2        | 1,352         |
| <b>Central</b>            |             |             |             |               |             |             |             |               |             |             |             |               |
| Chhattisgarh              | 62.6        | 33.4        | 4.0         | 1,270         | 42.6        | 47.6        | 9.8         | 760           | 55.0        | 38.8        | 6.2         | 2,030         |
| Madhya Pradesh            | 50.4        | 32.9        | 16.7        | 1,595         | 40.4        | 36.6        | 23.0        | 1,290         | 45.7        | 34.7        | 19.7        | 2,885         |
| Uttar Pradesh             | 44.5        | 41.2        | 14.3        | 2,379         | 28.8        | 46.1        | 25.1        | 2,096         | 36.8        | 43.6        | 19.5        | 4,475         |
| <b>East</b>               |             |             |             |               |             |             |             |               |             |             |             |               |
| Bihar                     | 53.8        | 37.1        | 9.1         | 1,703         | 34.3        | 44.3        | 21.5        | 1,769         | 43.3        | 41.0        | 15.7        | 3,472         |
| Jharkhand                 | 59.1        | 30.9        | 10.1        | 1,293         | 36.3        | 43.6        | 20.1        | 1,153         | 48.1        | 37.0        | 14.9        | 2,446         |
| Odisha                    | 48.0        | 44.1        | 7.9         | 1,668         | 24.2        | 53.1        | 22.7        | 1,212         | 37.6        | 48.0        | 14.4        | 2,880         |
| West Bengal               | 29.4        | 56.1        | 14.5        | 2,374         | 17.5        | 48.5        | 34.0        | 1,501         | 24.6        | 53.0        | 22.3        | 3,875         |
| <b>Northeast</b>          |             |             |             |               |             |             |             |               |             |             |             |               |
| Arunachal Pradesh         | 70.3        | 25.8        | 3.9         | 896           | 52.3        | 36.8        | 10.9        | 316           | 66.0        | 28.5        | 5.6         | 1,212         |
| Assam                     | 54.0        | 38.3        | 7.6         | 1,539         | 28.9        | 47.9        | 23.2        | 798           | 45.1        | 41.7        | 13.1        | 2,337         |
| Manipur                   | 57.1        | 37.1        | 5.8         | 757           | 37.5        | 47.7        | 14.8        | 589           | 48.1        | 42.0        | 9.9         | 1,346         |
| Meghalaya                 | 77.7        | 19.9        | 2.4         | 552           | 65.3        | 29.9        | 4.8         | 410           | 72.5        | 24.1        | 3.4         | 962           |
| Mizoram                   | 57.1        | 34.8        | 8.1         | 709           | 49.3        | 37.7        | 13.1        | 491           | 53.7        | 36.0        | 10.2        | 1,200         |
| Nagaland                  | 60.4        | 33.0        | 6.6         | 705           | 53.7        | 36.3        | 10.0        | 591           | 57.1        | 34.6        | 8.3         | 1,296         |
| Tripura                   | 32.3        | 56.6        | 11.2        | 732           | 17.0        | 58.4        | 24.6        | 459           | 26.3        | 57.3        | 16.5        | 1,191         |
| <b>West</b>               |             |             |             |               |             |             |             |               |             |             |             |               |
| Dadra & Nagar Haveli      | 61.9        | 30.8        | 7.3         | 633           | 47.9        | 35.3        | 16.7        | 446           | 56.4        | 32.5        | 11.0        | 1,079         |
| Daman & Diu               | 66.4        | 25.4        | 8.2         | 556           | 55.9        | 31.6        | 12.5        | 425           | 61.4        | 28.3        | 10.2        | 981           |
| Goa                       | 59.5        | 27.8        | 12.7        | 784           | 36.2        | 31.9        | 31.9        | 619           | 49.1        | 29.6        | 21.3        | 1,403         |
| Gujarat                   | 64.8        | 27.1        | 8.1         | 1,336         | 53.2        | 33.1        | 13.7        | 968           | 59.6        | 29.8        | 10.6        | 2,304         |
| Maharashtra               | 45.2        | 48.1        | 6.7         | 2,165         | 28.7        | 54.9        | 16.4        | 1,762         | 37.1        | 51.4        | 11.5        | 3,927         |
| <b>South</b>              |             |             |             |               |             |             |             |               |             |             |             |               |
| Andaman & Nicobar Islands | 68.2        | 26.6        | 5.2         | 717           | 48.4        | 43.5        | 8.1         | 494           | 60.3        | 33.3        | 6.4         | 1,211         |
| Andhra Pradesh            | 48.4        | 40.9        | 10.6        | 1,560         | 33.0        | 42.6        | 24.4        | 1,085         | 42.0        | 41.6        | 16.4        | 2,645         |
| Karnataka                 | 50.4        | 42.9        | 6.7         | 1,408         | 40.1        | 48.9        | 11.0        | 978           | 46.4        | 45.3        | 8.4         | 2,386         |
| Kerala                    | 31.3        | 44.4        | 24.3        | 1,272         | 13.5        | 33.7        | 52.9        | 1,174         | 22.2        | 38.9        | 39.0        | 2,446         |
| Lakshadweep               | 62.8        | 29.4        | 7.9         | 633           | 41.8        | 40.2        | 18.0        | 495           | 52.8        | 34.5        | 12.7        | 1,128         |
| Puducherry                | 26.7        | 58.2        | 15.0        | 783           | 15.4        | 48.7        | 35.9        | 625           | 21.5        | 53.8        | 24.8        | 1,408         |
| Tamil Nadu                | 21.0        | 53.7        | 25.4        | 1,988         | 11.0        | 35.8        | 53.1        | 1,508         | 16.4        | 45.6        | 38.0        | 3,496         |
| Telangana                 | 50.3        | 39.1        | 10.6        | 1,403         | 37.1        | 41.6        | 21.3        | 1,046         | 44.4        | 40.2        | 15.4        | 2,449         |

**Notes**

\* Including spouse irrespective of age

<sup>1</sup> Self-rated health includes five possible responses grouped into three categories: good (includes respondent's choices 'very good' & 'good'), moderate (includes respondent's choice 'fair') and poor (includes respondent's choices 'poor' & 'very poor').



## 7.2 SELF-REPORTED DIAGNOSED CHRONIC HEALTH CONDITIONS

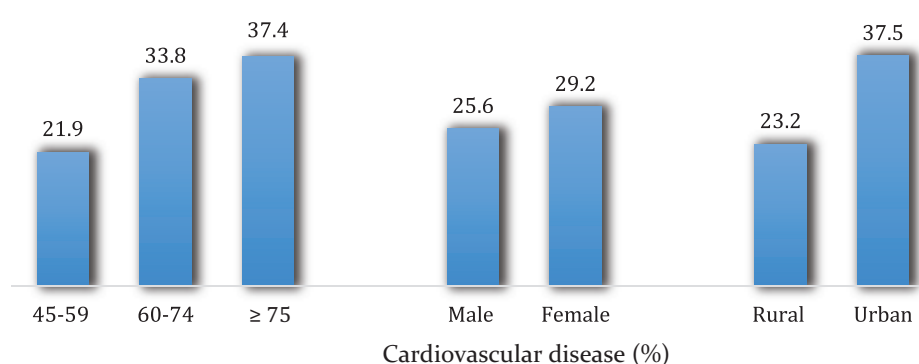
To assess the prevalence of chronic health conditions, information was collected on nine self-reported diagnosed chronic health conditions. The prevalence of chronic health conditions/diseases was assessed based on ever diagnosed condition/disease and diagnosed by health professionals such as MBBS, MD, BDS, and AYUSH only. Respondents were asked ‘Has any health professional ever diagnosed/told you that you have the following chronic conditions or diseases’? The nine chronic conditions included hypertension (HT) or high blood pressure, diabetes or high blood sugar, cancer or a malignant tumour, chronic lung disease, chronic heart diseases, stroke, bone/joint disease, neurological/psychiatric diseases, and high cholesterol. For those who reported that they have been diagnosed with a disease by a medical professional, a set of additional questions relating to the diagnosing physician, the date of diagnosis, and if currently taking treatment were asked. Furthermore, information was collected on other chronic conditions such as thyroid, skin, chronic gastrointestinal, and organ-related diseases. In this chapter, the self-reported prevalence for each chronic disease (conditions diagnosed by a health professional including MBBS, BDS or AYUSH) is presented.

### 7.2.1 Cardiovascular diseases

Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels. They include hypertension, stroke, and chronic heart diseases such as rheumatic heart disease, congenital/structural disorder, conduction disorder/cardiac arrhythmias, congestive heart failure, and coronary heart disease/blockage. In 2016, CVDs contributed to 28% of the total deaths and 14% of the total disability-adjusted life years (DALYs) in India, the largest share of mortality and morbidity (Prabhakaran et al., 2018).

The self-reported prevalence of CVDs presented in this section is calculated by considering any one of the self-reported diagnosed conditions of hypertension, stroke, and chronic heart diseases. Table 7.3 presents the self-reported prevalence of diagnosed CVDs in India by background characteristics. Overall, the self-reported prevalence of diagnosed CVDs is 28% for the older adults age 45 and above. The prevalence rate increases with age from 22% in those age 45-59 to 34% in those age 60-74 and further to 37% in those age 75 and above (Figure 7.1). Among the elderly age 60 and above, the self-reported prevalence of diagnosed CVDs is higher among women (38%) than among men (31%) and is much higher among those residing in urban areas (50%) than in rural areas (29%). Among the elderly age 60 and above, the self-reported prevalence of diagnosed CVDs increases with education from 28% among those with no schooling to 50% in those with 10 or more years of schooling. Similarly, the prevalence increases with MPCE quintile from 27% in the poorest quintile to 45% in the richest quintile.

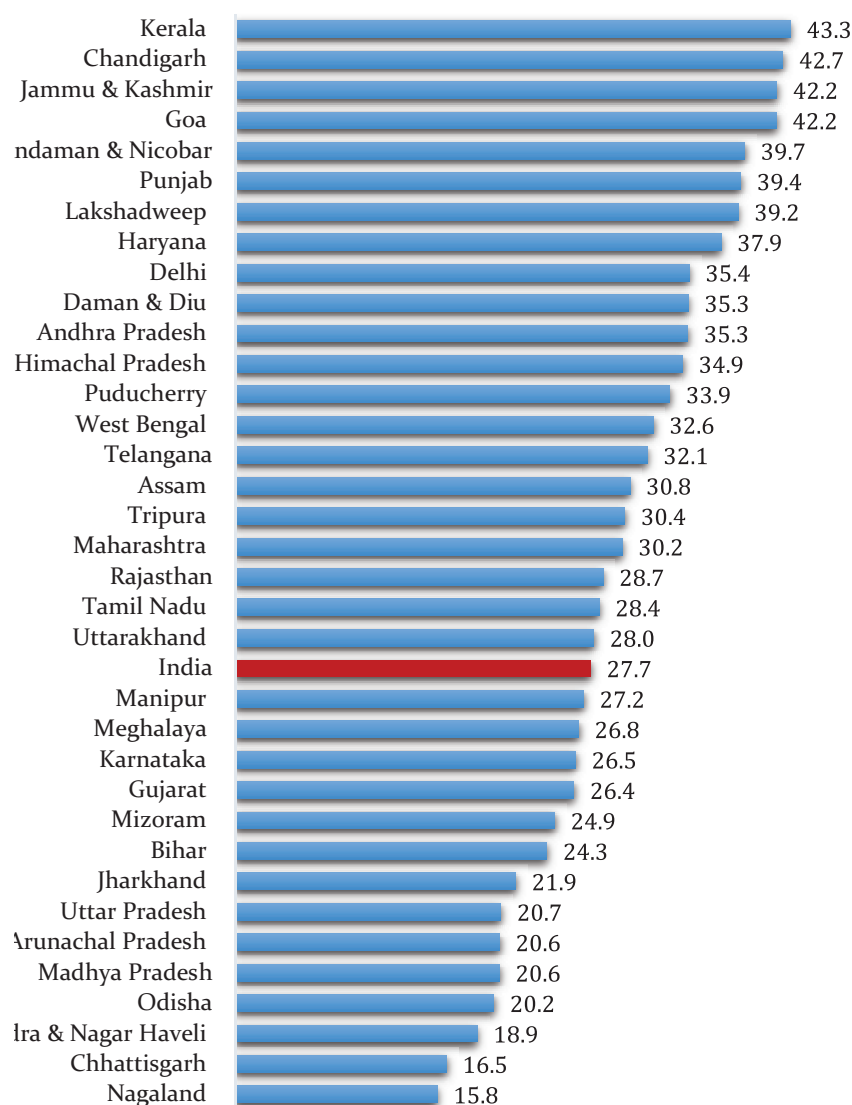
**Figure 7.1 Self-reported prevalence (%) of diagnosed cardiovascular diseases (CVDs) among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

Cross-state variations show that the self-reported prevalence of diagnosed CVDs among older adults age 45 and above varies widely, ranging from 43% in Kerala and Chandigarh to 16% in Nagaland (Table 7.4). More than half of the elderly age 60 and above reported that they have been diagnosed with CVDs in the states/UTs of Goa (60%), Kerala (57%), Chandigarh (55%), Andaman & Nicobar (51%), and Jammu and Kashmir (51%).

**Figure 7.2 Self-reported prevalence (%) of diagnosed cardiovascular diseases (CVDs) among older adults age 45 and above\*, states/UTs, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

### 7.2.2 Hypertension

Hypertension is a long-term medical condition in which the blood pressure in the arteries is persistently elevated. The prevalence of hypertension tends to increase with age. Hypertension has long been recognised as one of the major risk factors for cardiovascular disease and premature deaths worldwide. Further, hypertension is one of the most common lifestyle ‘silent killer’ diseases today, diagnosed in every third person. Fewer than half of those with hypertension are aware of their condition. Hypertension is estimated to account for 10.8% of all deaths and 4.6% of DALYs in India (MoHFW, 2018)

Table 7.3 presents the self-reported prevalence of diagnosed hypertension in India by background characteristics. The self-reported prevalence of diagnosed hypertension among older adults age 45 and above is 26%; the prevalence rate is higher for elderly age 60 and above (32%) than older adults age 45-59 (21%). Among elderly age 60 and above, self-reported diagnosed hypertension is more prevalent among women (36%) than men (27%) and among those residing in urban areas (47%) than those in rural areas (26%).

More than a third (36%) of widowed elderly age 60 and above have been diagnosed with hypertension. The prevalence of diagnosed hypertension increases with education and MPCE quintile; 47% of the elderly age 60 and above with 10 or more years of schooling compared with 26% among those with no schooling and 42% of those in the richest MPCE quintile compared to 25% of those in the poorest MPCE quintile reported that they have been diagnosed with hypertension.

The self-reported prevalence rate of diagnosed hypertension among older adults age 45 and above ranges from 41% in Goa to 15% in Nagaland (Table 7.4). The self-reported prevalence of diagnosed hypertension is higher in northern and demographically advanced southern states than that in other states. More than half of the elderly age 60 and above reported that they have been diagnosed with hypertension in the demographically advanced states/UTs of Goa (58%), Kerala (53%), and Chandigarh (50%). In comparison, the self-reported prevalence rate of hypertension is lower in the states/UTs of Bihar (25%), Dadra & Nagar Haveli (24%), Madhya Pradesh (22%), Uttar Pradesh (20%), Chhattisgarh (20%), and Nagaland (15%).

### 7.2.3 Chronic heart diseases

In the LASI, information was collected on chronic heart diseases including rheumatic heart disease, congenital/structural disorder, conduction disorder/ cardiac arrhythmias, congestive heart failure, and coronary artery disease/blockage. The self-reported prevalence of diagnosed chronic heart diseases in India among older adults age 45 and above is 3.6%. The prevalence rate is more than two times higher among elderly age 60 and above (5.2%) than among older adults age 45-59 (2.2%) (Table 7.3). The rural-urban difference is more pronounced among elderly age 60 or above, with 9% residing in urban areas having been diagnosed with chronic heart diseases compared with only 4% in rural areas. Further, the prevalence rate of diagnosed heart diseases is lower among elderly women (4.6%) than among elderly men (5.8%) age 60 and above. The self-reported prevalence of diagnosed heart disease among elderly age 60 and above increases with education and MPCE quintile. One in ten of the elderly age 60 and above with 10 or more years of schooling (12%) and in the richest MPCE quintile (10%) reported that they have been diagnosed with chronic heart diseases.

Table 7.4 presents the prevalence of chronic heart diseases across states/UTs of India. Overall, the self-reported prevalence of diagnosed chronic heart diseases is markedly higher in the states/UTs of Jammu & Kashmir (8.8%), Chandigarh (8.8%) and Kerala (8.4%). More than 10% of elderly age 60 and above in the states/UTs of Chandigarh (17%), Kerala (13%), and Jammu & Kashmir (11%) reported that they have been diagnosed with chronic heart disease.

#### **7.2.4 Stroke**

Stroke, also known as cerebrovascular accident, is caused by a sudden partial or total disruption of blood supply to a part of the brain. This may result from either blockage (ischemic stroke) or rupture of a blood vessel (haemorrhagic stroke). It can cause permanent or temporary paralysis (inability to move, usually one side of the body), loss of speech, and unconsciousness. According to the GBD study, stroke accounted for 7.1% of total deaths and 3.5% of total DALYs in India (Prabhakaran et al., 2018).

The LASI survey participants who reported that they have been diagnosed with stroke were asked if they are currently receiving any physical or occupational therapy and on subsequent stroke and any disability due to stroke. Table 7.3 presents the self-reported prevalence of stroke by background characteristics in India. Overall, the self-reported prevalence of diagnosed stroke among older adults age 45 and above is 2%. The prevalence rate of stroke is higher among elderly age 60 and above (2.7%) compared to older adults age 45-59 (1.0%). Among elderly age 60 years and above, the prevalence of self-reported stroke is slightly higher among men (3.3%) than women (2.2%) and among those in urban areas (3.1%) than those in rural areas (2.5%).

The cross-state variations in the prevalence of stroke among older adults age 45 and above are shown in Table 7.4. The self-reported prevalence of diagnosed stroke ranges from 3.5% in West Bengal to 0.5% in Meghalaya. The self-reported prevalence of stroke among elderly age 60 and above is markedly higher in Goa (6.4%), West Bengal (6.0%), and Lakshadweep (4.6%).

**Table 7.3 Self-reported prevalence (%) of diagnosed hypertension, heart diseases, stroke and cardiovascular diseases (CVDs) among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*   |                |        |       |        | Age ≥ 60     |                |        |       |        | Total        |                |        |       |        |
|------------------------------------------|--------------|----------------|--------|-------|--------|--------------|----------------|--------|-------|--------|--------------|----------------|--------|-------|--------|
|                                          | Hypertension | Heart Diseases | Stroke | CVDs¹ | Number | Hypertension | Heart Diseases | Stroke | CVDs¹ | Number | Hypertension | Heart Diseases | Stroke | CVDs¹ | Number |
| <b>Place of residence</b>                |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Rural                                    | 17.0         | 1.9            | 0.9    | 18.4  | 25,740 | 25.9         | 3.7            | 2.5    | 28.5  | 20,679 | 21.2         | 2.8            | 1.7    | 23.2  | 46,419 |
| Urban                                    | 27.4         | 2.8            | 1.3    | 28.7  | 14,923 | 46.9         | 8.7            | 3.1    | 49.6  | 10,688 | 35.6         | 5.3            | 2.0    | 37.5  | 25,611 |
| <b>Sex</b>                               |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Male                                     | 18.1         | 2.5            | 1.7    | 20.1  | 15,419 | 27.4         | 5.8            | 3.3    | 30.9  | 15,035 | 22.9         | 4.2            | 2.5    | 25.6  | 30,454 |
| Female                                   | 21.9         | 2.1            | 0.6    | 23.0  | 25,244 | 36.2         | 4.6            | 2.2    | 38.0  | 16,332 | 27.8         | 3.1            | 1.3    | 29.2  | 41,576 |
| <b>Marital status</b>                    |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Currently married                        | 20.0         | 2.1            | 1.1    | 21.4  | 35,368 | 29.9         | 5.6            | 2.6    | 32.8  | 19,856 | 23.7         | 3.4            | 1.7    | 25.6  | 55,224 |
| Widowed                                  | 26.4         | 3.7            | 0.7    | 27.7  | 3,863  | 36.0         | 4.6            | 2.8    | 38.2  | 10,690 | 33.7         | 4.4            | 2.3    | 35.7  | 14,553 |
| Divorced/Separated/Deserted/Others       | 16.9         | 1.1            | 0.7    | 18.0  | 1,432  | 25.4         | 2.2            | 1.5    | 27.1  | 821    | 20.0         | 1.5            | 1.0    | 21.3  | 2,253  |
| <b>Living arrangement</b>                |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Living alone                             | 24.3         | 1.9            | [0.3]  | 26.0  | 689    | 32.7         | 2.7            | 2.0    | 34.3  | 1,618  | 30.8         | 2.5            | 1.6    | 32.5  | 2,307  |
| Living with spouse and/or others         | 19.9         | 2.0            | 0.9    | 21.0  | 4,532  | 30.5         | 5.6            | 2.3    | 33.6  | 6,165  | 26.1         | 4.1            | 1.7    | 28.3  | 10,697 |
| Living with spouse and children          | 20.0         | 2.1            | 1.1    | 21.5  | 30,182 | 29.6         | 5.6            | 2.8    | 32.4  | 13,452 | 23.0         | 3.2            | 1.7    | 24.9  | 43,634 |
| Living with children and others          | 25.3         | 3.5            | 0.7    | 26.5  | 4,074  | 37.0         | 5.1            | 2.8    | 39.1  | 8,413  | 33.6         | 4.6            | 2.2    | 35.5  | 12,487 |
| Living with others only                  | 17.7         | 1.4            | 0.6    | 18.8  | 1,186  | 30.3         | 3.0            | 3.1    | 33.0  | 1,719  | 25.5         | 2.4            | 2.2    | 27.6  | 2,905  |
| <b>Religion</b>                          |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Hindu                                    | 19.0         | 2.0            | 1.0    | 20.3  | 29,846 | 31.1         | 4.9            | 2.5    | 33.6  | 22,971 | 24.6         | 3.3            | 1.7    | 26.4  | 52,817 |
| Muslim                                   | 30.0         | 3.2            | 1.3    | 32.2  | 4,918  | 35.9         | 6.9            | 3.1    | 39.0  | 3,716  | 32.6         | 4.8            | 2.1    | 35.2  | 8,634  |
| Christian                                | 17.3         | 4.1            | 0.2    | 17.8  | 4,058  | 36.6         | 5.9            | 3.4    | 39.3  | 3,138  | 25.8         | 4.9            | 1.6    | 27.3  | 7,196  |
| Others                                   | 24.7         | 1.4            | 1.3    | 26.0  | 1,841  | 38.5         | 5.4            | 4.1    | 42.1  | 1,542  | 31.4         | 3.3            | 2.7    | 33.8  | 3,383  |
| <b>Caste/tribe</b>                       |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Scheduled tribe                          | 11.8         | 0.9            | 0.6    | 12.6  | 7,325  | 18.2         | 1.3            | 1.8    | 19.1  | 5,160  | 14.6         | 1.1            | 1.1    | 15.5  | 12,485 |
| Scheduled caste                          | 19.4         | 2.5            | 1.2    | 20.9  | 6,887  | 26.6         | 3.8            | 2.9    | 29.6  | 5,128  | 22.7         | 3.1            | 2.0    | 24.8  | 12,015 |
| Other backward class                     | 20.9         | 1.9            | 0.9    | 22.1  | 15,253 | 32.4         | 5.6            | 2.4    | 34.9  | 11,846 | 26.2         | 3.6            | 1.6    | 27.9  | 27,099 |
| None of the above                        | 23.4         | 3.0            | 1.2    | 25.4  | 11,198 | 39.2         | 6.5            | 3.2    | 42.2  | 9,233  | 30.9         | 4.7            | 2.2    | 33.4  | 20,431 |
| <b>Education</b>                         |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| No schooling                             | 19.5         | 2.0            | 1.0    | 20.6  | 16,280 | 26.0         | 3.1            | 2.3    | 28.3  | 16,849 | 22.9         | 2.6            | 1.7    | 24.6  | 33,129 |
| Less than 5 years complete               | 18.0         | 2.5            | 1.1    | 19.9  | 4,261  | 34.5         | 5.5            | 3.1    | 37.1  | 3,771  | 26.0         | 4.0            | 2.1    | 28.2  | 8,032  |
| 5-9 years complete                       | 21.2         | 2.5            | 1.2    | 22.9  | 10,867 | 38.4         | 6.3            | 3.2    | 41.5  | 5,996  | 27.9         | 4.0            | 2.0    | 30.1  | 16,863 |
| 10 or more years complete                | 22.8         | 2.2            | 0.8    | 24.2  | 9,255  | 46.5         | 11.7           | 3.2    | 49.7  | 4,751  | 31.0         | 5.4            | 1.7    | 33.0  | 14,006 |
| <b>Work status</b>                       |              |                |        |       |        |              |                |        |       |        |              |                |        |       |        |
| Currently working                        | 16.5         | 1.7            | 0.5    | 17.6  | 23,611 | 20.6         | 2.9            | 1.2    | 22.4  | 9,282  | 17.7         | 2.0            | 0.8    | 19.0  | 32,893 |
| Worked in past but currently not working | 31.1         | 4.8            | 3.6    | 34.1  | 4,564  | 34.1         | 5.9            | 4.0    | 37.7  | 13,321 | 33.3         | 5.6            | 3.9    | 36.8  | 17,885 |
| Never worked                             | 24.4         | 2.3            | 0.9    | 25.6  | 12,488 | 42.1         | 6.6            | 2.2    | 44.0  | 8,764  | 32.2         | 4.2            | 1.5    | 33.7  | 21,252 |

Continued

## Continued

| Background characteristics | Age 45-59*   |                |            |                   |               | Age ≥ 60     |                |            |                   |               | Total      |                   |
|----------------------------|--------------|----------------|------------|-------------------|---------------|--------------|----------------|------------|-------------------|---------------|------------|-------------------|
|                            | Hypertension | Heart Diseases | Stroke     | CVDs <sup>1</sup> | Number        | Hypertension | Heart Diseases | Stroke     | CVDs <sup>1</sup> | Number        | Stroke     | CVDs <sup>1</sup> |
|                            |              |                |            |                   |               |              |                |            |                   |               |            | Number            |
| <b>MPCE quintile</b>       |              |                |            |                   |               |              |                |            |                   |               |            |                   |
| Poorest                    | 14.4         | 1.5            | 0.7        | 15.7              | 7,647         | 25.1         | 3.4            | 2.1        | 27.1              | 6,456         | 1.4        | 21.2              |
| Poorer                     | 18.2         | 2.2            | 0.9        | 19.4              | 8,025         | 28.2         | 3.5            | 2.5        | 30.5              | 6,457         | 1.6        | 24.6              |
| Middle                     | 20.3         | 1.8            | 1.3        | 21.5              | 8,104         | 31.0         | 4.9            | 2.7        | 34.4              | 6,396         | 2.0        | 27.5              |
| Richer                     | 22.1         | 2.2            | 1.0        | 23.7              | 8,494         | 36.9         | 5.2            | 2.7        | 39.2              | 6,157         | 1.8        | 30.7              |
| Richest                    | 27.6         | 3.4            | 1.2        | 29.3              | 8,393         | 41.9         | 9.9            | 3.6        | 45.1              | 5,901         | 2.2        | 35.9              |
| <b>Total</b>               | <b>20.5</b>  | <b>2.2</b>     | <b>1.0</b> | <b>21.9</b>       | <b>40,663</b> | <b>32.0</b>  | <b>5.2</b>     | <b>2.7</b> | <b>34.6</b>       | <b>31,367</b> | <b>1.8</b> | <b>27.7</b>       |
| <b>72,030</b>              |              |                |            |                   |               |              |                |            |                   |               |            |                   |

## Notes

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

For all chronic conditions, the reference period is ever diagnosed and diagnosed by MBBS, BDS or AYUSH health professionals.

<sup>1</sup> Cardiovascular diseases (CVDs) include hypertension, heart diseases and stroke (any one or more).



**Table 7.4 Self-reported prevalence (%) of diagnosed hypertension, heart diseases, stroke and cardiovascular diseases (CVDs) among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*   |                |            |             |               | Age ≥ 60     |                |            |             |               | Total        |                |            |             |               |
|-----------------------|--------------|----------------|------------|-------------|---------------|--------------|----------------|------------|-------------|---------------|--------------|----------------|------------|-------------|---------------|
|                       | Hypertension | Heart Diseases | Stroke     | CVDs¹       | Number        | Hypertension | Heart Diseases | Stroke     | CVDs¹       | Number        | Hypertension | Heart Diseases | Stroke     | CVDs¹       | Number        |
| <b>India</b>          | <b>20.5</b>  | <b>2.2</b>     | <b>1.0</b> | <b>21.9</b> | <b>40,663</b> | <b>32.0</b>  | <b>5.2</b>     | <b>2.7</b> | <b>34.6</b> | <b>31,367</b> | <b>25.8</b>  | <b>3.6</b>     | <b>1.8</b> | <b>27.7</b> | <b>72,030</b> |
| <b>North</b>          |              |                |            |             |               |              |                |            |             |               |              |                |            |             |               |
| Chandigarh            | 31.7         | 3.4            | 1.4        | 34.4        | 625           | 50.1         | 16.8           | 4.2        | 55.3        | 389           | 39.0         | 8.8            | 2.5        | 42.7        | 1,014         |
| Delhi                 | 27.0         | 2.5            | [0.3]      | 28.1        | 819           | 45.3         | 9.2            | 4.3        | 47.4        | 492           | 33.9         | 5.0            | 1.8        | 35.4        | 1,311         |
| Haryana               | 33.1         | 2.4            | [0.4]      | 34.2        | 1,048         | 39.8         | 4.4            | 1.1        | 41.9        | 847           | 36.3         | 3.4            | 0.7        | 37.9        | 1,895         |
| Himachal Pradesh      | 26.5         | 2.9            | 1.5        | 27.9        | 765           | 38.4         | 8.8            | 3.1        | 42.7        | 618           | 32.1         | 5.7            | 2.2        | 34.9        | 1,383         |
| Jammu & Kashmir       | 30.9         | 7.2            | 0.7        | 33.6        | 881           | 47.8         | 10.5           | 4.0        | 51.2        | 730           | 39.2         | 8.8            | 2.3        | 42.2        | 1,611         |
| Punjab                | 31.2         | 2.3            | 1.5        | 32.6        | 1,112         | 44.2         | 6.5            | 3.1        | 46.8        | 1,004         | 37.4         | 4.3            | 2.3        | 39.4        | 2,116         |
| Rajasthan             | 22.9         | 2.5            | 0.8        | 24.7        | 1,160         | 31.4         | 2.8            | 1.5        | 32.7        | 1,076         | 27.2         | 2.6            | 1.2        | 28.7        | 2,236         |
| Uttarakhand           | 24.9         | 1.7            | 0.8        | 25.8        | 715           | 27.7         | 4.2            | 1.2        | 30.2        | 641           | 26.3         | 2.9            | 1.0        | 28.0        | 1,356         |
| <b>Central</b>        |              |                |            |             |               |              |                |            |             |               |              |                |            |             |               |
| Chhattisgarh          | 12.9         | [0.2]          | 1.2        | 13.7        | 1,275         | 20.1         | 1.2            | 1.7        | 20.9        | 779           | 15.7         | 0.5            | 1.4        | 16.5        | 2,054         |
| Madhya Pradesh        | 17.4         | 2.3            | 0.5        | 18.3        | 1,599         | 21.9         | 2.9            | 1.2        | 23.1        | 1,313         | 19.6         | 2.6            | 0.8        | 20.6        | 2,912         |
| Uttar Pradesh         | 18.3         | 1.0            | 1.1        | 19.1        | 2,391         | 20.4         | 2.3            | 2.6        | 22.4        | 2,164         | 19.3         | 1.6            | 1.9        | 20.7        | 4,555         |
| <b>East</b>           |              |                |            |             |               |              |                |            |             |               |              |                |            |             |               |
| Bihar                 | 18.7         | 2.2            | 0.7        | 20.0        | 1,709         | 24.8         | 7.2            | 1.5        | 28.1        | 1,806         | 22.0         | 4.9            | 1.1        | 24.3        | 3,515         |
| Jharkhand             | 16.1         | 1.4            | -          | 16.5        | 1,294         | 26.3         | 2.8            | 1.2        | 27.7        | 1,168         | 21.0         | 2.1            | 0.6        | 21.9        | 2,462         |
| Odisha                | 13.3         | 0.9            | 0.5        | 13.8        | 1,675         | 27.0         | 1.3            | 2.3        | 28.2        | 1,235         | 19.4         | 1.1            | 1.3        | 20.2        | 2,910         |
| West Bengal           | 22.7         | 3.6            | 1.7        | 25.4        | 2,383         | 37.8         | 8.0            | 6.0        | 43.2        | 1,538         | 28.8         | 5.4            | 3.5        | 32.6        | 3,921         |
| <b>Northeast</b>      |              |                |            |             |               |              |                |            |             |               |              |                |            |             |               |
| Arunachal Pradesh     | 17.6         | [0.4]          | 1.3        | 18.7        | 897           | 26.4         | [0.3]          | 2.1        | 26.6        | 318           | 19.7         | [0.4]          | 1.5        | 20.6        | 1,215         |
| Assam                 | 23.4         | 1.9            | 0.5        | 24.6        | 1,543         | 40.2         | 4.3            | 2.8        | 41.8        | 810           | 29.4         | 2.7            | 1.4        | 30.8        | 2,353         |
| Manipur               | 21.5         | 1.7            | 1.2        | 22.4        | 761           | 30.1         | 3.8            | 3.5        | 32.7        | 605           | 25.5         | 2.7            | 2.3        | 27.2        | 1,366         |
| Meghalaya             | 19.2         | 0.8            | [0.2]      | 20.0        | 556           | 35.6         | 1.4            | [0.9]      | 36.2        | 411           | 26.1         | 1.0            | 0.5        | 26.8        | 967           |
| Mizoram               | 17.1         | 1.4            | [1.4]      | 18.1        | 714           | 31.7         | 1.2            | 3.0        | 33.2        | 531           | 23.7         | 1.3            | 2.1        | 24.9        | 1,245         |
| Nagaland              | 15.3         | [0.6]          | [0.5]      | 15.5        | 708           | 15.2         | [0.4]          | 1.7        | 16.0        | 605           | 15.2         | 0.5            | 1.1        | 15.8        | 1,313         |
| Tripura               | 22.5         | 2.3            | 1.0        | 23.9        | 732           | 38.1         | 4.3            | 4.2        | 40.4        | 460           | 28.6         | 3.1            | 2.3        | 30.4        | 1,192         |
| <b>West</b>           |              |                |            |             |               |              |                |            |             |               |              |                |            |             |               |
| Dadra & Nagar Haveli  | 14.6         | 1.1            | 1.4        | 15.3        | 635           | 24.0         | [1.1]          | [0.5]      | 24.4        | 450           | 18.3         | 1.1            | 1.0        | 18.9        | 1,085         |
| Daman & Diu           | 27.3         | 1.5            | 1.3        | 28.3        | 557           | 39.5         | 3.5            | 2.3        | 43.3        | 429           | 33.1         | 2.4            | 1.8        | 35.3        | 986           |
| Goa                   | 26.3         | 1.2            | 0.9        | 27.0        | 788           | 58.1         | 7.2            | 6.4        | 60.3        | 634           | 40.8         | 3.9            | 3.4        | 42.2        | 1,422         |
| Gujarat               | 18.5         | 2.1            | 1.2        | 20.1        | 1,343         | 31.1         | 5.3            | 2.6        | 34.2        | 984           | 24.2         | 3.5            | 1.8        | 26.4        | 2,327         |
| Maharashtra           | 18.1         | 2.5            | 1.1        | 19.7        | 2,175         | 37.5         | 6.8            | 4.2        | 41.1        | 1,785         | 27.6         | 4.6            | 2.6        | 30.2        | 3,960         |

Continued

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| State/Union Territory     | Age 45-59*   |                |        |                   |        | Age ≥ 60     |                |        |                   |        | Total  |                   |
|---------------------------|--------------|----------------|--------|-------------------|--------|--------------|----------------|--------|-------------------|--------|--------|-------------------|
|                           | Hypertension | Heart Diseases | Stroke | CVDs <sup>1</sup> | Number | Hypertension | Heart Diseases | Stroke | CVDs <sup>1</sup> | Number | Stroke | CVDs <sup>1</sup> |
| <b>South</b>              |              |                |        |                   |        |              |                |        |                   |        |        |                   |
| Andaman & Nicobar Islands | 31.3         | 1.0            | 1.7    | 32.3              | 721    | 49.0         | 5.4            | 2.6    | 50.5              | 520    | 2.1    | 39.7              |
| Andhra Pradesh            | 25.1         | 2.8            | 0.9    | 27.2              | 1,569  | 44.1         | 4.5            | 3.0    | 46.5              | 1,101  | 1.8    | 35.3              |
| Karnataka                 | 20.0         | 2.0            | 1.3    | 21.0              | 1,409  | 32.6         | 6.8            | 2.7    | 35.0              | 1,000  | 1.8    | 26.5              |
| Kerala                    | 26.1         | 3.7            | 1.3    | 28.5              | 1,277  | 53.2         | 12.8           | 3.0    | 57.1              | 1,205  | 2.2    | 43.3              |
| Lakshadweep               | 29.2         | 3.5            | 2.3    | 31.8              | 637    | 44.8         | 6.6            | 4.6    | 47.4              | 500    | 3.4    | 39.2              |
| Puducherry                | 22.8         | 3.1            | 0.9    | 23.9              | 787    | 43.5         | 7.8            | 0.7    | 45.2              | 638    | 0.8    | 33.9              |
| Tamil Nadu                | 19.7         | 2.3            | 1.0    | 21.2              | 1,995  | 34.5         | 4.6            | 1.7    | 36.8              | 1,530  | 1.3    | 28.4              |
| Telangana                 | 21.9         | 1.5            | 0.6    | 22.6              | 1,408  | 42.8         | 3.6            | 2.5    | 44.1              | 1,051  | 1.4    | 32.1              |
| 2,459                     |              |                |        |                   |        |              |                |        |                   |        |        |                   |

Notes

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

For all chronic conditions, the reference period is ever diagnosed and diagnosed by MBBS, BDS and AYUSH health professionals.

<sup>1</sup>Cardiovascular diseases (CVDs) include hypertension, heart diseases and stroke (any one or more).

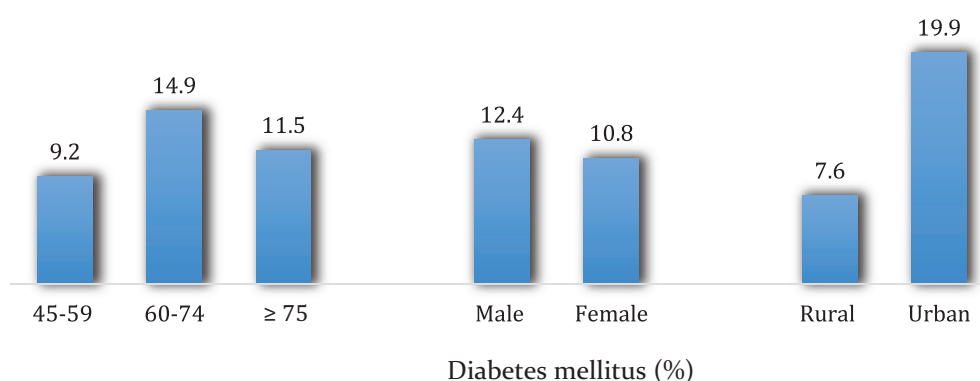
### 7.2.5 Diabetes, mellitus, high cholesterol, and anaemia

In the LASI, information was collected for older adults who have ever been diagnosed with diabetes mellitus and high cholesterol. Information on diagnosed anaemia in the past two years was also collected.

#### A. Diabetes mellitus

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in insulin production by the pancreas or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many body systems, particularly the blood vessels and nerves. The number of persons with diabetes in India has increased from 26 million in 1990 to 65 million in 2016, and diabetes is the third major contributor to the burden of NCD mortality and morbidity in India (Tandon et al., 2018).

**Figure 7.3 Self-reported prevalence (%) of diagnosed diabetes mellitus among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18**

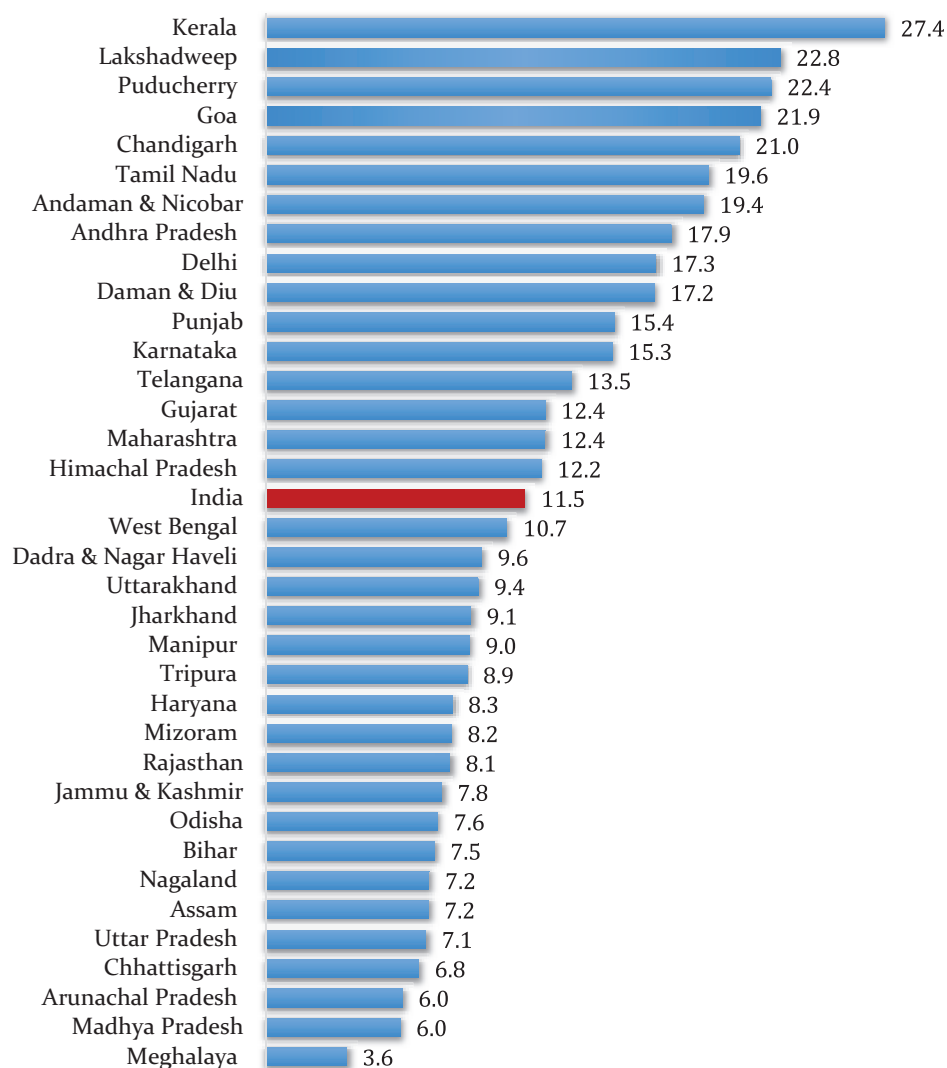


\* Including spouse irrespective of age

Table 7.5 presents the self-reported prevalence of diagnosed diabetes by background characteristics. The self-reported prevalence of diagnosed diabetes mellitus in India is 12%, with the prevalence being higher among elderly age 60 and above (14%) than among older adults age 45-59 (9%). Among elderly age 60 and above, the prevalence of diagnosed diabetes is three times higher in those living in urban areas (26%) than those living in rural areas (9%) and slightly higher among men (15%) than among women (14%). The prevalence rate of diagnosed diabetes increases with educational attainment ranging from 8% among elderly with no schooling to 30% among those with 10 or more years of schooling. Among elderly age 60 and above, the prevalence is two times higher in the richest MPCE quintile (23%) than in the poorest quintile (10%). Currently working elderly age 60 and above have lower prevalence rate of diagnosed diabetes (9%) than those who worked in past but currently not working (16%) and never worked (18%).

Cross-state variations in the prevalence of diabetes are presented in Table 7.6. Overall, the self-reported prevalence of diagnosed diabetes mellitus is markedly higher in south Indian states/UTs where more than 15% of older adults age 45 and above have been diagnosed with diabetes. More than a fourth of elderly age 60 and above reported that they have been diagnosed with diabetes mellitus in the states/UTs of Kerala (35%), Puducherry (28%), Lakshadweep (28%), Goa (27%), Delhi (26%), Tamil Nadu (26%), and Chandigarh (25%).

**Figure 7.4 Self-reported prevalence (%) of diagnosed diabetes mellitus among older adults age 45 and above\*, states/UTs, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

## B. High cholesterol

High blood cholesterol is a condition that causes extremely high levels of bad cholesterol such as low-density lipoprotein (LDL) and triglycerides in the blood. This condition is usually caused by lifestyle factors, such as diet, combined with hereditary factors and also by medical conditions or certain drugs.

Table 7.5 presents the self-reported prevalence of diagnosed high cholesterol by background characteristics. The self-reported prevalence rate of diagnosed high cholesterol among older adults age 45 and above in India is 2.1%, with the prevalence rate higher among elderly age 60 and above (2.5%) compared to older adults age 45-59 (1.9%). Among elderly age 60 years and above, the self-reported prevalence of diagnosed high cholesterol is markedly higher among those in urban areas (5.5%) than among those in rural areas (1.2%). Further, the prevalence rate increases with educational attainment and MPCE quintile, ranging from 1% among those with no schooling to more than 5% among those with 10 or more years of schooling (6.8%) and from 1.5% in the poorest to 5.2% in the richest MPCE quintile.

Cross-state variations in the self-reported prevalence of diagnosed high cholesterol among older adults age 45 and above shows a much higher prevalence in the states/UTs of Kerala (24%), Lakshadweep (19%), and Punjab (12%). The prevalence rate is less than 1% in Chhattisgarh, Rajasthan, Uttar Pradesh, Jharkhand, Arunachal Pradesh, Assam Andhra Pradesh, and Telangana (Table 7.6).

### **C. Anaemia**

The self-reported prevalence of diagnosed anaemia by background characteristics is presented in Table 7.5. Overall, anaemia is prevalent in 4.7% of older adults age 45 and above in India, with slightly higher prevalence in rural (5%) than urban areas (4.1%). Among the elderly age 60 years above, the self-reported prevalence of diagnosed anaemia is higher among women (6%) than men (3.3%) and among widowed (5.6%) than currently married (4.2%). The self-reported prevalence of diagnosed anaemia is higher among elderly age 60 and above with no schooling (5.2%) than those with 10 or more years of schooling (3%) and those in the richest MPCE quintile (6.1%) than those in the poorest MPCE quintile (4%).

Cross-state variations presented in Table 7.6 shows that the Northern and Central Indian states of Himachal Pradesh (8.8%), Punjab (8.8%), Bihar (8.7%), Gujarat (8.5%), and Madhya Pradesh (7.4%) have comparatively higher prevalence of self-reported diagnosed anaemia than other states.

**Table 7.5 Self-reported prevalence (%) of diagnosed diabetes mellitus, high cholesterol and anaemia among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics         | Age 45-59*        |                  |         |        | Age ≥ 60          |                  |         |        | Total             |         |
|------------------------------------|-------------------|------------------|---------|--------|-------------------|------------------|---------|--------|-------------------|---------|
|                                    | Diabetes Mellitus | High Cholesterol | Anaemia | Number | Diabetes Mellitus | High Cholesterol | Anaemia | Number | Diabetes Mellitus | Anaemia |
| <b>Place of residence</b>          |                   |                  |         |        |                   |                  |         |        |                   |         |
| Rural                              | 6.1               | 1.2              | 5.3     | 25,745 | 9.3               | 1.2              | 4.8     | 20,684 | 7.6               | 5.0     |
| Urban                              | 15.4              | 3.3              | 3.6     | 14,925 | 26.1              | 5.5              | 4.7     | 10,692 | 19.9              | 4.1     |
| <b>Sex</b>                         |                   |                  |         |        |                   |                  |         |        |                   |         |
| Male                               | 10.2              | 1.8              | 2.9     | 15,420 | 14.5              | 2.6              | 3.3     | 15,035 | 12.4              | 3.1     |
| Female                             | 8.7               | 1.9              | 5.9     | 25,250 | 13.9              | 2.3              | 6.0     | 16,341 | 10.8              | 5.9     |
| <b>Marital status</b>              |                   |                  |         |        |                   |                  |         |        |                   |         |
| Currently married                  | 9.2               | 1.9              | 4.8     | 35,374 | 14.8              | 2.8              | 4.2     | 19,864 | 11.3              | 4.5     |
| Widowed                            | 10.1              | 2.0              | 5.3     | 3,864  | 13.2              | 2.0              | 5.6     | 10,692 | 12.5              | 5.6     |
| Divorced/Separated/Deserted/Others | 7.3               | 1.2              | 2.8     | 1,432  | 13.1              | 2.5              | 4.3     | 820    | 9.4               | 3.3     |
| <b>Living arrangement</b>          |                   |                  |         |        |                   |                  |         |        |                   |         |
| Living alone                       | 7.8               | 1.7              | 2.4     | 689    | 12.6              | 1.7              | 5.7     | 1,618  | 11.5              | 5.0     |
| Living with spouse and/or others   | 10.5              | 2.0              | 3.6     | 4,534  | 16.3              | 2.4              | 4.0     | 6,166  | 13.9              | 3.8     |
| Living with spouse and children    | 9.0               | 1.9              | 4.9     | 30,186 | 14.0              | 2.9              | 4.3     | 13,458 | 10.6              | 4.7     |
| Living with children and others    | 10.6              | 1.9              | 5.6     | 4,075  | 13.7              | 2.1              | 5.8     | 8,415  | 12.8              | 5.7     |
| Living with others only            | 5.2               | 1.8              | 3.0     | 1,186  | 11.2              | 2.2              | 4.0     | 1,719  | 9.0               | 3.6     |
| <b>Religion</b>                    |                   |                  |         |        |                   |                  |         |        |                   |         |
| Hindu                              | 8.2               | 1.6              | 4.6     | 29,853 | 14.0              | 2.2              | 4.6     | 22,977 | 10.8              | 4.6     |
| Muslim                             | 17.1              | 2.5              | 5.8     | 4,918  | 13.3              | 3.1              | 5.8     | 3,720  | 15.4              | 5.8     |
| Christian                          | 7.9               | 2.5              | 2.1     | 4,058  | 21.1              | 5.3              | 3.1     | 3,137  | 13.7              | 2.6     |
| Others                             | 8.5               | 5.6              | 5.8     | 1,841  | 15.5              | 5.2              | 4.6     | 1,542  | 11.9              | 5.2     |
| <b>Caste/tribe</b>                 |                   |                  |         |        |                   |                  |         |        |                   |         |
| Scheduled tribe                    | 3.6               | 0.6              | 3.6     | 7,326  | 6.1               | 0.7              | 3.9     | 5,160  | 4.7               | 3.7     |
| Scheduled caste                    | 7.0               | 1.2              | 5.3     | 6,889  | 9.4               | 1.6              | 4.4     | 5,129  | 8.1               | 4.9     |
| Other backward class               | 10.7              | 1.7              | 4.6     | 15,255 | 15.9              | 2.6              | 4.8     | 11,848 | 13.0              | 4.7     |
| None of the above                  | 10.2              | 3.2              | 5.0     | 11,200 | 17.0              | 3.4              | 5.1     | 9,239  | 13.4              | 5.0     |
| <b>Education</b>                   |                   |                  |         |        |                   |                  |         |        |                   |         |
| No schooling                       | 7.1               | 0.7              | 5.3     | 16,282 | 8.1               | 1.1              | 5.2     | 16,856 | 7.6               | 5.2     |
| Less than 5 years complete         | 9.7               | 2.1              | 5.2     | 4,263  | 15.1              | 2.7              | 4.7     | 3,772  | 12.3              | 5.0     |
| 5-9 years complete                 | 9.1               | 2.3              | 5.2     | 10,867 | 20.4              | 3.3              | 4.6     | 5,997  | 13.5              | 5.0     |
| 10 or more years complete          | 13.4              | 3.5              | 2.9     | 9,258  | 30.0              | 6.8              | 3.0     | 4,751  | 19.1              | 2.9     |

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| Background characteristics               | Age 45-59*        |                  |            |               | Age ≥ 60          |                  |            |               | Total             |            |
|------------------------------------------|-------------------|------------------|------------|---------------|-------------------|------------------|------------|---------------|-------------------|------------|
|                                          | Diabetes Mellitus | High Cholesterol | Anaemia    | Number        | Diabetes Mellitus | High Cholesterol | Anaemia    | Number        | Diabetes Mellitus | Anaemia    |
| <b>Work status</b>                       |                   |                  |            |               |                   |                  |            |               |                   |            |
| Currently working                        | 7.5               | 1.4              | 4.0        | 23,616        | 8.8               | 1.4              | 4.2        | 9,282         | 7.9               | 4.0        |
| Worked in past but currently not working | 14.7              | 2.2              | 6.7        | 4,565         | 15.5              | 2.7              | 4.4        | 13,324        | 15.3              | 5.0        |
| Never worked                             | 10.6              | 2.7              | 5.5        | 12,489        | 18.2              | 3.5              | 5.8        | 8,770         | 14.0              | 5.7        |
| MPCE quintile                            |                   |                  |            |               |                   |                  |            |               |                   |            |
| Poorest                                  | 6.0               | 0.9              | 3.9        | 7,647         | 9.7               | 1.5              | 4.0        | 6,463         | 7.7               | 4.0        |
| Poorer                                   | 7.1               | 1.4              | 4.2        | 8,032         | 10.3              | 2.0              | 4.9        | 6,458         | 8.6               | 4.5        |
| Middle                                   | 8.4               | 1.7              | 5.2        | 8,103         | 12.6              | 1.8              | 4.2        | 6,397         | 10.3              | 4.7        |
| Richer                                   | 9.8               | 2.0              | 5.4        | 8,496         | 18.1              | 2.6              | 4.8        | 6,158         | 13.5              | 5.1        |
| Richest                                  | 15.3              | 3.3              | 5.0        | 8,392         | 22.5              | 5.2              | 6.1        | 5,900         | 18.3              | 5.4        |
| <b>Total</b>                             | <b>9.2</b>        | <b>1.9</b>       | <b>4.7</b> | <b>40,670</b> | <b>14.2</b>       | <b>2.5</b>       | <b>4.7</b> | <b>31,376</b> | <b>11.5</b>       | <b>4.7</b> |
| <b>72,046</b>                            |                   |                  |            |               |                   |                  |            |               |                   |            |

Note

\* Including spouse irrespective of age

**Table 7.6 Self-reported prevalence (%) of diagnosed diabetes mellitus, high cholesterol and anaemia among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*        |                  |            |               | Age ≥ 60          |                  |            |               | Total             |                  |            |               |
|---------------------------|-------------------|------------------|------------|---------------|-------------------|------------------|------------|---------------|-------------------|------------------|------------|---------------|
|                           | Diabetes Mellitus | High Cholesterol | Anaemia    | Number        | Diabetes Mellitus | High Cholesterol | Anaemia    | Number        | Diabetes Mellitus | High Cholesterol | Anaemia    | Number        |
| <b>India</b>              | <b>9.2</b>        | <b>1.9</b>       | <b>4.7</b> | <b>40,670</b> | <b>14.2</b>       | <b>2.5</b>       | <b>4.7</b> | <b>31,376</b> | <b>11.5</b>       | <b>2.1</b>       | <b>4.7</b> | <b>72,046</b> |
| <b>North</b>              |                   |                  |            |               |                   |                  |            |               |                   |                  |            |               |
| Chandigarh                | 18.3              | 8.0              | 4.9        | 625           | 25.0              | 10.8             | 1.8        | 389           | 21.0              | 9.1              | 3.7        | 1,014         |
| Delhi                     | 11.6              | 1.1              | 4.9        | 822           | 26.4              | 1.6              | 3.1        | 495           | 17.3              | 1.3              | 4.2        | 1,317         |
| Haryana                   | 6.2               | 1.0              | 3.8        | 1,048         | 10.5              | 2.1              | 3.1        | 847           | 8.3               | 1.5              | 3.5        | 1,895         |
| Himachal Pradesh          | 8.7               | 2.8              | 9.4        | 765           | 16.1              | 4.9              | 8.1        | 618           | 12.2              | 3.8              | 8.8        | 1,383         |
| Jammu & Kashmir           | 6.2               | 5.8              | 6.7        | 881           | 9.4               | 3.6              | 5.0        | 730           | 7.8               | 4.7              | 5.9        | 1,611         |
| Punjab                    | 11.1              | 11.7             | 9.4        | 1,112         | 20.2              | 12.8             | 8.2        | 1,004         | 15.4              | 12.2             | 8.8        | 2,116         |
| Rajasthan                 | 6.9               | 0.8              | 4.1        | 1,160         | 9.3               | 1.1              | 3.8        | 1,076         | 8.1               | 0.9              | 3.9        | 2,236         |
| Uttarakhand               | 8.4               | 2.5              | 4.3        | 715           | 10.4              | 0.6              | 3.5        | 641           | 9.4               | 1.6              | 3.9        | 1,356         |
| <b>Central</b>            |                   |                  |            |               |                   |                  |            |               |                   |                  |            |               |
| Chhattisgarh              | 5.2               | [0.3]            | 5.8        | 1,275         | 9.2               | [0.2]            | 5.7        | 779           | 6.8               | 0.3              | 5.7        | 2,054         |
| Madhya Pradesh            | 4.2               | 1.4              | 8.3        | 1,599         | 7.9               | 2.3              | 6.5        | 1,313         | 6.0               | 1.8              | 7.4        | 2,912         |
| Uttar Pradesh             | 6.2               | 0.6              | 5.2        | 2,390         | 8.0               | 0.7              | 4.6        | 2,164         | 7.1               | 0.6              | 4.9        | 4,554         |
| <b>East</b>               |                   |                  |            |               |                   |                  |            |               |                   |                  |            |               |
| Bihar                     | 6.6               | 1.8              | 9.2        | 1,709         | 8.2               | 1.6              | 8.3        | 1,807         | 7.5               | 1.7              | 8.7        | 3,516         |
| Jharkhand                 | 6.1               | 0.6              | 2.9        | 1,294         | 12.3              | 0.4              | 1.8        | 1,168         | 9.1               | 0.5              | 2.3        | 2,462         |
| Odisha                    | 5.8               | 1.6              | 3.6        | 1,676         | 9.9               | 1.5              | 2.9        | 1,235         | 7.6               | 1.5              | 3.3        | 2,911         |
| West Bengal               | 8.9               | 2.2              | 2.7        | 2,384         | 13.3              | 1.8              | 1.6        | 1,540         | 10.7              | 2.1              | 2.3        | 3,924         |
| <b>Northeast</b>          |                   |                  |            |               |                   |                  |            |               |                   |                  |            |               |
| Arunachal Pradesh         | 5.3               | [0.3]            | 1.9        | 897           | 8.2               | -                | [2.7]      | 318           | 6.0               | [0.2]            | 2.1        | 1,215         |
| Assam                     | 6.3               | 0.4              | 2.5        | 1,542         | 8.8               | 0.5              | 2.1        | 812           | 7.2               | 0.4              | 2.4        | 2,354         |
| Manipur                   | 7.7               | 4.6              | 2.6        | 761           | 10.6              | 4.4              | 1.5        | 605           | 9.0               | 4.5              | 2.1        | 1,366         |
| Meghalaya                 | 1.9               | [1.1]            | 2.7        | 556           | 5.9               | [1.2]            | [0.7]      | 411           | 3.6               | 1.1              | 1.9        | 967           |
| Mizoram                   | 5.6               | 2.0              | 3.5        | 714           | 11.4              | 1.0              | 3.6        | 531           | 8.2               | 1.6              | 3.6        | 1,245         |
| Nagaland                  | 6.7               | 3.0              | 0.9        | 708           | 7.8               | [0.7]            | [0.6]      | 604           | 7.2               | 1.9              | 0.8        | 1,312         |
| Tripura                   | 7.0               | 1.8              | 1.6        | 732           | 11.9              | [1.1]            | 1.9        | 460           | 8.9               | 1.5              | 1.7        | 1,192         |
| <b>West</b>               |                   |                  |            |               |                   |                  |            |               |                   |                  |            |               |
| Dadra & Nagar Haveli      | 8.6               | 3.9              | 3.4        | 635           | 11.1              | 3.2              | 3.0        | 450           | 9.6               | 3.6              | 3.2        | 1,085         |
| Daman & Diu               | 14.7              | 3.3              | 2.7        | 557           | 20.0              | 7.4              | [0.8]      | 429           | 17.2              | 5.2              | 1.8        | 986           |
| Goa                       | 17.4              | 6.1              | 2.6        | 788           | 27.3              | 9.3              | 3.9        | 634           | 21.9              | 7.6              | 3.2        | 1,422         |
| Gujarat                   | 8.1               | 2.9              | 8.7        | 1,344         | 17.6              | 3.7              | 8.3        | 984           | 12.4              | 3.3              | 8.5        | 2,328         |
| Maharashtra               | 8.3               | 1.4              | 4.0        | 2,176         | 16.6              | 1.5              | 3.9        | 1,785         | 12.4              | 1.5              | 4.0        | 3,961         |
| <b>South</b>              |                   |                  |            |               |                   |                  |            |               |                   |                  |            |               |
| Andaman & Nicobar Islands | 16.4              | 4.1              | 3.8        | 721           | 23.7              | 3.6              | 1.7        | 521           | 19.4              | 3.9              | 3.0        | 1,242         |
| Andhra Pradesh            | 15.9              | 0.6              | 1.9        | 1,569         | 20.8              | 1.0              | 2.7        | 1,100         | 17.9              | 0.8              | 2.2        | 2,669         |
| Karnataka                 | 12.9              | 1.0              | 6.5        | 1,411         | 19.1              | 2.9              | 10.2       | 1,002         | 15.3              | 1.8              | 8.0        | 2,413         |
| Kerala                    | 19.5              | 20.0             | 3.3        | 1,277         | 34.7              | 26.8             | 3.8        | 1,205         | 27.4              | 23.5             | 3.5        | 2,482         |
| Lakshadweep               | 18.0              | 17.3             | [0.4]      | 637           | 28.1              | 20.0             | [0.7]      | 500           | 22.8              | 18.6             | [0.5]      | 1,137         |
| Puducherry                | 17.1              | 4.2              | [0.2]      | 787           | 28.4              | 7.4              | -          | 638           | 22.4              | 5.7              | [0.1]      | 1,425         |
| Tamil Nadu                | 14.6              | 2.4              | 1.8        | 1,995         | 25.5              | 3.0              | 1.7        | 1,530         | 19.6              | 2.6              | 1.7        | 3,525         |
| Telangana                 | 11.9              | 0.9              | 1.4        | 1,408         | 15.6              | [0.4]            | 0.5        | 1,051         | 13.5              | 0.7              | 1.0        | 2,459         |

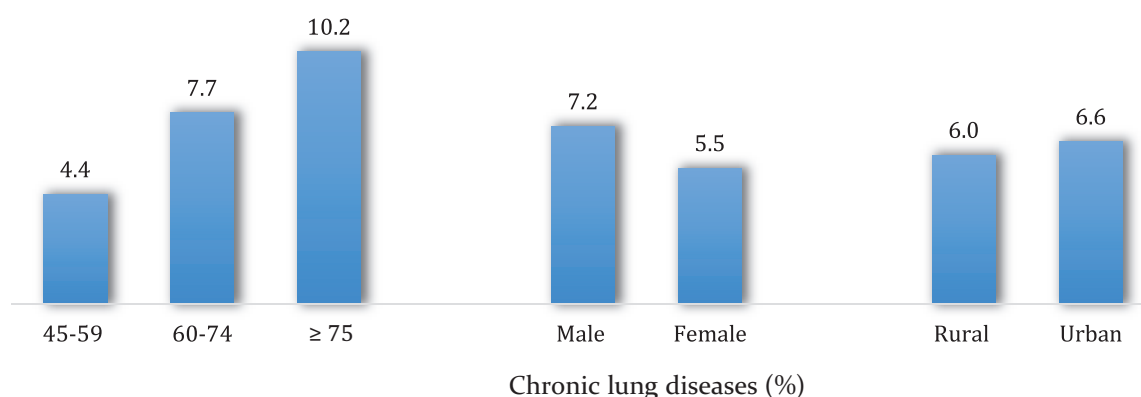
Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

## 7.2.6 Chronic lung diseases

Chronic lung disease is the second largest contributor to the burden of mortality and morbidity in India (Salvi et al., 2018). According to global burden of disease study, the number of cases of chronic obstructive lung disease in India has increased from 28 million in 1990 to 55 million in 2016, and the mortality rate is twice as high in the less-developed states than in the more-developed states (Salvi et al., 2018). In the LASI, information was collected on diagnosed chronic lung diseases including chronic obstructive pulmonary disease (COPD), chronic bronchitis, and asthma.

**Figure 7.5 Self-reported prevalence (%) of diagnosed chronic lung disease among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

Tables 7.7 and 7.8 show the self-reported prevalence of diagnosed chronic lung diseases by background characteristics and states/UTs, respectively. In India, the self-reported prevalence of any diagnosed chronic lung disease among older adults age 45 and above is 6%. The most prevalent lung disease is asthma (4.4%) followed by COPD (2.1%) and bronchitis (1.1%). The self-reported prevalence of any diagnosed chronic lung disease is markedly higher among elderly age 60 and above (8.3%) than among older adults age 45-59 (4.4%). Similarly, the prevalence of asthma, bronchitis, and COPD is higher among elderly age 60 and above (5.9%, 1.6%, and 2.8%, respectively) than in older adults age 45-59 (3.1%, 0.7%, and 1.6%, respectively). Among the elderly age 60 years and above, chronic lung diseases are more prevalent among men (8.9%) than women (7.7%), among former workers (10%) than those currently working (5.5%), and those in the richest MPCE quintile (11.9%) than those in the poorest MPCE quintile (6.8%). Among the elderly age 60 and above, the proportion of those who have been diagnosed with bronchitis and COPD is higher in urban areas (2.7% and 3.8%) than in rural areas (1.2% and 2.4% respectively). In contrast, the prevalence of asthma is higher in rural (6.1%) than in urban areas (5.3%). The prevalence of bronchitis and COPD is higher among elderly age 60 and above with 10 or more years of schooling (4.3% and 5.4% respectively) than in those with no schooling (1.1% and 2.2% respectively) and higher among those in the richest MPCE quintile (3.8% and 5.5% respectively) than those in the poorest quintile (0.8% and 1.4% respectively).

Across the states/UTs, the self-reported prevalence of any diagnosed chronic lung disease among older adults age 45 and above ranges from 11% in Puducherry to less than 1% in Nagaland and Meghalaya. More than one in ten elderly age 60 and above have been diagnosed with any chronic lung diseases in Rajasthan (15%), Puducherry (13%), Kerala (12%) and West Bengal (11%). Among elderly age 60 and above, the self-reported prevalence of bronchitis and COPD is highest in Karnataka (6.2% and 7.6% respectively) followed by that in Puducherry (4.1% and 7.1% respectively). On the other hand, the self-reported prevalence of diagnosed asthma is the highest in Rajasthan (12%) followed by that in Dadra & Nagar Haveli (8.9%), Kerala (8.2%), and West Bengal (8.2%).

**Figure 7.6 Self-reported prevalence (%) of diagnosed chronic lung diseases among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**

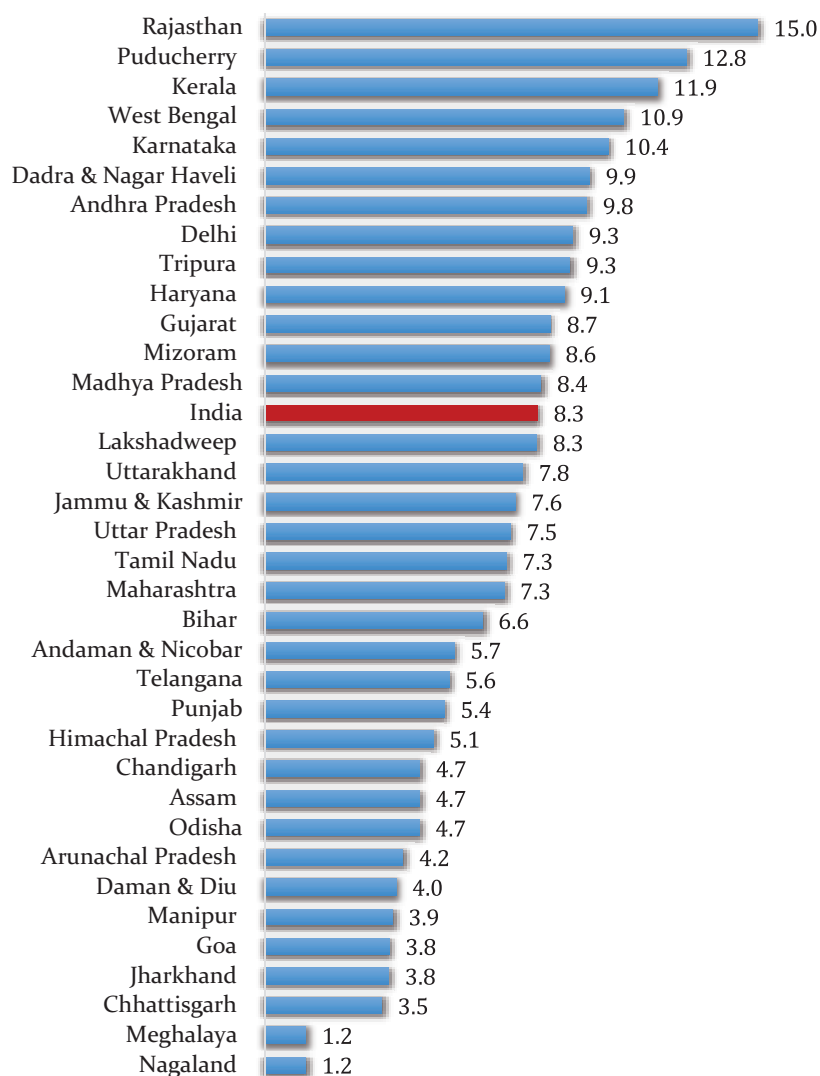


**Table 7.7 Self-reported prevalence (%) of diagnosed chronic lung diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59* |            |      |                           |        |                           | Age ≥ 60 |            |      |                           |        |                           | Total                     |        |
|------------------------------------------|------------|------------|------|---------------------------|--------|---------------------------|----------|------------|------|---------------------------|--------|---------------------------|---------------------------|--------|
|                                          | Asthma     | Bronchitis | COPD | Any Chronic Lung Disease¹ | Number | Any Chronic Lung Disease¹ | Asthma   | Bronchitis | COPD | Any Chronic Lung Disease¹ | Number | Any Chronic Lung Disease¹ | Any Chronic Lung Disease¹ | Number |
| <b>Place of residence</b>                |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Rural                                    | 2.8        | 0.7        | 1.5  | 4.1                       | 25,754 | 6.1                       | 1.2      | 2.4        | 8.1  | 20,689                    | 4.4    | 0.9                       | 1.9                       | 46,443 |
| Urban                                    | 3.9        | 0.7        | 1.7  | 5.0                       | 14,928 | 5.3                       | 2.7      | 3.8        | 8.7  | 10,694                    | 4.5    | 1.6                       | 2.6                       | 25,622 |
| <b>Sex</b>                               |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Male                                     | 3.8        | 0.7        | 1.7  | 5.3                       | 15,427 | 6.5                       | 1.4      | 2.8        | 8.9  | 15,041                    | 5.2    | 1.1                       | 2.3                       | 30,468 |
| Female                                   | 2.7        | 0.7        | 1.5  | 3.9                       | 25,255 | 5.4                       | 1.8      | 2.8        | 7.7  | 16,342                    | 3.8    | 1.2                       | 2.0                       | 41,597 |
| <b>Marital status</b>                    |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Currently married                        | 3.1        | 0.7        | 1.5  | 4.4                       | 35,386 | 5.9                       | 1.2      | 2.4        | 7.9  | 19,869                    | 4.1    | 0.9                       | 1.9                       | 55,255 |
| Widowed                                  | 4.2        | 1.4        | 2.0  | 5.2                       | 3,864  | 6.0                       | 2.3      | 3.6        | 9.1  | 10,693                    | 5.6    | 2.1                       | 3.2                       | 14,557 |
| Divorced/Separated/Deserted/ Others      | 2.6        | 1.1        | 1.4  | 3.8                       | 1,432  | 4.7                       | 0.7      | 1.5        | 5.9  | 821                       | 3.3    | 1.0                       | 1.4                       | 2,253  |
| <b>Living arrangement</b>                |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Living alone                             | 4.6        | 0.8        | 1.8  | 6.1                       | 689    | 6.3                       | 1.4      | 2.0        | 7.6  | 1,618                     | 5.9    | 1.2                       | 1.9                       | 2,307  |
| Living with spouse and/or others         | 6.6        | 0.7        | 1.5  | 7.9                       | 4,535  | 5.8                       | 1.2      | 2.2        | 7.6  | 6,168                     | 6.1    | 1.0                       | 1.9                       | 10,703 |
| Living with spouse and children          | 2.5        | 0.7        | 1.5  | 3.8                       | 30,197 | 5.7                       | 1.3      | 2.5        | 7.9  | 13,461                    | 3.5    | 0.9                       | 1.9                       | 43,658 |
| Living with children and others          | 3.4        | 1.4        | 2.0  | 4.4                       | 4,075  | 6.0                       | 2.6      | 4.1        | 9.6  | 8,417                     | 5.3    | 2.3                       | 3.5                       | 12,492 |
| Living with others only                  | 3.4        | 1.0        | 1.4  | 4.5                       | 1,186  | 6.3                       | 0.5      | 1.5        | 7.7  | 1,719                     | 5.2    | 0.7                       | 1.5                       | 2,905  |
| <b>Religion</b>                          |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Hindu                                    | 3.3        | 0.8        | 1.5  | 4.5                       | 29,856 | 5.9                       | 1.6      | 2.7        | 8.1  | 22,982                    | 4.5    | 1.2                       | 2.1                       | 52,838 |
| Muslim                                   | 2.6        | 0.6        | 1.6  | 4.2                       | 4,927  | 6.5                       | 1.7      | 3.5        | 9.5  | 3,721                     | 4.3    | 1.1                       | 2.4                       | 8,648  |
| Christian                                | 1.5        | 0.4        | 1.0  | 2.5                       | 4,058  | 6.3                       | 1.5      | 2.6        | 9.0  | 3,138                     | 3.6    | 0.9                       | 1.7                       | 7,196  |
| Others                                   | 2.8        | 0.3        | 2.6  | 4.5                       | 1,841  | 3.7                       | 1.4      | 3.3        | 7.0  | 1,542                     | 3.2    | 0.8                       | 2.9                       | 3,383  |
| <b>Caste/tribe</b>                       |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Scheduled tribe                          | 2.3        | 0.3        | 0.6  | 2.7                       | 7,327  | 5.0                       | 0.6      | 1.6        | 6.5  | 5,160                     | 3.5    | 0.4                       | 1.1                       | 12,487 |
| Scheduled caste                          | 3.6        | 1.0        | 1.7  | 4.8                       | 6,889  | 6.2                       | 1.1      | 2.6        | 8.2  | 5,129                     | 4.7    | 1.0                       | 2.1                       | 12,018 |
| Other backward class                     | 3.4        | 0.8        | 1.8  | 4.9                       | 15,258 | 6.0                       | 2.2      | 3.1        | 8.8  | 11,853                    | 4.6    | 1.4                       | 2.4                       | 27,111 |
| None of the above                        | 2.6        | 0.6        | 1.4  | 3.9                       | 11,208 | 5.7                       | 1.3      | 2.8        | 8.1  | 9,241                     | 4.1    | 0.9                       | 2.1                       | 20,449 |
| <b>Education</b>                         |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| No schooling                             | 3.0        | 0.6        | 1.6  | 4.2                       | 16,288 | 6.1                       | 1.1      | 2.2        | 7.8  | 16,859                    | 4.6    | 0.8                       | 1.9                       | 33,147 |
| Less than 5 years complete               | 3.1        | 0.9        | 2.1  | 4.8                       | 4,264  | 7.7                       | 1.6      | 2.7        | 9.9  | 3,774                     | 5.4    | 1.2                       | 2.4                       | 8,038  |
| 5-9 years complete                       | 3.1        | 1.2        | 2.0  | 4.7                       | 10,872 | 6.0                       | 1.2      | 2.8        | 8.4  | 5,997                     | 4.3    | 1.2                       | 2.3                       | 16,869 |
| 10 or more years complete                | 3.5        | 0.5        | 0.9  | 4.4                       | 9,258  | 3.2                       | 4.3      | 5.4        | 8.7  | 4,753                     | 3.4    | 1.8                       | 2.4                       | 14,011 |
| <b>Work status</b>                       |            |            |      |                           |        |                           |          |            |      |                           |        |                           |                           |        |
| Currently working                        | 3.1        | 0.5        | 1.3  | 4.1                       | 23,623 | 4.1                       | 0.9      | 1.7        | 5.5  | 9,283                     | 3.4    | 0.7                       | 1.4                       | 32,906 |
| Worked in past but currently not working | 5.1        | 1.8        | 3.2  | 7.4                       | 4,566  | 7.6                       | 1.5      | 3.0        | 10.0 | 13,331                    | 7.0    | 1.6                       | 3.0                       | 17,897 |
| Never worked                             | 2.5        | 0.7        | 1.4  | 3.8                       | 12,493 | 5.3                       | 2.5      | 3.9        | 8.7  | 8,769                     | 3.7    | 1.5                       | 2.5                       | 21,262 |

Continued

Continued

| Background characteristics | Age 45-59* |            |      |                                       |        | Age ≥ 60 |            |      |                                       |        | Total  |            |      |                                       |        |
|----------------------------|------------|------------|------|---------------------------------------|--------|----------|------------|------|---------------------------------------|--------|--------|------------|------|---------------------------------------|--------|
|                            | Asthma     | Bronchitis | COPD | Any Chronic Lung Disease <sup>1</sup> | Number | Asthma   | Bronchitis | COPD | Any Chronic Lung Disease <sup>1</sup> | Number | Asthma | Bronchitis | COPD | Any Chronic Lung Disease <sup>1</sup> | Number |
| MPCE quintile              |            |            |      |                                       |        |          |            |      |                                       |        |        |            |      |                                       |        |
| Poorest                    | 2.5        | 0.5        | 1.1  | 3.5                                   | 7,652  | 5.6      | 0.8        | 1.4  | 6.8                                   | 6,463  | 4.0    | 0.6        | 1.2  | 5.1                                   | 14,115 |
| Poorer                     | 2.5        | 0.5        | 1.1  | 3.4                                   | 8,033  | 6.1      | 1.5        | 2.7  | 8.1                                   | 6,459  | 4.2    | 1.0        | 1.8  | 5.6                                   | 14,492 |
| Middle                     | 3.0        | 1.2        | 2.0  | 4.4                                   | 8,104  | 5.6      | 1.3        | 2.6  | 7.7                                   | 6,400  | 4.2    | 1.3        | 2.2  | 6.0                                   | 14,504 |
| Richer                     | 3.3        | 0.7        | 2.2  | 4.8                                   | 8,498  | 5.5      | 1.0        | 2.6  | 7.7                                   | 6,160  | 4.3    | 0.8        | 2.4  | 6.1                                   | 14,658 |
| Richest                    | 4.6        | 0.8        | 1.5  | 6.0                                   | 8,395  | 6.9      | 3.8        | 5.5  | 11.9                                  | 5,901  | 5.5    | 2.0        | 3.2  | 8.5                                   | 14,296 |
| Total                      | 3.1        | 0.7        | 1.6  | 4.4                                   | 40,682 | 5.9      | 1.6        | 2.8  | 8.3                                   | 31,383 | 4.4    | 1.1        | 2.1  | 6.2                                   | 72,065 |

Notes

\* Including spouse irrespective of age,

<sup>1</sup> COPD prevalence also includes chronic bronchitis.

<sup>2</sup> Chronic lung diseases include chronic obstructive pulmonary disease (COPD), asthma and bronchitis (any one or more).

**Table 7. 8 Self-reported prevalence (%) of diagnosed chronic lung diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59* |            |       |                           |        | Age ≥ 60 |            |       |                           |        | Total  |            |       |                           |        |
|-----------------------|------------|------------|-------|---------------------------|--------|----------|------------|-------|---------------------------|--------|--------|------------|-------|---------------------------|--------|
|                       | Asthma     | Bronchitis | COPD  | Any Chronic Lung Disease¹ | Number | Asthma   | Bronchitis | COPD  | Any Chronic Lung Disease¹ | Number | Asthma | Bronchitis | COPD  | Any Chronic Lung Disease¹ | Number |
| India                 | 3.1        | 0.7        | 1.6   | 4.4                       | 40,682 | 5.9      | 1.6        | 2.8   | 8.3                       | 31,383 | 4.4    | 1.1        | 2.1   | 6.2                       | 72,065 |
| North                 |            |            |       |                           |        |          |            |       |                           |        |        |            |       |                           |        |
| Chandigarh            | 1.0        | [0.4]      | 1.3   | 2.3                       | 625    | 1.2      | 2.2        | 3.5   | 4.7                       | 389    | 1.1    | 1.1        | 2.1   | 3.3                       | 1,014  |
| Delhi                 | 4.0        | [0.2]      | 1.1   | 5.1                       | 822    | 7.1      | [0.7]      | 2.3   | 9.3                       | 495    | 5.2    | 0.4        | 1.6   | 6.7                       | 1,317  |
| Haryana               | 3.1        | 0.4        | 1.4   | 4.6                       | 1,048  | 6.3      | 1.0        | 2.7   | 9.1                       | 847    | 4.6    | 0.7        | 2.0   | 6.8                       | 1,895  |
| Himachal Pradesh      | 1.1        | [0.2]      | 0.8   | 1.9                       | 765    | 3.7      | 0.5        | 1.3   | 5.1                       | 618    | 2.3    | 0.3        | 1.0   | 3.4                       | 1,383  |
| Jammu & Kashmir       | 1.0        | 0.7        | 1.3   | 2.5                       | 881    | 2.5      | 2.2        | 4.8   | 7.6                       | 730    | 1.7    | 1.4        | 3.0   | 5.0                       | 1,611  |
| Punjab                | 1.7        | 0.5        | 2.5   | 4.2                       | 1,112  | 1.9      | 1.2        | 3.6   | 5.4                       | 1,004  | 1.8    | 0.8        | 3.0   | 4.8                       | 2,116  |
| Rajasthan             | 4.8        | 0.4        | 1.0   | 5.6                       | 1,161  | 12.4     | 1.8        | 3.0   | 15.0                      | 1,077  | 8.6    | 1.1        | 2.0   | 10.3                      | 2,238  |
| Uttarakhand           | 2.6        | 1.8        | 4.0   | 6.4                       | 715    | 5.0      | 1.6        | 3.1   | 7.8                       | 641    | 3.8    | 1.7        | 3.5   | 7.1                       | 1,356  |
| Central               |            |            |       |                           |        |          |            |       |                           |        |        |            |       |                           |        |
| Chhattisgarh          | 1.5        | 0.4        | 0.6   | 2.0                       | 1,275  | 3.2      | [0.2]      | 0.4   | 3.5                       | 779    | 2.1    | 0.3        | 0.5   | 2.6                       | 2,054  |
| Madhya Pradesh        | 3.4        | 1.2        | 1.7   | 4.6                       | 1,599  | 6.4      | 0.9        | 2.3   | 8.4                       | 1,313  | 4.8    | 1.0        | 2.0   | 6.4                       | 2,912  |
| Uttar Pradesh         | 2.0        | 1.0        | 1.7   | 3.8                       | 2,395  | 5.0      | 1.5        | 2.6   | 7.5                       | 2,167  | 3.5    | 1.2        | 2.1   | 5.6                       | 4,562  |
| East                  |            |            |       |                           |        |          |            |       |                           |        |        |            |       |                           |        |
| Bihar                 | 3.1        | 0.6        | 1.1   | 4.0                       | 1,709  | 5.6      | 0.7        | 1.0   | 6.6                       | 1,806  | 4.5    | 0.7        | 1.0   | 5.4                       | 3,515  |
| Jharkhand             | 0.8        | 0.6        | 1.0   | 1.8                       | 1,294  | 2.8      | 0.8        | 1.1   | 3.8                       | 1,168  | 1.8    | 0.7        | 1.0   | 2.8                       | 2,462  |
| Odisha                | 2.2        | [0.2]      | 0.3   | 2.5                       | 1,676  | 4.3      | 0.4        | 0.8   | 4.7                       | 1,235  | 3.1    | 0.3        | 0.5   | 3.5                       | 2,911  |
| West Bengal           | 3.2        | 0.6        | 2.0   | 4.9                       | 2,384  | 8.2      | 1.7        | 4.5   | 10.9                      | 1,540  | 5.2    | 1.0        | 3.0   | 7.3                       | 3,924  |
| Northeast             |            |            |       |                           |        |          |            |       |                           |        |        |            |       |                           |        |
| Arunachal Pradesh     | 1.0        | [0.5]      | 0.9   | 1.9                       | 897    | 1.6      | -          | [1.4] | 4.2                       | 318    | 1.1    | [0.4]      | 1.0   | 2.4                       | 1,215  |
| Assam                 | 1.2        | [0.2]      | 0.3   | 1.6                       | 1,548  | 3.9      | [0.2]      | 0.7   | 4.7                       | 814    | 2.2    | 0.2        | 0.5   | 2.7                       | 2,362  |
| Manipur               | 1.9        | [0.2]      | [0.2] | 2.4                       | 761    | 2.6      | [0.2]      | 0.9   | 3.9                       | 605    | 2.2    | [0.2]      | 0.5   | 3.1                       | 1,366  |
| Meghalaya             | [0.2]      | -          | [0.2] | [0.2]                     | 556    | 1.0      | -          | 0.7   | 1.2                       | 411    | 0.6    | -          | [0.4] | 0.7                       | 967    |
| Mizoram               | 2.1        | [0.3]      | 0.8   | 3.0                       | 714    | 3.4      | 1.5        | 5.1   | 8.6                       | 531    | 2.6    | 0.8        | 2.8   | 5.5                       | 1,245  |
| Nagaland              | [0.2]      | -          | -     | [0.2]                     | 708    | 1.2      | -          | -     | 1.2                       | 604    | 0.7    | -          | -     | 0.7                       | 1,312  |
| Tripura               | 5.0        | [0.2]      | [0.4] | 5.3                       | 732    | 5.9      | [0.8]      | 3.5   | 9.3                       | 460    | 5.4    | 0.5        | 1.6   | 6.9                       | 1,192  |
| West                  |            |            |       |                           |        |          |            |       |                           |        |        |            |       |                           |        |
| Dadra & Nagar Haveli  | 3.1        | -          | [0.9] | 4.0                       | 635    | 8.9      | [0.8]      | 1.6   | 9.9                       | 450    | 5.4    | [0.3]      | 1.2   | 6.3                       | 1,085  |
| Daman & Diu           | 3.2        | -          | 1.1   | 4.5                       | 557    | 2.9      | [0.4]      | 1.3   | 4.0                       | 429    | 3.0    | [0.2]      | 1.2   | 4.3                       | 986    |
| Goa                   | 0.9        | [0.2]      | [0.2] | 1.1                       | 788    | 3.0      | [0.7]      | [0.8] | 3.8                       | 634    | 1.8    | [0.4]      | 0.5   | 2.3                       | 1,422  |
| Gujarat               | 3.2        | 0.4        | 1.0   | 3.9                       | 1,344  | 7.6      | 0.5        | 1.6   | 8.7                       | 984    | 5.2    | 0.4        | 1.2   | 6.1                       | 2,328  |
| Maharashtra           | 2.7        | [0.1]      | 1.3   | 3.8                       | 2,176  | 6.2      | 0.3        | 1.5   | 7.3                       | 1,786  | 4.4    | 0.2        | 1.4   | 5.5                       | 3,962  |

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| State/Union Territory     | Age 45-59* |            |       |                                       |        | Age ≥ 60 |            |      |                                       |        | Total  |            |      |                                       |        |
|---------------------------|------------|------------|-------|---------------------------------------|--------|----------|------------|------|---------------------------------------|--------|--------|------------|------|---------------------------------------|--------|
|                           | Asthma     | Bronchitis | COPD  | Any Chronic Lung Disease <sup>1</sup> | Number | Asthma   | Bronchitis | COPD | Any Chronic Lung Disease <sup>1</sup> | Number | Asthma | Bronchitis | COPD | Any Chronic Lung Disease <sup>1</sup> | Number |
| <b>South</b>              |            |            |       |                                       |        |          |            |      |                                       |        |        |            |      |                                       |        |
| Andaman & Nicobar Islands | 1.6        | -          | [1.0] | 2.7                                   | 721    | 4.6      | [0.6]      | 1.2  | 5.7                                   | 521    | 2.8    | 0.3        | 1.1  | 3.9                                   | 1,242  |
| Andhra Pradesh            | 3.3        | [0.2]      | 1.4   | 4.7                                   | 1,569  | 7.4      | 1.1        | 3.3  | 9.8                                   | 1,100  | 5.0    | 0.6        | 2.2  | 6.8                                   | 2,669  |
| Karnataka                 | 4.9        | 1.2        | 2.5   | 6.3                                   | 1,411  | 3.6      | 6.2        | 7.6  | 10.4                                  | 1,002  | 4.4    | 3.2        | 4.5  | 7.9                                   | 2,413  |
| Kerala                    | 3.0        | 1.2        | 2.4   | 5.9                                   | 1,277  | 8.2      | 2.0        | 3.6  | 11.9                                  | 1,206  | 5.7    | 1.6        | 3.0  | 9.0                                   | 2,483  |
| Lakshadweep               | 2.4        | [0.4]      | 1.1   | 3.4                                   | 637    | 5.9      | 0.8        | 2.2  | 8.3                                   | 500    | 4.0    | 0.6        | 1.6  | 5.7                                   | 1,137  |
| Puducherry                | 3.7        | 4.0        | 5.1   | 8.8                                   | 787    | 6.0      | 4.1        | 7.1  | 12.8                                  | 638    | 4.8    | 4.0        | 6.0  | 10.7                                  | 1,425  |
| Tamil Nadu                | 2.2        | 2.2        | 2.4   | 4.4                                   | 1,995  | 4.8      | 2.5        | 3.0  | 7.3                                   | 1,530  | 3.4    | 2.3        | 2.7  | 5.8                                   | 3,525  |
| Telangana                 | 2.8        | -          | 0.5   | 3.2                                   | 1,408  | 4.2      | [0.2]      | 1.5  | 5.6                                   | 1,051  | 3.4    | 0.1        | 1.0  | 4.2                                   | 2,459  |

Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "- " indicates less number of cases/no cases.

<sup>1</sup> COPD prevalence also includes chronic bronchitis.<sup>2</sup> Chronic lung diseases include chronic obstructive pulmonary disease (COPD), asthma and bronchitis (any one or more).

### 7.2.7 Neurological or psychiatric problems

Neuropsychiatric conditions refer to mental disorders attributable to diseases of the nervous system. Mental disorders include schizophrenia, depression, autism, eating disorders, degenerative diseases (including dementia, Parkinson's disease, and Alzheimer's disease), mood disorders (including depression, unipolar depression, bipolar disorder/manic depression, dysthymia, cyclothymia, and mania), and neurotic disorders (including anxiety disorder, obsessive-compulsive disorder, and trichotillomania).

In the LASI, respondents were asked 'Has any health professional ever told you that you have any neurological or psychiatric problems'? Among respondents who answered yes to this question, information was also collected for which disease or condition they were diagnosed with (depression, Alzheimer's disease, dementia, psychiatric problems such as unipolar/bipolar disorder, schizophrenia and, neurological problems such as neuropathy, convulsions, migraine, Parkinson's). Information was also collected on treatment by asking 'Are you currently taking any psychiatric or psychological treatment or therapy?' and 'Are you taking any tranquilizers, antidepressants or other type of medications for neurological/ psychiatric problem?'

Table 7.9 presents the self-reported prevalence of diagnosed neurological or psychiatric problems in India by background characteristics. The self-reported prevalence of any diagnosed neurological or psychiatric problem among older adults age 45 and above in India is 2.2%. The prevalence of any neurological or psychiatric problems is slightly higher among elderly age 60 and above (2.6%) than among older adults age 45-59 (1.9%). Among elderly age 60 and above, the prevalence of any neurological or psychiatric problems does not markedly vary by place of residence, sex, educational level, and MPCE quintile. In contrast, the prevalence increases with MPCE quintile among older adults age 45-59. The prevalence was also higher among elderly age 60 and above living with others (3.3%) and those who never worked (3.1%).

Overall, other neurological and psychiatric problems is prevalent in 1.4% and 0.4% of older adults age 45 and above, respectively, in India. Further, 0.7% of the older adults age 45 and above reported that they have been diagnosed with Alzheimer's disease and dementia. A further 0.6% reported that they have been diagnosed with depression. The self-reported prevalence of diagnosed depression as well as Alzheimer's disease & dementia is slightly higher among elderly age 60 and above residing in rural areas (0.9% and 1.1% respectively) than those in urban areas (0.6% and 0.7% respectively). The prevalence rate of both Alzheimer's disease and dementia are also higher among elderly women age 60 and above than elderly men. The prevalence rate of depression (1.3%) and Alzheimer's disease and dementia (2%) is also higher among elderly age 60 years and above who are living with others.

Table 7.10 presents the cross-state variations in the self-reported prevalence of diagnosed neurological or psychiatric problems. The prevalence of any neurological or psychiatric problem among older adults age 45 and above ranges from to 6.1% in West Bengal and 6.0% in Telangana to 0.5% in Bihar and Chhattisgarh. Among the elderly age 60 and above, the prevalence of any neurological or psychiatric problem is more than 5% in West Bengal (8.1%), Telangana (7.0%), Puducherry (6.9%), and Jammu & Kashmir (5.3%). A higher proportion of elderly age 60 and above in West Bengal are diagnosed with depression (3.4%), other psychiatric problems (1.1%) and Alzheimer's disease and dementia (5.4%). In contrast, the prevalence of other neurological problems is higher in Telangana (6.4%) followed by that in Puducherry (4.2%).

**Figure 7.7 Self-reported prevalence (%) of diagnosed neurological or psychiatric conditions among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**

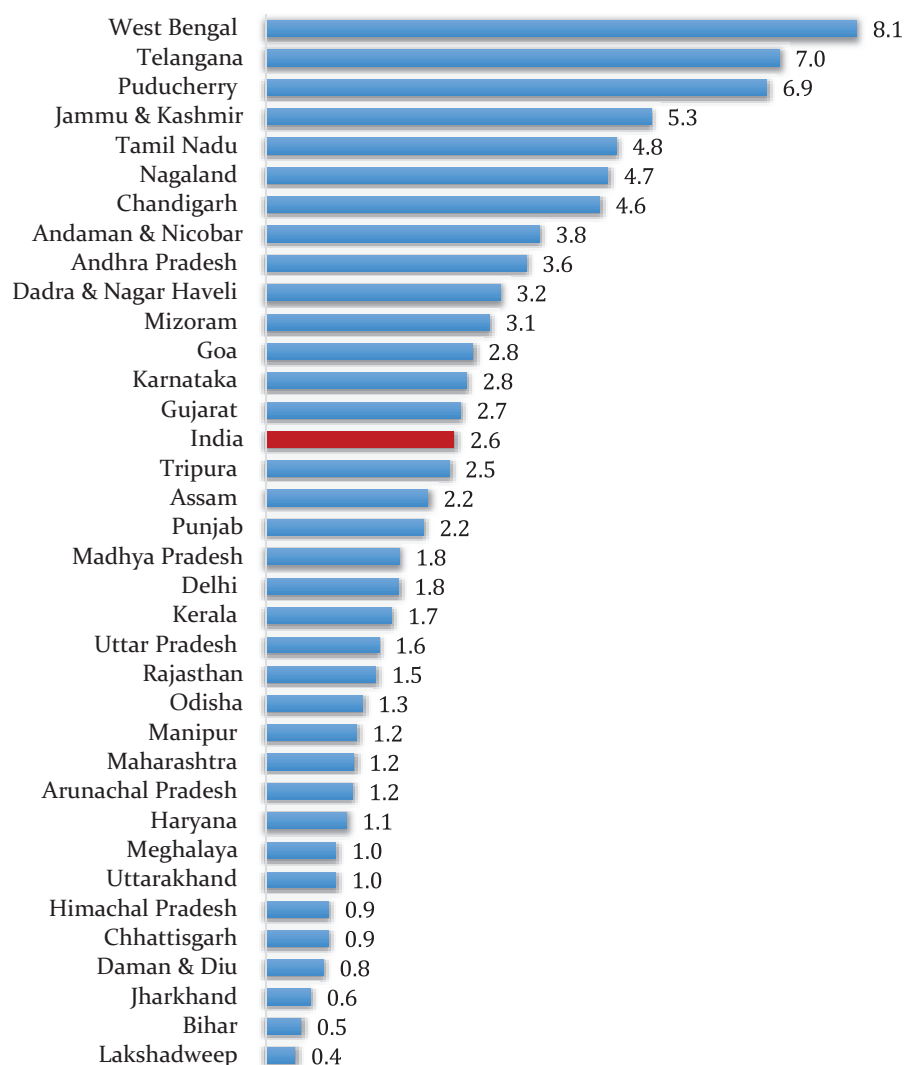


**Table 7.9 Self-reported prevalence (%) of diagnosed neurological or psychiatric conditions among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59* |                                        |                                |                                         |                                                    | Age ≥ 60 |            |                                        |                                |                                         | Total                                              |        |            |                                        |                                |                                         |                                                    |        |
|------------------------------------------|------------|----------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------|----------|------------|----------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------|--------|------------|----------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------|--------|
|                                          | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number   | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> |        |
| <b>Place of residence</b>                |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Rural                                    | 0.5        | 0.3                                    | 0.5                            | 1.2                                     | 1.7                                                | 25752    | 0.9        | 0.4                                    | 1.1                            | 1.6                                     | 2.6                                                | 20,687 | 0.7        | 0.3                                    | 0.8                            | 1.4                                     | 2.1                                                | 46,439 |
| Urban                                    | 0.5        | 0.6                                    | 0.3                            | 1.6                                     | 2.3                                                | 14,923   | 0.6        | 0.4                                    | 0.7                            | 1.6                                     | 2.6                                                | 10,694 | 0.5        | 0.5                                    | 0.5                            | 1.6                                     | 2.4                                                | 25,617 |
| <b>Sex</b>                               |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Male                                     | 0.4        | 0.5                                    | 0.4                            | 1.5                                     | 2.1                                                | 15,425   | 0.6        | 0.4                                    | 0.7                            | 1.8                                     | 2.5                                                | 15,039 | 0.5        | 0.5                                    | 0.5                            | 1.6                                     | 2.3                                                | 30,464 |
| Female                                   | 0.5        | 0.3                                    | 0.4                            | 1.2                                     | 1.8                                                | 25,250   | 0.9        | 0.3                                    | 1.2                            | 1.4                                     | 2.6                                                | 16,342 | 0.7        | 0.3                                    | 0.7                            | 1.3                                     | 2.2                                                | 41,592 |
| <b>Marital status</b>                    |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Currently married                        | 0.4        | 0.4                                    | 0.4                            | 1.3                                     | 1.9                                                | 35,381   | 0.7        | 0.4                                    | 0.7                            | 1.6                                     | 2.4                                                | 19,867 | 0.5        | 0.4                                    | 0.5                            | 1.4                                     | 2.1                                                | 55,248 |
| Widowed                                  | 0.7        | 0.3                                    | 0.5                            | 1.4                                     | 2.0                                                | 3,864    | 0.9        | 0.4                                    | 1.4                            | 1.5                                     | 2.8                                                | 10,693 | 0.8        | 0.3                                    | 1.2                            | 1.5                                     | 2.6                                                | 14,557 |
| Divorced/Separated/Deserted/Others       | 0.9        | 0.9                                    | 0.8                            | 1.5                                     | 2.9                                                | 1,430    | 1.0        | 0.7                                    | 1.7                            | 2.8                                     | 3.9                                                | 821    | 1.0        | 0.8                                    | 1.1                            | 2.0                                     | 3.3                                                | 2,251  |
| <b>Living arrangement</b>                |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Living alone                             | 1.0        | -                                      | 0.7                            | 1.9                                     | 2.0                                                | 688      | [0.4]      | [0.2]                                  | 1.1                            | 1.7                                     | 3.0                                                | 1,618  | 0.6        | [0.1]                                  | 1.0                            | 1.8                                     | 2.7                                                | 2,306  |
| Living with spouse and/or others         | 0.5        | 0.2                                    | 0.7                            | 1.1                                     | 1.9                                                | 4,535    | 0.7        | 0.3                                    | 0.5                            | 1.9                                     | 2.6                                                | 6,167  | 0.6        | 0.3                                    | 0.6                            | 1.6                                     | 2.3                                                | 10,702 |
| Living with spouse and children          | 0.4        | 0.4                                    | 0.3                            | 1.3                                     | 1.9                                                | 30,192   | 0.8        | 0.4                                    | 0.8                            | 1.5                                     | 2.3                                                | 13,460 | 0.5        | 0.4                                    | 0.5                            | 1.4                                     | 2.0                                                | 43,652 |
| Living with children and others          | 0.6        | 0.3                                    | 0.5                            | 1.2                                     | 1.9                                                | 4,075    | 0.9        | 0.4                                    | 1.3                            | 1.5                                     | 2.7                                                | 8,417  | 0.8        | 0.4                                    | 1.1                            | 1.4                                     | 2.5                                                | 12,492 |
| Living with others only                  | 1.1        | 1.0                                    | 0.6                            | 1.8                                     | 3.2                                                | 1,185    | 1.3        | 0.7                                    | 2.0                            | 1.6                                     | 3.3                                                | 1,719  | 1.2        | 0.8                                    | 1.5                            | 1.7                                     | 3.2                                                | 2,904  |
| <b>Religion</b>                          |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Hindu                                    | 0.4        | 0.3                                    | 0.4                            | 1.3                                     | 1.9                                                | 29,852   | 0.8        | 0.3                                    | 1.0                            | 1.6                                     | 2.6                                                | 22,981 | 0.6        | 0.3                                    | 0.6                            | 1.4                                     | 2.2                                                | 52,833 |
| Muslim                                   | 0.5        | 0.3                                    | 0.6                            | 1.2                                     | 1.8                                                | 4,924    | 0.7        | 0.8                                    | 0.9                            | 1.8                                     | 2.8                                                | 3,721  | 0.6        | 0.5                                    | 0.7                            | 1.5                                     | 2.3                                                | 8,645  |
| Christian                                | 0.5        | 3.1                                    | 0.3                            | 3.4                                     | 4.2                                                | 4,058    | 0.4        | 0.1                                    | 1.3                            | 2.0                                     | 3.1                                                | 3,138  | 0.5        | 1.8                                    | 0.7                            | 2.8                                     | 3.7                                                | 7,196  |
| Others                                   | 0.8        | 0.4                                    | 0.6                            | 0.6                                     | 1.4                                                | 1,841    | 0.6        | [0.2]                                  | 0.7                            | 0.9                                     | 1.5                                                | 1,541  | 0.7        | 0.3                                    | 0.7                            | 0.8                                     | 1.4                                                | 3,382  |
| <b>Caste/tribe</b>                       |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Scheduled tribe                          | 0.2        | 0.1                                    | 0.3                            | 0.6                                     | 1.0                                                | 7,326    | 0.6        | 0.2                                    | 0.5                            | 1.5                                     | 1.8                                                | 5,160  | 0.4        | 0.2                                    | 0.4                            | 1.0                                     | 1.3                                                | 12,486 |
| Scheduled caste                          | 0.5        | 0.3                                    | 0.4                            | 1.4                                     | 1.8                                                | 6,889    | 1.1        | 0.3                                    | 1.7                            | 1.6                                     | 3.1                                                | 5,128  | 0.8        | 0.3                                    | 1.0                            | 1.5                                     | 2.4                                                | 12,017 |
| Other backward class                     | 0.5        | 0.4                                    | 0.4                            | 1.3                                     | 2.0                                                | 15,254   | 0.8        | 0.3                                    | 0.8                            | 1.6                                     | 2.6                                                | 11,853 | 0.6        | 0.4                                    | 0.6                            | 1.4                                     | 2.3                                                | 27,107 |
| None of the above                        | 0.5        | 0.4                                    | 0.5                            | 1.5                                     | 2.3                                                | 11,206   | 0.7        | 0.5                                    | 0.9                            | 1.6                                     | 2.5                                                | 9,240  | 0.6        | 0.4                                    | 0.7                            | 1.5                                     | 2.4                                                | 20,446 |
| <b>Education</b>                         |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| No schooling                             | 0.5        | 0.5                                    | 0.4                            | 1.1                                     | 1.7                                                | 16,286   | 1.0        | 0.4                                    | 1.2                            | 1.5                                     | 2.7                                                | 16,857 | 0.8        | 0.4                                    | 0.8                            | 1.3                                     | 2.2                                                | 33,143 |
| Less than 5 years complete               | 0.5        | 0.5                                    | 0.7                            | 1.5                                     | 2.4                                                | 4,263    | 0.4        | 0.2                                    | 0.6                            | 1.9                                     | 2.6                                                | 3,774  | 0.4        | 0.4                                    | 0.7                            | 1.7                                     | 2.5                                                | 8,037  |
| 5-9 years complete                       | 0.5        | 0.4                                    | 0.4                            | 1.6                                     | 2.3                                                | 10,870   | 0.6        | 0.3                                    | 0.8                            | 1.7                                     | 2.5                                                | 5,997  | 0.5        | 0.4                                    | 0.6                            | 1.6                                     | 2.4                                                | 16,867 |
| 10 or more years complete                | 0.4        | 0.1                                    | 0.2                            | 1.3                                     | 1.8                                                | 9,256    | 0.6        | 0.4                                    | 0.5                            | 1.3                                     | 2.3                                                | 4,753  | 0.4        | 0.2                                    | 0.3                            | 1.3                                     | 2.0                                                | 14,009 |
| <b>Work status</b>                       |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Currently working                        | 0.3        | 0.2                                    | 0.3                            | 0.9                                     | 1.3                                                | 23,620   | 0.2        | 0.1                                    | 0.4                            | 1.3                                     | 1.6                                                | 9,283  | 0.3        | 0.2                                    | 0.3                            | 1.0                                     | 1.4                                                | 32,903 |
| Worked in past but currently not working | 1.1        | 1.4                                    | 1.0                            | 2.8                                     | 3.9                                                | 4,564    | 0.9        | 0.5                                    | 1.0                            | 1.9                                     | 3.0                                                | 13,329 | 0.9        | 0.7                                    | 1.0                            | 2.1                                     | 3.2                                                | 17,893 |
| Never worked                             | 0.6        | 0.4                                    | 0.4                            | 1.5                                     | 2.3                                                | 12,491   | 1.3        | 0.4                                    | 1.5                            | 1.4                                     | 3.1                                                | 8,769  | 0.9        | 0.4                                    | 0.9                            | 1.5                                     | 2.7                                                | 21,260 |

Continued

Continued

| Background characteristics | Age 45-59* |                                        |                                |                                         |                                                    | Age ≥ 60 |            |                                        |                                |                                         | Total                                              |        |            |                                        |                                |                                         |                                                    |        |
|----------------------------|------------|----------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------|----------|------------|----------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------|--------|------------|----------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------|--------|
|                            | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number   | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number |
| MPCE quintile              |            |                                        |                                |                                         |                                                    |          |            |                                        |                                |                                         |                                                    |        |            |                                        |                                |                                         |                                                    |        |
| Poorest                    | 0.3        | 0.2                                    | 0.3                            | 0.7                                     | 1.1                                                | 7,651    | 1.0        | 0.3                                    | 1.1                            | 1.3                                     | 2.6                                                | 6,463  | 0.6        | 0.2                                    | 0.7                            | 1.0                                     | 1.8                                                | 14,114 |
| Poorer                     | 0.5        | 0.7                                    | 0.4                            | 1.5                                     | 2.0                                                | 8,033    | 0.9        | 0.3                                    | 1.1                            | 1.2                                     | 2.3                                                | 6,458  | 0.7        | 0.5                                    | 0.7                            | 1.3                                     | 2.1                                                | 14,491 |
| Middle                     | 0.4        | 0.3                                    | 0.3                            | 1.1                                     | 1.7                                                | 8,102    | 0.7        | 0.5                                    | 0.8                            | 1.7                                     | 2.5                                                | 6,399  | 0.5        | 0.4                                    | 0.5                            | 1.4                                     | 2.1                                                | 14,501 |
| Richer                     | 0.5        | 0.4                                    | 0.5                            | 1.4                                     | 2.3                                                | 8,496    | 0.6        | 0.4                                    | 0.9                            | 2.1                                     | 2.9                                                | 6,160  | 0.6        | 0.4                                    | 0.7                            | 1.7                                     | 2.6                                                | 14,656 |
| Richest                    | 0.6        | 0.3                                    | 0.5                            | 1.9                                     | 2.5                                                | 8,393    | 0.7        | 0.3                                    | 0.9                            | 1.8                                     | 2.6                                                | 5,901  | 0.7        | 0.3                                    | 0.6                            | 1.8                                     | 2.5                                                | 14,294 |
| Total                      | 0.5        | 0.4                                    | 0.4                            | 1.3                                     | 1.9                                                | 40,675   | 0.8        | 0.4                                    | 1.0                            | 1.6                                     | 2.6                                                | 31,381 | 0.6        | 0.4                                    | 0.7                            | 1.4                                     | 2.2                                                | 72,056 |

Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

<sup>1</sup> Any psychiatric problem includes unipolar or bipolar disorder, schizophrenia.

<sup>2</sup>Any neurological problem includes neuropathy, convulsion, migraine, Parkinson's etc. (any one or more).

<sup>3</sup>Any neurological/psychiatric problem includes depression, Alzheimer's disease, dementia or psychiatric problem or neurological problem.

**Table 7.10 Self-reported prevalence (%) of diagnosed neurological or psychiatric conditions among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59* |                          |       |                                   |       |                                |                          |       |                                   |       | Age ≥ 60                               |                          |       |                                   |       |            |                          |       |                                   |       | Total                          |                          |       |                                   |       |                                        |                          |       |                                   |       |
|-----------------------|------------|--------------------------|-------|-----------------------------------|-------|--------------------------------|--------------------------|-------|-----------------------------------|-------|----------------------------------------|--------------------------|-------|-----------------------------------|-------|------------|--------------------------|-------|-----------------------------------|-------|--------------------------------|--------------------------|-------|-----------------------------------|-------|----------------------------------------|--------------------------|-------|-----------------------------------|-------|
|                       | Depression |                          |       |                                   |       | Alzheimer's Disease & Dementia |                          |       |                                   |       | Other Psychiatric Problem <sup>1</sup> |                          |       |                                   |       | Depression |                          |       |                                   |       | Alzheimer's Disease & Dementia |                          |       |                                   |       | Other Psychiatric Problem <sup>2</sup> |                          |       |                                   |       |
|                       | Number     | Any Problem <sup>3</sup> | Other | Neurological Problem <sup>2</sup> | Other | Number                         | Any Problem <sup>3</sup> | Other | Neurological Problem <sup>2</sup> | Other | Number                                 | Any Problem <sup>3</sup> | Other | Neurological Problem <sup>2</sup> | Other | Number     | Any Problem <sup>3</sup> | Other | Neurological Problem <sup>2</sup> | Other | Number                         | Any Problem <sup>3</sup> | Other | Neurological Problem <sup>2</sup> | Other | Number                                 | Any Problem <sup>3</sup> | Other | Neurological Problem <sup>2</sup> | Other |
| <b>India</b>          | 40,675     | 1.9                      | 1.3   | 0.4                               | 1.3   | 40,675                         | 1.9                      | 1.3   | 0.4                               | 1.3   | 40,675                                 | 1.9                      | 1.3   | 0.4                               | 1.3   | 40,675     | 1.9                      | 1.3   | 0.4                               | 1.3   | 40,675                         | 1.9                      | 1.3   | 0.4                               | 1.3   | 40,675                                 | 1.9                      | 1.3   | 0.4                               | 1.3   |
| <b>North</b>          |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |
| Chandigarh            | 0.5        | 0.4                      | 0.4   | 0.4                               | 0.4   | 625                            | 1.5                      | 0.2   | 0.4                               | 0.4   | 2.1                                    | 0.2                      | 0.3   | 0.3                               | 2.0   | 0.2        | 0.3                      | 0.3   | 0.3                               | 2.0   | 0.2                            | 0.3                      | 0.3   | 0.3                               | 1.3   | 0.2                                    | 0.3                      | 0.3   | 1.1                               | 0.4   |
| Delhi                 | 0.8        | 0.1                      | 0.4   | 0.4                               | 0.4   | 821                            | 1.9                      | 1.0   | 0.4                               | 0.4   | 0.2                                    | 0.2                      | 0.2   | 0.2                               | 0.3   | 0.2        | 0.3                      | 0.2   | 0.3                               | 0.2   | 0.3                            | 0.2                      | 0.3   | 0.2                               | 0.3   | 0.2                                    | 0.3                      | 0.2   | 0.3                               | 1.1   |
| Haryana               | 0.3        | 0.1                      | 0.1   | 0.1                               | 0.1   | 1,048                          | 0.6                      | 0.4   | 0.4                               | 0.4   | 0.2                                    | 0.2                      | 0.2   | 0.2                               | 0.2   | 0.2        | 0.2                      | 0.2   | 0.2                               | 0.2   | 0.2                            | 0.2                      | 0.2   | 0.2                               | 0.3   | 0.2                                    | 0.2                      | 0.2   | 0.4                               | 0.8   |
| Himachal Pradesh      | 0.4        | 0.4                      | 0.4   | 0.4                               | 0.4   | 765                            | 0.9                      | 0.3   | 0.3                               | 0.3   | 0.8                                    | 0.8                      | 0.1   | 0.1                               | -     | 0.5        | 0.9                      | 0.5   | 0.5                               | 0.5   | 0.9                            | 0.5                      | 0.5   | 0.5                               | 0.6   | 0.2                                    | 0.2                      | 0.2   | 0.4                               | 0.9   |
| Jammu & Kashmir       | 0.4        | 0.2                      | 0.2   | 0.2                               | 0.2   | 880                            | 2.7                      | 1.4   | 0.8                               | 1.4   | 1.3                                    | 0.8                      | 0.5   | 0.5                               | 1.0   | 2.9        | 5.3                      | 2.9   | 5.3                               | 2.9   | 0.9                            | 0.4                      | 0.9   | 2.1                               | 4.0   | 1.610                                  | 1.610                    | 1.610 | 4.0                               | 4.0   |
| Punjab                | 1.3        | 0.4                      | 0.7   | 0.3                               | 0.3   | 1,112                          | 2.4                      | 0.8   | 0.8                               | 0.8   | 0.6                                    | 0.6                      | 0.4   | 0.4                               | 1.2   | 1.6        | 2.2                      | 1.6   | 2.2                               | 1.6   | 0.4                            | 0.4                      | 0.9   | 1.2                               | 2.3   | 2,115                                  | 2,115                    | 2,115 | 2.3                               | 2.3   |
| Rajasthan             | 0.5        | 0.2                      | 0.2   | 0.2                               | 0.2   | 1,161                          | 0.8                      | 0.2   | 0.2                               | 0.2   | 0.2                                    | 0.2                      | -     | -                                 | -     | 1.1        | 1.5                      | 1.1   | 1.5                               | 1.1   | 0.1                            | 0.1                      | 0.1   | 0.7                               | 1.2   | 2,238                                  | 2,238                    | 2,238 | 1.2                               | 1.2   |
| Uttarakhand           | 0.1        | 0.1                      | -     | -                                 | 0.3   | 715                            | 0.4                      | 0.3   | 0.3                               | 0.3   | 0.2                                    | 0.2                      | -     | -                                 | 0.7   | 0.7        | 1.0                      | 0.7   | 1.0                               | 0.7   | 0.3                            | 0.3                      | 0.3   | 0.5                               | 0.7   | 1,356                                  | 1,356                    | 1,356 | 0.7                               | 0.7   |
| <b>Central</b>        |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |
| Chhattisgarh          | 0.1        | 0.1                      | 0.1   | 0.1                               | 0.1   | 1,275                          | 0.3                      | 0.1   | 0.1                               | 0.1   | 0.3                                    | 0.3                      | 0.1   | 0.1                               | 0.1   | 0.6        | 0.9                      | 0.6   | 0.9                               | 0.6   | 0.1                            | 0.1                      | 0.1   | 0.3                               | 0.5   | 2,054                                  | 2,054                    | 2,054 | 0.5                               | 0.5   |
| Madhya Pradesh        | 0.6        | 0.1                      | 0.2   | 0.2                               | 0.2   | 1,599                          | 0.9                      | 0.4   | 0.3                               | 0.3   | 1.3                                    | 0.1                      | 0.1   | 0.1                               | 0.2   | 0.9        | 1.8                      | 0.9   | 1.8                               | 0.9   | 0.2                            | 0.2                      | 0.2   | 0.6                               | 1.4   | 2,912                                  | 2,912                    | 2,912 | 1.4                               | 1.4   |
| Uttar Pradesh         | 0.4        | 0.1                      | 0.1   | 0.1                               | 0.1   | 2,394                          | 1.4                      | 1.1   | 0.4                               | 0.4   | 0.7                                    | 0.7                      | 0.4   | 0.4                               | 0.7   | 1.3        | 1.6                      | 1.3   | 1.6                               | 1.3   | 0.2                            | 0.5                      | 0.5   | 1.2                               | 1.5   | 4,561                                  | 4,561                    | 4,561 | 1.5                               | 1.5   |
| <b>East</b>           |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |
| Bihar                 | 0.1        | 0.2                      | 0.2   | 0.2                               | 0.2   | 1,709                          | 0.4                      | 0.2   | -                                 | -     | 0.2                                    | 0.2                      | -     | -                                 | -     | 0.4        | 0.5                      | 0.4   | 0.5                               | 0.4   | 0.1                            | 0.1                      | 0.1   | 0.3                               | 0.5   | 3,516                                  | 3,516                    | 3,516 | 0.5                               | 0.5   |
| Jharkhand             | 0.1        | 0.5                      | 0.1   | 0.1                               | 0.3   | 1,294                          | 1.0                      | 0.3   | 0.1                               | 0.1   | 0.1                                    | 0.1                      | 0.1   | 0.1                               | 0.1   | 0.3        | 0.6                      | 0.3   | 0.6                               | 0.3   | 0.1                            | 0.1                      | 0.1   | 0.3                               | 0.8   | 2,462                                  | 2,462                    | 2,462 | 0.8                               | 0.8   |
| Odisha                | 0.2        | 0.1                      | -     | -                                 | 0.7   | 1,676                          | 1.0                      | 0.7   | 0.1                               | 0.7   | 0.1                                    | 0.1                      | 0.7   | 0.1                               | 0.1   | 0.6        | 1.3                      | 0.6   | 1.3                               | 0.6   | 0.2                            | -                        | -     | 0.6                               | 1.1   | 2,911                                  | 2,911                    | 2,911 | 1.1                               | 1.1   |
| West Bengal           | 0.7        | 0.8                      | 1.3   | 1.3                               | 3.3   | 2,383                          | 4.7                      | 3.3   | 1.1                               | 1.1   | 3.4                                    | 4.7                      | 1.1   | 5.4                               | 5.4   | 3.3        | 8.1                      | 3.3   | 8.1                               | 3.3   | 1.8                            | 3.0                      | 3.0   | 3.3                               | 6.1   | 3,923                                  | 3,923                    | 3,923 | 6.1                               | 6.1   |
| <b>Northeast</b>      |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |
| Arunachal Pradesh     | -          | -                        | 0.1   | 0.1                               | 0.3   | 897                            | 0.4                      | 0.3   | -                                 | -     | -                                      | 0.4                      | -     | -                                 | -     | 1.2        | 1.2                      | 1.2   | 1.2                               | 1.2   | 0.1                            | 0.1                      | 0.1   | 0.5                               | 0.6   | 1,215                                  | 1,215                    | 1,215 | 0.6                               | 0.6   |
| Assam                 | 0.4        | 0.2                      | 0.4   | 0.4                               | 1.0   | 1,548                          | 1.7                      | 1.0   | 0.5                               | 0.5   | 0.2                                    | 0.2                      | 0.5   | 0.9                               | 0.9   | 1.3        | 2.2                      | 1.3   | 2.2                               | 1.3   | 0.6                            | 0.6                      | 0.6   | 1.1                               | 1.9   | 2,362                                  | 2,362                    | 2,362 | 1.9                               | 1.9   |
| Manipur               | 0.3        | -                        | -     | -                                 | 0.9   | 761                            | 1.2                      | 0.9   | 0.1                               | 0.1   | 0.3                                    | 0.3                      | 0.1   | 0.5                               | 0.5   | 0.3        | 1.2                      | 0.3   | 1.2                               | 0.3   | 0.2                            | 0.2                      | 0.2   | 0.6                               | 1.2   | 1,366                                  | 1,366                    | 1,366 | 1.2                               | 1.2   |
| Meghalaya             | 0.3        | 0.1                      | 0.1   | 0.1                               | -     | 556                            | 0.3                      | -     | 0.2                               | 0.2   | -                                      | 0.3                      | 0.2   | -                                 | -     | 0.8        | 1.0                      | 0.8   | 1.0                               | 0.8   | -                              | -                        | -     | 0.3                               | 0.6   | 967                                    | 967                      | 967   | 0.6                               | 0.6   |
| Mizoram               | 0.2        | 0.1                      | 0.2   | 0.2                               | 0.4   | 714                            | 0.4                      | 0.4   | 0.1                               | 0.1   | -                                      | 0.4                      | 0.1   | 1.6                               | 1.6   | 2.7        | 3.1                      | 2.7   | 3.1                               | 2.7   | 0.8                            | 0.8                      | 0.8   | 1.4                               | 1.6   | 1,245                                  | 1,245                    | 1,245 | 1.6                               | 1.6   |
| Nagaland              | -          | -                        | -     | -                                 | 0.3   | 708                            | 0.3                      | 0.3   | -                                 | -     | -                                      | 0.3                      | -     | 4.7                               | 4.7   | -          | 4.7                      | 4.7   | 4.7                               | -     | 2.3                            | 2.3                      | 2.3   | 0.1                               | 2.4   | 1,312                                  | 1,312                    | 1,312 | 2.4                               | 2.4   |
| Tripura               | -          | 0.3                      | -     | -                                 | 0.5   | 732                            | 0.8                      | 0.5   | 0.8                               | 0.8   | 0.6                                    | 0.6                      | 0.8   | 0.6                               | 0.6   | 2.4        | 2.5                      | 2.4   | 2.5                               | 2.4   | 0.2                            | 0.2                      | 0.2   | 1.3                               | 1.5   | 1,192                                  | 1,192                    | 1,192 | 1.5                               | 1.5   |
| <b>West</b>           |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |            |                          |       |                                   |       |                                |                          |       |                                   |       |                                        |                          |       |                                   |       |
| Dadra & Nagar Haveli  | -          | 0.5                      | 0.1   | 0.1                               | 1.6   | 635                            | 2.0                      | 1.6   | 0.2                               | 0.2   | 0.6                                    | 0.6                      | 0.2   | 0.3                               | 0.3   | 2.5        | 3.2                      | 2.5   | 3.2                               | 2.5   | 0.2                            | 0.2                      | 0.2   | 1.9                               | 2.5   | 1,085                                  | 1,085                    | 1,085 | 2.5                               | 2.5   |
| Daman & Diu           | 0.1        | -                        | 0.2   | 0.2                               | 2.3   | 556                            | 2.6                      | 2.3   | 0.6                               | 0.6   | -                                      | 0.6                      | 0.6   | -                                 | -     | 0.2        | 0.8                      | 0.2   | 0.8                               | 0.2   | 0.1                            | 0.1                      | 0.1   | 1.3                               | 1.7   | 985                                    | 985                      | 985   | 1.7                               | 1.7   |
| Goa                   | 0.3        | 0.2                      | 0.1   | 0.1                               | -     | 788                            | 0.8                      | -     | 0.3                               | 0.3   | 1.0                                    | 0.8                      | 0.3   | 1.0                               | 1.0   | 1.0        | 2.8                      | 1.0   | 2.8                               | 1.0   | 0.5                            | 0.5                      | 0.5   | 0.4                               | 1.8   | 1,422                                  | 1,422                    | 1,422 | 1.8                               | 1.8   |
| Gujarat               | 0.6        | 1.2                      | 0.6   | 0.6                               | 1.6   | 1,344                          | 2.7                      | 1.6   | 0.4                               | 0.4   | 0.2                                    | 2.7                      | 0.4   | 0.1                               | 0.1   | 2.4        | 2.7                      | 2.4   | 2.7                               | 2.4   | 0.4                            | 0.4                      | 0.4   | 1.9                               | 2.7   | 2,328                                  | 2,328                    | 2,328 | 2.7                               | 2.7   |
| Maharashtra           | 0.3        | 0.2                      | 0.2   | 0.2                               | 0.6   | 2,176                          | 0.7                      | 0.6   | 0.3                               | 0.3   | -                                      | 0.7                      | 0.3   | 0.3                               | 0.3   | 0.7        | 1.2                      | 0.7   | 1.2                               | 0.7   | 0.2                            | 0.2                      | 0.2   | 0.6                               | 0.9   | 3,962                                  | 3,962                    | 3,962 | 0.9                               | 0.9   |

Continued

## Continued

| State/Union Territory     | Age 45-59* |                                        |                                             |                                         |                                                    | Age ≥ 60 |            |                                        |                                             |                                         | Total                                              |        |            |                                        |                                             |                                         |                                                    |       |
|---------------------------|------------|----------------------------------------|---------------------------------------------|-----------------------------------------|----------------------------------------------------|----------|------------|----------------------------------------|---------------------------------------------|-----------------------------------------|----------------------------------------------------|--------|------------|----------------------------------------|---------------------------------------------|-----------------------------------------|----------------------------------------------------|-------|
|                           | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia <sup>1</sup> | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number   | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia <sup>1</sup> | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> | Number | Depression | Other Psychiatric Problem <sup>1</sup> | Alzheimer's Disease & Dementia <sup>1</sup> | Other Neurological Problem <sup>2</sup> | Any Neurological /Psychiatric Problem <sup>3</sup> |       |
|                           |            |                                        |                                             |                                         |                                                    |          |            |                                        |                                             |                                         |                                                    |        |            |                                        |                                             |                                         |                                                    |       |
| South                     |            |                                        |                                             |                                         |                                                    |          |            |                                        |                                             |                                         |                                                    |        |            |                                        |                                             |                                         |                                                    |       |
| Andaman & Nicobar Islands | [0.6]      | [0.4]                                  | [0.5]                                       | 1.0                                     | 2.3                                                | 721      | 1.8        | [0.2]                                  | 1.0                                         | 2.0                                     | 3.8                                                | 521    | 1.1        | [0.3]                                  | 0.7                                         | 1.4                                     | 2.9                                                | 1,242 |
| Andhra Pradesh            | 0.6        | [0.2]                                  | 0.8                                         | 1.8                                     | 2.4                                                | 1,569    | 0.7        | [0.3]                                  | 1.1                                         | 2.5                                     | 3.6                                                | 1,098  | 0.6        | 0.3                                    | 0.9                                         | 2.1                                     | 2.9                                                | 2,667 |
| Karnataka                 | [0.3]      | 0.8                                    | [0.1]                                       | 1.9                                     | 2.4                                                | 1,411    | 0.3        | 0.4                                    | 0.4                                         | 2.3                                     | 2.8                                                | 1,002  | 0.3        | 0.6                                    | [0.2]                                       | 2.0                                     | 2.5                                                | 2,413 |
| Kerala                    | 1.2        | 0.6                                    | [0.2]                                       | 1.0                                     | 2.9                                                | 1,276    | 0.3        | 0.5                                    | [0.7]                                       | 0.5                                     | 1.7                                                | 1,206  | 0.8        | 0.5                                    | 0.4                                         | 0.7                                     | 2.3                                                | 2,482 |
| Lakshadweep               | [0.5]      | 0.8                                    | -                                           | [0.1]                                   | 1.4                                                | 637      | -          | -                                      | -                                           | [0.4]                                   | [0.4]                                              | 500    | [0.2]      | 0.4                                    | -                                           | 0.2                                     | 0.9                                                | 1,137 |
| Puducherry                | [0.3]      | [0.2]                                  | 0.5                                         | 1.1                                     | 1.9                                                | 787      | 1.3        | 1.0                                    | 1.8                                         | 4.2                                     | 6.9                                                | 638    | 0.8        | 0.6                                    | 1.1                                         | 2.6                                     | 4.2                                                | 1,425 |
| Tamil Nadu                | 0.5        | [0.1]                                  | 0.3                                         | 1.6                                     | 2.6                                                | 1,995    | 0.9        | [0.2]                                  | 1.1                                         | 3.1                                     | 4.8                                                | 1,530  | 0.7        | 0.2                                    | 0.7                                         | 2.3                                     | 3.6                                                | 3,525 |
| Telangana                 | 2.5        | 0.6                                    | 2.1                                         | 4.3                                     | 5.2                                                | 1,407    | 2.8        | 0.5                                    | 2.9                                         | 6.4                                     | 7.0                                                | 1,051  | 2.6        | 0.6                                    | 2.4                                         | 5.2                                     | 6.0                                                | 2,458 |

## Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

<sup>1</sup> Any psychiatric problem includes unipolar or bipolar disorder, schizophrenia.

<sup>2</sup> Any neurological problem includes neuropathy, convulsion, migraine, Parkinson's etc. (any one or more).

<sup>3</sup> Any neurological/psychiatric problem includes depression, Alzheimer's disease, dementia or psychiatric problem or neurological problem.

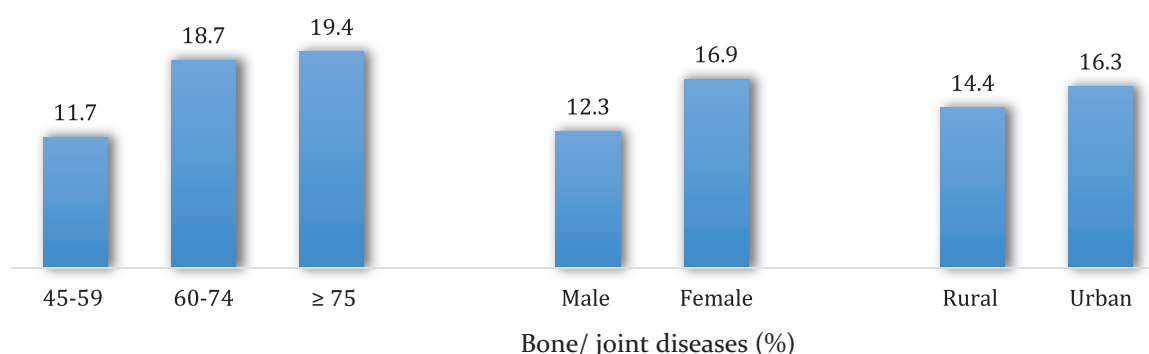


### 7.2.8 Bone or joint diseases

Bone or joint diseases include arthritis, osteoporosis, osteomalacia (softening of the bone), gout, bone fracture, joint displacement, and bursitis, with arthritis being the most commonly reported bone/joint disease. Arthritis involves inflammation of one or more joints, and its two most common types are osteoarthritis and rheumatoid arthritis. Osteoporosis is a progressive bone disease that is characterised by a decrease in bone mass and density. In the LASI, respondents were asked questions on bone or joint diseases particularly about arthritis, rheumatism, and osteoporosis. Apart from a standard set of questions on bone or joint diseases, information was also collected for osteoporosis regarding who diagnosed and when diagnosed.

Table 7.11 presents the self-reported prevalence of chronic bone or joint diseases in India by background characteristics. Overall, the self-reported prevalence of any bone or joint disease among older adults age 45 years and above in India is 15%. The self-reported prevalence of diagnosed arthritis, rheumatism, and osteoporosis is 9%, 6%, and 0.9%, respectively. The self-reported prevalence of any bone or joint disease is higher among elderly age 60 and above (19%) than in older adults age 45-59 (12%). Among elderly age 60 and above, the prevalence of any bone/joint disease is higher among women (22%) than among men (16%) and higher among those residing in urban areas (22%) than in rural areas (17%). Further, the prevalence rate increases with MPCE quintile, but does not show any pattern according to educational level. Overall, 11% of the elderly age 60 and above in India reported arthritis, and 8% reported rheumatism; whereas, only 7% and 5%, respectively, of older adults age 45-59 reported such conditions. Among elderly age 60 and above, the prevalence of arthritis and rheumatism is higher in urban areas than in rural areas and higher among women than among men. The prevalence of diagnosed osteoporosis is higher among elderly age 60 and above (1.3%) than among older adults age 45-59 (0.6%).

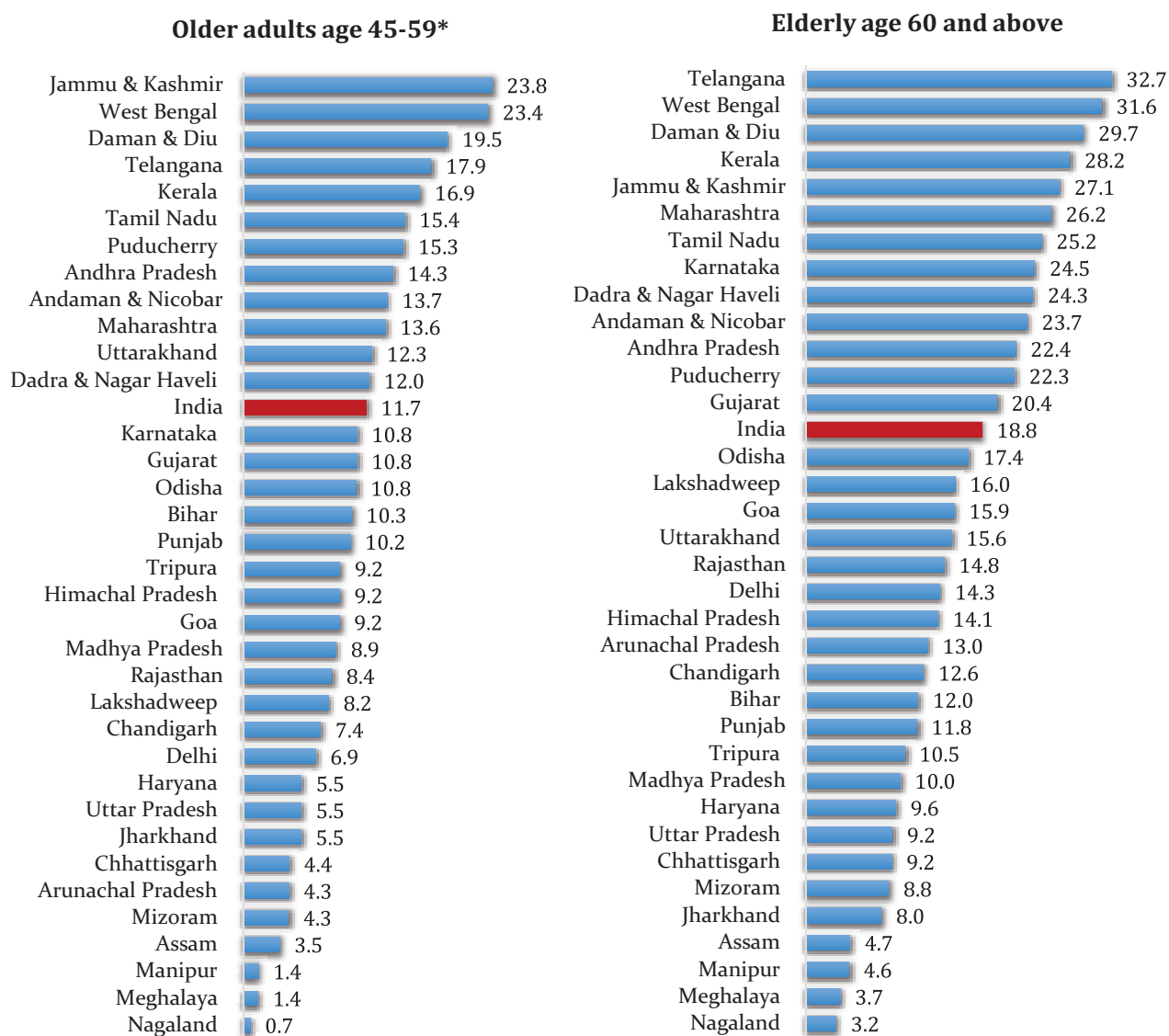
**Figure 7.8 Self-reported prevalence (%) of diagnosed chronic bone/Joint disease among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

The prevalence of any chronic bone or joint disease shows considerable variations across states/UTs of India (Table 7.12). More than 20% of older adults age 45 and above in the states/UTs of West Bengal (27%), Jammu & Kashmir (25%), Telangana (25%), Daman & Diu (24%), and Kerala (23%) reported that they have bone or joint disease. Among elderly age 60 and above, the prevalence rate of any bone disease ranges from 33% in Telangana to 3% in Nagaland. The prevalence of diagnosed arthritis is the highest in Jammu & Kashmir (22%), and the prevalence rate is more than 10% in all south Indian states/UTs. Among elderly age 60 and above, the prevalence of diagnosed rheumatism is the highest in West Bengal (23%), while the prevalence of diagnosed osteoporosis is the highest in Kerala (4.3%).

**Figure 7.9 Self-reported prevalence (%) of diagnosed chronic bone/joint diseases among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

**Table 7.11 Self-reported prevalence (%) of diagnosed chronic bone/joint diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59* |            |              |                                         |        | Age ≥ 60  |            |              |                                         |        | Total     |            |              |                                         |        |
|---------------------------------------------|------------|------------|--------------|-----------------------------------------|--------|-----------|------------|--------------|-----------------------------------------|--------|-----------|------------|--------------|-----------------------------------------|--------|
|                                             | Arthritis  | Rheumatism | Osteoporosis | Any Bone/<br>Joint Disease <sup>1</sup> | Number | Arthritis | Rheumatism | Osteoporosis | Any Bone/<br>Joint Disease <sup>1</sup> | Number | Arthritis | Rheumatism | Osteoporosis | Any Bone/<br>Joint Disease <sup>1</sup> | Number |
| <b>Place of residence</b>                   |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Rural                                       | 6.7        | 5.1        | 0.7          | 11.7                                    | 25,754 | 9.7       | 7.4        | 1.3          | 17.4                                    | 20,690 | 8.1       | 6.2        | 1.0          | 14.4                                    | 46,444 |
| Urban                                       | 7.5        | 3.9        | 0.5          | 11.9                                    | 14,928 | 13.3      | 7.8        | 1.3          | 22.4                                    | 10,694 | 10.0      | 5.5        | 0.8          | 16.3                                    | 25,622 |
| <b>Sex</b>                                  |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Male                                        | 5.7        | 2.8        | 0.5          | 8.8                                     | 15,427 | 8.5       | 6.2        | 1.2          | 15.5                                    | 15,041 | 7.1       | 4.5        | 0.9          | 12.3                                    | 30,468 |
| Female                                      | 7.8        | 5.8        | 0.7          | 13.5                                    | 25,255 | 12.8      | 8.8        | 1.4          | 21.8                                    | 16,343 | 9.9       | 7.0        | 1.0          | 16.9                                    | 41,598 |
| <b>Marital status</b>                       |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Currently married                           | 6.8        | 4.7        | 0.6          | 11.7                                    | 35,386 | 9.5       | 7.2        | 1.3          | 17.3                                    | 19,869 | 7.8       | 5.6        | 0.8          | 13.8                                    | 55,255 |
| Widowed                                     | 9.0        | 5.1        | 0.9          | 13.5                                    | 3,864  | 13.0      | 8.3        | 1.4          | 21.7                                    | 10,694 | 12.1      | 7.5        | 1.3          | 19.7                                    | 14,558 |
| Divorced/Separated/Deserted/<br>Others      | 5.7        | 3.3        | 0.6          | 8.5                                     | 1,432  | 8.1       | 5.4        | 0.6          | 13.1                                    | 821    | 6.6       | 4.0        | 0.6          | 10.2                                    | 2,253  |
| <b>Living arrangement</b>                   |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Living alone                                | 8.1        | 5.2        | 1.0          | 14.1                                    | 689    | 12.7      | 8.3        | 2.5          | 21.5                                    | 1,618  | 11.7      | 7.6        | 2.1          | 19.8                                    | 2,307  |
| Living with spouse and/or others            | 10.5       | 5.3        | 0.6          | 16.0                                    | 4,535  | 10.3      | 7.2        | 1.3          | 18.3                                    | 6,168  | 10.4      | 6.5        | 1.0          | 17.3                                    | 10,703 |
| Living with spouse and children             | 6.3        | 4.6        | 0.6          | 11.0                                    | 30,197 | 9.1       | 7.2        | 1.3          | 16.9                                    | 13,461 | 7.2       | 5.4        | 0.8          | 12.9                                    | 43,658 |
| Living with children and others             | 8.3        | 5.1        | 0.7          | 12.9                                    | 4,075  | 13.1      | 8.3        | 1.1          | 21.8                                    | 8,417  | 11.7      | 7.4        | 1.0          | 19.3                                    | 12,492 |
| Living with others only                     | 6.2        | 3.6        | 1.1          | 9.2                                     | 1,186  | 10.5      | 6.8        | 1.2          | 17.0                                    | 1,720  | 8.9       | 5.6        | 1.2          | 14.1                                    | 2,906  |
| <b>Religion</b>                             |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Hindu                                       | 7.0        | 4.6        | 0.6          | 11.8                                    | 29,856 | 10.9      | 7.5        | 1.4          | 18.7                                    | 22,983 | 8.8       | 5.9        | 0.9          | 15.0                                    | 52,839 |
| Muslim                                      | 7.9        | 6.4        | 0.9          | 13.1                                    | 4,927  | 11.1      | 10.0       | 1.2          | 21.5                                    | 3,721  | 9.3       | 7.9        | 1.0          | 16.8                                    | 8,648  |
| Christian                                   | 4.6        | 1.5        | 0.4          | 7.0                                     | 4,058  | 10.6      | 3.8        | 1.0          | 17.4                                    | 3,138  | 7.3       | 2.5        | 0.6          | 11.6                                    | 7,196  |
| Others                                      | 6.3        | 2.9        | 0.1          | 10.1                                    | 1,841  | 7.5       | 5.0        | 0.9          | 14.6                                    | 1,542  | 6.9       | 3.9        | 0.5          | 12.3                                    | 3,383  |
| <b>Caste/tribe</b>                          |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Scheduled tribe                             | 4.8        | 3.3        | 0.8          | 7.5                                     | 7,327  | 6.7       | 5.0        | 1.0          | 11.7                                    | 5,160  | 5.6       | 4.0        | 0.9          | 9.3                                     | 12,487 |
| Scheduled caste                             | 6.6        | 5.0        | 0.6          | 11.2                                    | 6,889  | 10.5      | 7.4        | 1.4          | 17.6                                    | 5,130  | 8.4       | 6.1        | 1.0          | 14.1                                    | 12,019 |
| Other backward class                        | 7.6        | 3.8        | 0.5          | 12.2                                    | 15,258 | 12.1      | 6.8        | 1.4          | 20.1                                    | 11,853 | 9.7       | 5.2        | 0.9          | 15.8                                    | 27,111 |
| None of the above                           | 6.9        | 6.4        | 0.7          | 12.7                                    | 11,208 | 9.9       | 9.6        | 1.2          | 19.7                                    | 9,241  | 8.3       | 7.9        | 0.9          | 16.0                                    | 20,449 |
| <b>Education</b>                            |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| No schooling                                | 6.8        | 5.1        | 0.6          | 12.0                                    | 16,288 | 10.0      | 7.7        | 1.3          | 18.1                                    | 16,860 | 8.5       | 6.5        | 0.9          | 15.2                                    | 33,148 |
| Less than 5 years complete                  | 8.5        | 5.6        | 0.8          | 13.8                                    | 4,264  | 11.9      | 8.5        | 1.5          | 20.5                                    | 3,774  | 10.1      | 7.0        | 1.1          | 17.1                                    | 8,038  |
| 5-9 years complete                          | 6.9        | 4.8        | 0.6          | 11.8                                    | 10,872 | 11.8      | 7.2        | 1.3          | 20.0                                    | 5,997  | 8.8       | 5.7        | 0.8          | 15.0                                    | 16,869 |
| 10 or more years complete                   | 6.7        | 3.3        | 0.7          | 10.3                                    | 9,258  | 11.4      | 6.7        | 1.4          | 19.1                                    | 4,753  | 8.4       | 4.4        | 0.9          | 13.3                                    | 14,011 |
| <b>Work status</b>                          |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Currently working                           | 6.4        | 3.7        | 0.5          | 10.1                                    | 23,623 | 7.9       | 5.3        | 0.8          | 13.9                                    | 9,283  | 6.9       | 4.2        | 0.6          | 11.3                                    | 32,906 |
| Worked in past but currently not<br>working | 8.8        | 7.0        | 0.9          | 16.0                                    | 4,566  | 11.5      | 8.5        | 1.6          | 20.3                                    | 13,331 | 10.8      | 8.1        | 1.4          | 19.2                                    | 17,897 |
| Never worked                                | 7.4        | 5.8        | 0.8          | 13.4                                    | 12,493 | 12.9      | 8.7        | 1.3          | 22.1                                    | 8,770  | 9.8       | 7.0        | 1.0          | 17.2                                    | 21,263 |

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## Continued

| Background characteristics | Age 45-59* |            |              |                                         |               | Age ≥ 60    |            |              |                                         |               | Total      |            |              |                                         |               |
|----------------------------|------------|------------|--------------|-----------------------------------------|---------------|-------------|------------|--------------|-----------------------------------------|---------------|------------|------------|--------------|-----------------------------------------|---------------|
|                            | Arthritis  | Rheumatism | Osteoporosis | Any Bone/<br>Joint Disease <sup>1</sup> | Number        | Arthritis   | Rheumatism | Osteoporosis | Any Bone/<br>Joint Disease <sup>1</sup> | Number        | Arthritis  | Rheumatism | Osteoporosis | Any Bone/<br>Joint Disease <sup>1</sup> | Number        |
| <b>MPCE quintile</b>       |            |            |              |                                         |               |             |            |              |                                         |               |            |            |              |                                         |               |
| Poorest                    | 5.5        | 3.5        | 0.3          | 8.9                                     | 7,652         | 8.5         | 5.4        | 0.9          | 14.7                                    | 6,463         | 6.9        | 4.4        | 0.6          | 11.7                                    | 14,115        |
| Poorer                     | 7.0        | 5.8        | 0.7          | 12.2                                    | 8,033         | 9.8         | 8.1        | 1.3          | 18.1                                    | 6,460         | 8.3        | 6.9        | 1.0          | 14.9                                    | 14,493        |
| Middle                     | 6.8        | 4.7        | 0.6          | 11.6                                    | 8,104         | 10.3        | 7.6        | 1.0          | 17.8                                    | 6,400         | 8.4        | 6.0        | 0.8          | 14.5                                    | 14,504        |
| Richer                     | 7.0        | 5.0        | 0.7          | 12.1                                    | 8,498         | 12.4        | 8.5        | 1.6          | 21.6                                    | 6,160         | 9.5        | 6.6        | 1.1          | 16.4                                    | 14,658        |
| Richest                    | 8.6        | 4.4        | 0.7          | 13.9                                    | 8,395         | 13.5        | 8.5        | 1.8          | 23.3                                    | 5,901         | 10.7       | 6.1        | 1.2          | 17.8                                    | 14,296        |
| <b>Total</b>               | <b>7.0</b> | <b>4.7</b> | <b>0.6</b>   | <b>11.7</b>                             | <b>40,682</b> | <b>10.7</b> | <b>7.6</b> | <b>1.3</b>   | <b>18.8</b>                             | <b>31,384</b> | <b>8.7</b> | <b>6.0</b> | <b>0.9</b>   | <b>15.0</b>                             | <b>72,066</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Bone /joint diseases include arthritis, rheumatism and osteoporosis (any one or more).

**Table 7.12 Self-reported prevalence (%) of diagnosed chronic bone/ joint diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59* |            |              |                             |               | Age ≥ 60    |            |              |                             |               | Total      |            |              |                             |               |
|-----------------------|------------|------------|--------------|-----------------------------|---------------|-------------|------------|--------------|-----------------------------|---------------|------------|------------|--------------|-----------------------------|---------------|
|                       | Arthritis  | Rheumatism | Osteoporosis | Any bone/<br>joint disease1 | Number        | Arthritis   | Rheumatism | Osteoporosis | Any bone/<br>joint disease1 | Number        | Arthritis  | Rheumatism | Osteoporosis | Any bone/<br>joint disease1 | Number        |
| <b>India</b>          | <b>7.0</b> | <b>4.7</b> | <b>0.6</b>   | <b>11.7</b>                 | <b>40,682</b> | <b>10.7</b> | <b>7.6</b> | <b>1.3</b>   | <b>18.8</b>                 | <b>31,384</b> | <b>8.7</b> | <b>6.0</b> | <b>0.9</b>   | <b>15.0</b>                 | <b>72,066</b> |
| <b>North</b>          |            |            |              |                             |               |             |            |              |                             |               |            |            |              |                             |               |
| Chandigarh            | 2.9        | [0.5]      | [0.2]        | 7.4                         | 625           | 4.0         | [1.7]      | [1.5]        | 12.6                        | 389           | 3.3        | 1.0        | [0.7]        | 9.4                         | 1,014         |
| Delhi                 | 4.1        | 1.4        | [0.1]        | 6.9                         | 822           | 5.9         | 2.0        | -            | 14.3                        | 495           | 4.8        | 1.6        | [0.1]        | 9.7                         | 1,317         |
| Haryana               | 2.0        | 1.2        | -            | 5.5                         | 1,048         | 2.4         | 4.7        | [0.3]        | 9.6                         | 847           | 2.2        | 2.9        | [0.2]        | 7.5                         | 1,895         |
| Himachal Pradesh      | 4.3        | 1.5        | 0.8          | 9.2                         | 765           | 7.3         | 3.4        | 2.5          | 14.1                        | 618           | 5.8        | 2.4        | 1.6          | 11.5                        | 1,383         |
| Jammu & Kashmir       | 19.7       | 3.4        | 0.6          | 23.8                        | 881           | 21.9        | 6.8        | [0.5]        | 27.1                        | 730           | 20.8       | 5.1        | 0.5          | 25.4                        | 1,611         |
| Punjab                | 4.1        | [0.3]      | [0.2]        | 10.2                        | 1,112         | 3.8         | [0.1]      | 0.6          | 11.8                        | 1,004         | 3.9        | 0.2        | 0.4          | 11.0                        | 2,116         |
| Rajasthan             | 4.6        | 3.6        | 1.3          | 8.4                         | 1,161         | 7.6         | 6.2        | 2.1          | 14.8                        | 1,077         | 6.1        | 4.9        | 1.7          | 11.6                        | 2,238         |
| Uttarakhand           | 3.6        | 2.2        | 0.3          | 12.3                        | 715           | 3.5         | 3.5        | [0.5]        | 15.6                        | 641           | 3.6        | 2.8        | 0.4          | 13.9                        | 1,356         |
| <b>Central</b>        |            |            |              |                             |               |             |            |              |                             |               |            |            |              |                             |               |
| Chhattisgarh          | 1.5        | 2.4        | 0.2          | 4.4                         | 1,275         | 3.9         | 5.6        | 0.7          | 9.2                         | 779           | 2.4        | 3.6        | 0.4          | 6.2                         | 2,054         |
| Madhya Pradesh        | 3.5        | 4.1        | 1.8          | 8.9                         | 1,599         | 2.8         | 5.1        | 2.8          | 10.0                        | 1,313         | 3.2        | 4.6        | 2.3          | 9.4                         | 2,912         |
| Uttar Pradesh         | 2.1        | 3.0        | 0.2          | 5.5                         | 2,395         | 3.1         | 4.8        | 1.1          | 9.2                         | 2,167         | 2.6        | 3.9        | 0.6          | 7.4                         | 4,562         |
| <b>East</b>           |            |            |              |                             |               |             |            |              |                             |               |            |            |              |                             |               |
| Bihar                 | 3.6        | 6.5        | 1.0          | 10.3                        | 1,709         | 4.6         | 7.0        | 1.2          | 12.0                        | 1,807         | 4.1        | 6.8        | 1.1          | 11.2                        | 3,516         |
| Jharkhand             | 2.1        | 1.9        | [0.1]        | 5.5                         | 1,294         | 3.7         | 2.2        | 0.9          | 8.0                         | 1,168         | 2.9        | 2.1        | 0.5          | 6.7                         | 2,462         |
| Odisha                | 10.2       | 1.6        | -            | 10.8                        | 1,676         | 16.7        | 1.8        | 0.3          | 17.4                        | 1,235         | 13.1       | 1.7        | 0.1          | 13.7                        | 2,911         |
| West Bengal           | 12.1       | 15.9       | 1.3          | 23.4                        | 2,384         | 16.9        | 23.4       | 2.4          | 31.6                        | 1,540         | 14.1       | 19.0       | 1.8          | 26.7                        | 3,924         |
| <b>Northeast</b>      |            |            |              |                             |               |             |            |              |                             |               |            |            |              |                             |               |
| Arunachal Pradesh     | 3.0        | [0.2]      | [0.3]        | 4.3                         | 897           | 9.6         | [1.8]      | [3.2]        | 13.0                        | 318           | 4.6        | 0.6        | 1.0          | 6.5                         | 1,215         |
| Assam                 | 2.2        | 0.9        | -            | 3.5                         | 1,548         | 3.0         | 1.2        | -            | 4.7                         | 814           | 2.5        | 1.0        | -            | 3.9                         | 2,362         |
| Manipur               | 1.0        | -          | -            | 1.4                         | 761           | 2.8         | [0.1]      | -            | 4.6                         | 605           | 1.8        | -          | -            | 2.9                         | 1,366         |
| Meghalaya             | 1.4        | 0.4        | -            | 1.4                         | 556           | 3.7         | 0.9        | -            | 3.7                         | 411           | 2.3        | [0.6]      | -            | 2.3                         | 967           |
| Mizoram               | 3.2        | 1.0        | -            | 4.3                         | 714           | 5.8         | 3.4        | [0.1]        | 8.8                         | 531           | 4.4        | 2.1        | [0.1]        | 6.4                         | 1,245         |
| Nagaland              | [0.7]      | [0.5]      | -            | 0.7                         | 708           | [2.9]       | [0.7]      | -            | 3.2                         | 604           | 1.7        | [0.6]      | -            | 1.9                         | 1,312         |
| Tripura               | 4.1        | 5.6        | [0.5]        | 9.2                         | 732           | 4.1         | 7.2        | 1.3          | 10.5                        | 460           | 4.1        | 6.2        | 0.8          | 9.7                         | 1,192         |
| <b>West</b>           |            |            |              |                             |               |             |            |              |                             |               |            |            |              |                             |               |
| Dadra & Nagar Haveli  | 8.2        | 1.3        | -            | 12.0                        | 635           | 16.1        | 2.0        | [1.2]        | 24.3                        | 450           | 11.3       | 1.6        | [0.5]        | 16.8                        | 1,085         |
| Daman & Diu           | 10.1       | 3.7        | [1.0]        | 19.5                        | 557           | 13.7        | 6.6        | [0.4]        | 29.7                        | 429           | 11.8       | 5.0        | 0.7          | 24.3                        | 986           |
| Goa                   | 8.1        | 1.5        | [0.2]        | 9.2                         | 788           | 14.1        | 2.1        | [0.2]        | 15.9                        | 634           | 10.8       | 1.8        | [0.2]        | 12.2                        | 1,422         |
| Gujarat               | 4.2        | 3.8        | 0.7          | 10.8                        | 1,344         | 8.8         | 6.7        | 1.3          | 20.4                        | 984           | 6.3        | 5.1        | 0.9          | 15.1                        | 2,328         |
| Maharashtra           | 8.5        | 7.1        | 0.3          | 13.6                        | 2,176         | 15.0        | 14.8       | 0.8          | 26.2                        | 1,786         | 11.7       | 10.9       | 0.5          | 19.8                        | 3,962         |

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| State/Union Territory     | Age 45-59* |            |              |                                         |        | Age ≥ 60  |            |              |                                         |        | Total     |            |              |                                         |        |
|---------------------------|------------|------------|--------------|-----------------------------------------|--------|-----------|------------|--------------|-----------------------------------------|--------|-----------|------------|--------------|-----------------------------------------|--------|
|                           | Arthritis  | Rheumatism | Osteoporosis | Any bone/<br>joint disease <sup>1</sup> | Number | Arthritis | Rheumatism | Osteoporosis | Any bone/<br>joint disease <sup>1</sup> | Number | Arthritis | Rheumatism | Osteoporosis | Any bone/<br>joint disease <sup>1</sup> | Number |
| <b>South</b>              |            |            |              |                                         |        |           |            |              |                                         |        |           |            |              |                                         |        |
| Andaman & Nicobar Islands | 7.2        | 5.0        | [0.7]        | 13.7                                    | 721    | 15.0      | 8.8        | [0.8]        | 23.7                                    | 521    | 10.4      | 6.6        | 0.8          | 17.8                                    | 1,242  |
| Andhra Pradesh            | 8.9        | 5.1        | 0.5          | 14.3                                    | 1,569  | 14.0      | 7.4        | 1.3          | 22.4                                    | 1,100  | 11.0      | 6.1        | 0.8          | 17.7                                    | 2,669  |
| Karnataka                 | 9.5        | 1.0        | 0.2          | 10.8                                    | 1,411  | 18.6      | 3.7        | 1.3          | 24.5                                    | 1,002  | 13.1      | 2.1        | 0.6          | 16.2                                    | 2,413  |
| Kerala                    | 12.5       | 3.4        | 2.5          | 16.9                                    | 1,277  | 19.1      | 8.6        | 4.3          | 28.2                                    | 1,206  | 15.9      | 6.1        | 3.4          | 22.8                                    | 2,483  |
| Lakshadweep               | 6.3        | 1.1        | 1.1          | 8.2                                     | 637    | 12.0      | 1.2        | 1.1          | 16.0                                    | 500    | 9.0       | 1.1        | 1.1          | 11.9                                    | 1,137  |
| Puducherry                | 11.7       | 0.8        | [0.1]        | 15.3                                    | 787    | 15.7      | 2.6        | 0.8          | 22.3                                    | 638    | 13.6      | 1.7        | 0.5          | 18.6                                    | 1,425  |
| Tamil Nadu                | 11.8       | 0.4        | [0.5]        | 15.4                                    | 1,995  | 17.9      | 0.5        | 0.9          | 25.2                                    | 1,530  | 14.6      | 0.5        | 0.7          | 19.9                                    | 3,525  |
| Telangana                 | 9.2        | 8.6        | 0.6          | 17.9                                    | 1,408  | 20.1      | 11.4       | 1.3          | 32.7                                    | 1,051  | 14.0      | 9.8        | 0.9          | 24.5                                    | 2,459  |

## Notes

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

<sup>1</sup>Bone /joint diseases include arthritis, rheumatism and osteoporosis (any one or more).

### 7.2.9 Cancer

Cancer is defined as any new and abnormal growth, specifically one in which cell multiplication is uncontrolled and progressive. In the LASI, respondents were asked ‘Has any health professional ever told you that you had diagnosed cancer?’ If the respondent answered yes, then a series of questions were asked about ‘who diagnosed’, ‘when was it diagnosed’ and ‘which organ is affected by cancer’. Treatment information for cancer included type of treatment such as chemotherapy, surgery, radiation, medication, and palliative treatment in the past 2 years prior to the survey.

Table 7.13 presents the prevalence of cancer in India by background characteristics. Overall, the self-reported prevalence of cancer in India is 0.6% in older adults age 45 and above, 0.7% among elderly age 60 and above, and 0.5% among older adults age 45-59. Among elderly age 60 and above, the self-reported prevalence of diagnosed cancer is higher among women (0.8%) than among men (0.6%), in urban areas (1.1%) than in rural areas (0.5%), among widowed (0.9%) than currently married (0.6%), and those in the richest quintile (1.4%) than those in the poorest quintile (0.2%).

Table 7.14 presents the cross-state variations in the prevalence of cancer. The self-reported prevalence of diagnosed cancer is the highest in Himachal Pradesh (2.2%) followed by that in Kerala (1.6%), Uttarakhand (1.3%), and Tripura (1.2%). In Delhi, Manipur, Mizoram, Goa, Karnataka, and Telangana, the self-reported prevalence of cancer is almost twice higher among elderly age 60 and above compared to older adults age 45-59. On the other hand, cancer is prevalent in more than 1% of older adults age 45-59 in Himachal Pradesh (1.6%), Tripura (1.6%), Kerala (1.3%), Uttarakhand (1.2%), Andaman & Nicobar (1.2%), and Arunachal Pradesh (1.1%).



## Key findings: chronic health conditions

- Overall, 28% of older adults age 45 and above in India reported that they have been diagnosed with cardiovascular diseases (CVDs). A third (35%) of elderly age 60 and above in India are diagnosed with CVDs. More than a half of elderly age 60 and above in Goa (60%), Kerala (57%), Chandigarh (55%), Andaman & Nicobar (51%), and Jammu and Kashmir (51%) reported that they have been diagnosed with CVDs.
- In India, 14% of elderly age 60 compared to 9% older adults age 45-59 reported that they have been diagnosed with diabetes mellitus. Diabetes mellitus is more prevalent among elderly men than women, currently married, more educated and elderly belonging to richest wealth quintile. Among elderly age 60 and above, diabetes mellitus is more prevalent in the demographically advanced states/UTs of Kerala (35%), Puducherry (28%), Lakshadweep (28%), Goa (27%), Delhi (26%), Tamil Nadu (26%), and Chandigarh (25%).
- Overall in India, among the elderly age 60 and above, the self-reported prevalence of diagnosed asthma is 5.9%, chronic obstructive pulmonary disease (COPD) 2.8% and bronchitis 1.6%. Eight percent of elderly age 60 and above reported any chronic lung diseases. Any chronic lung disease is more prevalent in the states/UTs of Rajasthan (15%), Puducherry (13%), Kerala (12%), West Bengal (11%), and Karnataka (10%).
- Overall, the self-reported prevalence of diagnosed any neurological/psychiatric problems among the elderly age 60 and above in India is 2.6% and that of depression is 0.8%. Elderly living with others (1.3%) and divorced/deserted/separated (1%) are more likely to be diagnosed with depression. The prevalence of neurological or psychiatric problems among the elderly is more than 5% in the states/UTs of West Bengal (8.1%), Telangana (7%), Puducherry (6.9%), and Jammu & Kashmir (5.3%).
- One in five (19%) elderly age 60 and above reported chronic bone/ joint diseases in which arthritis (11%) is a major contributor. Around a third of elderly reported bone/joint diseases in the states of Telangana (33%) and West Bengal (32%). In India, 0.7% of elderly age 60 and above have been diagnosed with cancer, and the prevalence of cancer is higher in the states of Himachal Pradesh (2.9%), Kerala (1.8%), Gujarat (1.5%), Uttarakhand (1.4%), and Mizoram (1.4%).
- CVDs, diabetes mellitus and respiratory diseases contribute to a major share of chronic health conditions among older adults as well as elderly age 60 and above. The prevalence of heart disease, stroke, diabetes mellitus, chronic lung disease and neurological problems are higher among elderly men; whereas, elderly women are more likely to be diagnosed with hypertension, anaemia, bronchitis, depression, Alzheimer's diseases and dementia, any bone/ joint disease and cancer.

**Table 7.13 Self-reported prevalence (%) of diagnosed cancer or malignant tumour among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Self-reported prevalence of diagnosed cancer or malignant tumour |               |            |               |            |               |
|------------------------------------------|------------------------------------------------------------------|---------------|------------|---------------|------------|---------------|
|                                          | Age 45-59*                                                       | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>Place of residence</b>                |                                                                  |               |            |               |            |               |
| Rural                                    | 0.5                                                              | 25,753        | 0.5        | 20,688        | 0.5        | 46,441        |
| Urban                                    | 0.6                                                              | 14,926        | 1.1        | 10,694        | 0.8        | 25,620        |
| <b>Sex</b>                               |                                                                  |               |            |               |            |               |
| Male                                     | 0.4                                                              | 15,427        | 0.6        | 15,039        | 0.5        | 30,466        |
| Female                                   | 0.7                                                              | 25,252        | 0.8        | 16,343        | 0.7        | 41,595        |
| <b>Marital status</b>                    |                                                                  |               |            |               |            |               |
| Currently married                        | 0.5                                                              | 35,383        | 0.6        | 19,868        | 0.6        | 55,251        |
| Widowed                                  | 1.0                                                              | 3,864         | 0.9        | 10,694        | 0.9        | 14,558        |
| Divorced/Separated/Deserted/Others       | [0.3]                                                            | 1,432         | -          | 820           | 0.2        | 2,252         |
| <b>Living arrangement</b>                |                                                                  |               |            |               |            |               |
| Living alone                             | 0.5                                                              | 689           | 0.1        | 1,618         | 0.2        | 2,307         |
| Living with spouse and/or others         | 0.8                                                              | 4,535         | 0.5        | 6,167         | 0.6        | 10,702        |
| Living with spouse and children          | 0.5                                                              | 30,194        | 0.7        | 13,461        | 0.5        | 43,655        |
| Living with children and others          | 0.9                                                              | 4,075         | 0.9        | 8,417         | 0.9        | 12,492        |
| Living with others only                  | 0.7                                                              | 1,186         | 1.0        | 1,719         | 0.9        | 2,905         |
| <b>Religion</b>                          |                                                                  |               |            |               |            |               |
| Hindu                                    | 0.5                                                              | 29,854        | 0.7        | 22,982        | 0.6        | 52,836        |
| Muslim                                   | 0.7                                                              | 4,926         | 0.7        | 3,720         | 0.7        | 8,646         |
| Christian                                | 0.9                                                              | 4,058         | 0.6        | 3,138         | 0.8        | 7,196         |
| Others                                   | 0.5                                                              | 1,841         | 1.2        | 1,542         | 0.8        | 3,383         |
| <b>Caste/tribe</b>                       |                                                                  |               |            |               |            |               |
| Scheduled tribe                          | 0.3                                                              | 7,327         | 0.4        | 5,160         | 0.4        | 12,487        |
| Scheduled caste                          | 0.6                                                              | 6,887         | 0.5        | 5,130         | 0.6        | 12,017        |
| Other backward class                     | 0.5                                                              | 15,258        | 0.5        | 11,852        | 0.5        | 27,110        |
| None of the above                        | 0.7                                                              | 11,207        | 1.3        | 9,240         | 1.0        | 20,447        |
| <b>Education</b>                         |                                                                  |               |            |               |            |               |
| No schooling                             | 0.5                                                              | 16,286        | 0.5        | 16,858        | 0.5        | 33,144        |
| Less than 5 years complete               | 0.8                                                              | 4,263         | 1.3        | 3,774         | 1.1        | 8,037         |
| 5-9 years complete                       | 0.5                                                              | 10,872        | 0.8        | 5,997         | 0.6        | 16,869        |
| 10 or more years complete                | 0.5                                                              | 9,258         | 0.9        | 4,753         | 0.7        | 14,011        |
| <b>Work status</b>                       |                                                                  |               |            |               |            |               |
| Currently working                        | 0.4                                                              | 23,622        | 0.4        | 9,283         | 0.4        | 32,905        |
| Worked in past but currently not working | 0.8                                                              | 4,565         | 0.8        | 13,329        | 0.8        | 17,894        |
| Never worked                             | 0.6                                                              | 12,492        | 0.9        | 8,770         | 0.8        | 21,262        |
| <b>MPCE quintile</b>                     |                                                                  |               |            |               |            |               |
| Poorest                                  | 0.5                                                              | 7,650         | 0.2        | 6,463         | 0.4        | 14,113        |
| Poorer                                   | 0.5                                                              | 8,033         | 0.4        | 6,459         | 0.5        | 14,492        |
| Middle                                   | 0.4                                                              | 8,104         | 0.5        | 6,399         | 0.5        | 14,503        |
| Richer                                   | 0.7                                                              | 8,497         | 1.1        | 6,160         | 0.9        | 14,657        |
| Richest                                  | 0.7                                                              | 8,395         | 1.4        | 5,901         | 1.0        | 14,296        |
| <b>Total</b>                             | <b>0.5</b>                                                       | <b>40,679</b> | <b>0.7</b> | <b>31,382</b> | <b>0.6</b> | <b>72,061</b> |

Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

**Table 7.14 Self-reported prevalence (%) of diagnosed cancer or malignant tumour among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Self-reported prevalence of diagnosed cancer or malignant tumour |               |            |               |            |               |
|---------------------------|------------------------------------------------------------------|---------------|------------|---------------|------------|---------------|
|                           | Age 45-59*                                                       | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>India</b>              | <b>0.5</b>                                                       | <b>40,679</b> | <b>0.7</b> | <b>31,382</b> | <b>0.6</b> | <b>72,061</b> |
| <b>North</b>              |                                                                  |               |            |               |            |               |
| Chandigarh                | 0.7                                                              | 625           | [0.9]      | 389           | 0.7        | 1,014         |
| Delhi                     | [0.1]                                                            | 822           | [0.7]      | 495           | [0.3]      | 1,317         |
| Haryana                   | 0.7                                                              | 1,048         | 0.9        | 847           | 0.8        | 1,895         |
| Himachal Pradesh          | 1.6                                                              | 765           | 2.9        | 618           | 2.2        | 1,383         |
| Jammu & Kashmir           | [0.2]                                                            | 881           | [0.3]      | 730           | 0.2        | 1,611         |
| Punjab                    | 0.6                                                              | 1,112         | 0.7        | 1,004         | 0.6        | 2,116         |
| Rajasthan                 | [0.2]                                                            | 1,161         | 0.6        | 1,077         | 0.4        | 2,238         |
| Uttarakhand               | 1.2                                                              | 715           | 1.4        | 641           | 1.3        | 1,356         |
| <b>Central</b>            |                                                                  |               |            |               |            |               |
| Chhattisgarh              | [0.3]                                                            | 1,275         | [0.5]      | 779           | 0.4        | 2,054         |
| Madhya Pradesh            | 0.5                                                              | 1,599         | [0.2]      | 1,313         | 0.4        | 2,912         |
| Uttar Pradesh             | 0.5                                                              | 2,393         | 0.3        | 2,166         | 0.4        | 4,559         |
| <b>East</b>               |                                                                  |               |            |               |            |               |
| Bihar                     | [0.2]                                                            | 1,709         | 0.3        | 1,807         | 0.2        | 3,516         |
| Jharkhand                 | 1.0                                                              | 1,294         | 0.7        | 1,168         | 0.8        | 2,462         |
| Odisha                    | 0.5                                                              | 1,676         | 0.4        | 1,235         | 0.5        | 2,911         |
| West Bengal               | 1.0                                                              | 2,383         | 1.2        | 1,540         | 1.1        | 3,923         |
| <b>Northeast</b>          |                                                                  |               |            |               |            |               |
| Arunachal Pradesh         | 1.1                                                              | 897           | [0.5]      | 318           | 1.0        | 1,215         |
| Assam                     | 0.3                                                              | 1,548         | [0.4]      | 813           | 0.3        | 2,361         |
| Manipur                   | [0.4]                                                            | 761           | 1.1        | 605           | 0.7        | 1,366         |
| Meghalaya                 | [0.2]                                                            | 556           | [0.2]      | 411           | [0.2]      | 967           |
| Mizoram                   | 0.6                                                              | 714           | 1.4        | 531           | 0.9        | 1,245         |
| Nagaland                  | [0.1]                                                            | 708           | [0.1]      | 604           | [0.1]      | 1,312         |
| Tripura                   | 1.6                                                              | 732           | 0.6        | 460           | 1.2        | 1,192         |
| <b>West</b>               |                                                                  |               |            |               |            |               |
| Dadra & Nagar Haveli      | [0.2]                                                            | 635           | [0.2]      | 450           | [0.2]      | 1,085         |
| Daman & Diu               | [0.2]                                                            | 557           | [0.7]      | 429           | 0.4        | 986           |
| Goa                       | [0.4]                                                            | 788           | [0.9]      | 634           | 0.6        | 1,422         |
| Gujarat                   | 0.8                                                              | 1,344         | 1.5        | 984           | 1.1        | 2,328         |
| Maharashtra               | 0.7                                                              | 2,176         | 0.8        | 1,786         | 0.8        | 3,962         |
| <b>South</b>              |                                                                  |               |            |               |            |               |
| Andaman & Nicobar Islands | 1.2                                                              | 721           | 1.1        | 521           | 1.1        | 1,242         |
| Andhra Pradesh            | 0.4                                                              | 1,569         | 0.3        | 1,100         | 0.4        | 2,669         |
| Karnataka                 | 0.3                                                              | 1,411         | 1.2        | 1,002         | 0.7        | 2,413         |
| Kerala                    | 1.3                                                              | 1,277         | 1.8        | 1,206         | 1.6        | 2,483         |
| Lakshadweep               | [0.5]                                                            | 637           | [0.6]      | 500           | 0.5        | 1,137         |
| Puducherry                | [0.3]                                                            | 787           | [0.4]      | 638           | 0.3        | 1,425         |
| Tamil Nadu                | 0.6                                                              | 1,995         | 0.1        | 1,530         | 0.4        | 3,525         |
| Telangana                 | [0.2]                                                            | 1,408         | 0.6        | 1,051         | 0.4        | 2,459         |

Note

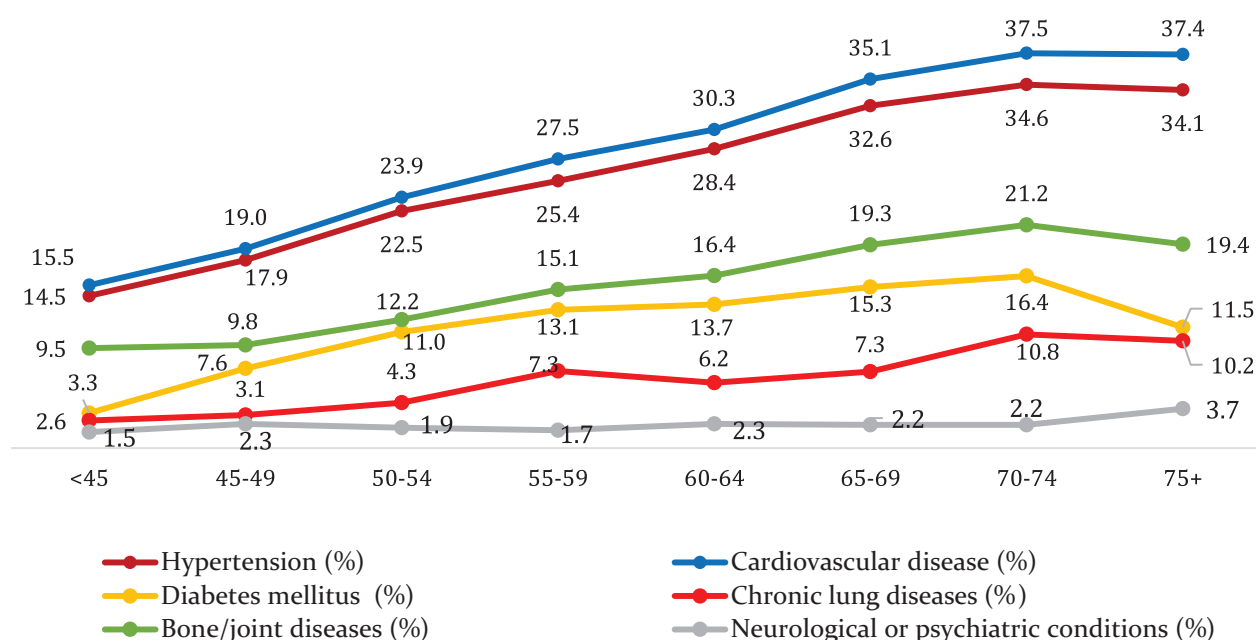
\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

## Age patterns in the self-reported prevalence of chronic health conditions

Along with factors such as urbanisation, changing dietary patterns, and health risk factors, age is one of the most important predictors of chronic diseases. Increasing age is associated with higher risk of chronic health conditions. However, the onset of chronic diseases differs according to demographic and epidemiological transition as well as behavioural and health risk profile of the population of countries.

Figure 7.10 shows the age pattern in self-reported diagnosed chronic health conditions in India. The prevalence of chronic health conditions increases markedly with age. The age-associated increase in the prevalence of chronic health conditions is more profound for cardiovascular and lung diseases in India. The prevalence of CVD shows a two-fold increase from older adults age 45-49 (19%) to elderly age 70-74 (38%). The prevalence of diabetes shows a two-fold increase from older adults age 45-49 (7.6%) to elderly age 70-74 (16.4%). The prevalence of hypertension also shows a two-fold increase from older adults age 45-49 (7.6%) to 16% among elderly age 70 and above.

**Figure 7.10 Self-reported diagnosed major chronic health conditions among older adults by age, India, LASI Wave 1, 2017-18**



### 7.2.10 Treatment rates

In the LASI, survey participants who answered yes for a given diagnosed chronic disease/condition were asked about current treatment and specific treatment/management for each disease/condition. These include salt and diet restrictions in hypertension; special diets and injectable insulin in diabetes; type of treatment including chemotherapy, surgery, radiation, and palliative care in cancer; physical/occupational therapy in stroke; and tranquilizer/antidepressants in neurological or psychiatric conditions. Treatment rates for chronic diseases are calculated for those respondents who reported that they were diagnosed with a disease or condition.

Table 7.15 presents the treatment rates for hypertension, chronic heart diseases, stroke, and diabetes mellitus by background characteristics. Overall, more than three quarters of older adults age 45 and above are currently taking treatment for their diagnosed diseases of hypertension (72%), chronic heart diseases (73%), and diabetes mellitus (82%), whereas only 58% of older adults diagnosed with stroke are on treatment. Treatment rates are higher among elderly age 60 and above than older adults age 45-59. The treatment rates for chronic heart diseases and stroke are higher among older adult men compared to women, while the treatment rate for diabetes mellitus is higher among older adult women than men. Among older adults age 45 and above, the treatment rate for hypertension does not vary by sex. Among the elderly age 60 and above, treatment rates for chronic diseases (i.e., hypertension, chronic heart diseases, stroke and diabetes mellitus) are higher in urban areas than in rural areas; in those with 10 or more years of schooling than those with no schooling; and those in the richer/richest MPCE quintile than those in poorest MPCE quintile. With respect to treatment rate for stroke according to work status, it is very low among older adults age 45-59 years who never worked (36%) and is also lower among currently working elderly age 60 and above (42%).

Cross-state variations in treatment rates for hypertension, chronic heart diseases, stroke, and diabetes mellitus are presented in Table 7.16. The treatment rates for hypertension is higher in most of the South Indian and West Indian states where more than 80% of those diagnosed received treatment. In contrast, the treatment rate for hypertension is less than 50% in Mizoram (49%), Bihar (48%), and Arunachal Pradesh (30%). More than 90% of elderly age 60 and above are currently on treatment for hypertension in Goa (97%), Andhra Pradesh (92%), Puducherry (92%), and Kerala (91%). The treatment rate for chronic heart diseases among older adults age 45 and above ranges from 92% in Lakshadweep to 43% in Tripura. The treatment rate for stroke is comparatively lower in the eastern and northeast Indian states/UTs. The proportion of older adults age 45 and above who were diagnosed with diabetes and currently receiving treatment for diabetes mellitus ranges from 70% to 90% across India, except for Gujarat (68%), Assam (63%), and Arunachal Pradesh (44%).

Table 7.17 presents the treatment rates for chronic lung diseases, bone diseases, neurological and psychiatric diseases, and cancer by background characteristics. Overall, treatment seeking is lower for neurological and psychiatric diseases conditions (47%) in India. Among older adults age 45 and above, the treatment rate is 70% for chronic lung disease, 76% for cancer, and 54% for bone diseases. The treatment rates for chronic lung diseases, bone diseases, and cancer are higher in elderly age 60 and above than that in older adults age 45-59. In contrast, the treatment rate for neurological or psychiatric diseases is lower among elderly age 60 and above (41%) than in older adults age 45-59 (53%). Among older adults age 45-59, the treatment rate for chronic lung diseases, neurological & psychiatric diseases and cancer is higher among those living in urban areas than those living in rural areas. Among elderly age 60 and above, the treatment rate for cancer is higher among women than among men, whereas the treatment rate for neurological and psychiatric diseases is higher among men than among women.

Table 7.18 presents the cross-state variations in treatment rates for chronic lung disease, bone disease, neurological and psychiatric diseases, and cancer. The treatment rate for chronic lung diseases ranges from more than 85% in Delhi (90%) to less than 25% in Arunachal Pradesh (24%) and Mizoram (18%). More than three quarters of elderly age 60 and above are currently receiving treatment for bone diseases in Delhi (78%), Assam (77%), and Jammu & Kashmir (76%). The treatment rate for neurological and psychiatric conditions among elderly age 60 and above are currently taking treatment in West Bengal (29%), Mizoram (25%) Andaman & Nicobar (21%), and Nagaland (3%). Overall, across the states/UTs, more than half of older adults age 45 and above are currently taking treatment for cancer except in Assam where the treatment rate is only 25%.

### Key findings: age pattern of chronic health conditions and treatment rates

- Age-associated rise in the prevalence of chronic health conditions is steady and consistent and more pronounced for cardiovascular and lung diseases. Age is also associated with an increased risk of experiencing more than one chronic health conditions at the same time.
- Overall in India, around three quarters of elderly age 60 and above who were diagnosed with chronic conditions have been treated for hypertension (77%), chronic heart diseases (74%), diabetes mellitus (83%), chronic lung diseases (72%) and cancer (75%); more than half of elderly have been treated for stroke (58%) and bone/joint diseases (56%); whereas, the treatment rate for neurological & psychiatric diseases among the elderly is the lowest (41%).
- More than 90% of the elderly age 60 and above who reported that they have been diagnosed with hypertension are currently on treatment for hypertension in the states/UTs of Goa (97%), Andhra Pradesh (92%), Puducherry (92%) and Kerala (91%). The treatment rate for hypertension is lower in Arunachal Pradesh (28%), Bihar (54%), Mizoram (54%), Uttarakhand (60%), Haryana (60%), Nagaland (61%), Uttar Pradesh (63%), Rajasthan (65%), Himachal Pradesh (67%), and Jharkhand (69%). The proportion of the elderly age 60 and above diagnosed with diabetes mellitus who are currently receiving treatment for diabetes mellitus ranges from 70-90% across states of India, except for Gujarat (69%), Assam (67%), Uttar Pradesh (67%), Mizoram (64%) and Arunachal Pradesh (36%).
- The treatment rate for all chronic health conditions is higher among elderly in urban areas than those in rural, those with 10 or more years of schooling than those with no schooling and those in the richest than the poorest MPCE quintile.

**Table 7.15 Treatment rate<sup>1</sup> for hypertension, chronic heart diseases, stroke and diabetes mellitus among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Hypertension |          |       | Chronic heart diseases |            |          | Stroke |        |            | Diabetes mellitus |       |        |
|------------------------------------------|--------------|----------|-------|------------------------|------------|----------|--------|--------|------------|-------------------|-------|--------|
|                                          | Age 45-59*   | Age ≥ 60 | Total | Number                 | Age 45-59* | Age ≥ 60 | Total  | Number | Age 45-59* | Age ≥ 60          | Total | Number |
| <b>Place of residence</b>                |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Rural                                    | 56.5         | 70.7     | 64.7  | 10,919                 | 60.5       | 66.6     | 64.4   | 1,207  | 45.0       | 51.8              | 49.9  | 712    |
| Urban                                    | 74.1         | 86.7     | 81.1  | 8,958                  | 81.4       | 82.2     | 82.0   | 1,234  | 69.7       | 71.9              | 71.1  | 508    |
| <b>Sex</b>                               |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Male                                     | 64.8         | 75.8     | 71.6  | 7,535                  | 69.9       | 74.8     | 73.4   | 1,280  | 63.6       | 59.5              | 60.9  | 720    |
| Female                                   | 64.1         | 78.4     | 71.8  | 12,342                 | 68.9       | 73.6     | 71.8   | 1,161  | 41.2       | 57.1              | 52.6  | 500    |
| <b>Marital status</b>                    |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Currently married                        | 63.7         | 76.3     | 69.6  | 14,043                 | 67.2       | 73.2     | 70.9   | 1,832  | 54.5       | 59.0              | 57.2  | 876    |
| Widowed                                  | 70.6         | 79.1     | 77.5  | 5,256                  | 81.9       | 76.0     | 77.2   | 557    | 56.5       | 56.7              | 56.7  | 315    |
| Divorced/Separated/Deserted/ Others      | 56.9         | 71.8     | 63.7  | 578                    | 51.8       | 83.9     | 69.4   | 52     | 81.2       | 86.0              | 83.9  | 29     |
| <b>Living arrangement</b>                |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Living alone                             | 69.8         | 74.3     | 73.5  | 728                    | 51.7       | 85.5     | 79.1   | 71     | [100]      | 42.5              | 45.0  | 32     |
| Living with spouse and/or others         | 69.7         | 75.7     | 73.8  | 3,110                  | 62.0       | 64.3     | 63.9   | 444    | 50.7       | 56.3              | 55.1  | 197    |
| Living with spouse and children          | 62.8         | 76.8     | 68.5  | 10,697                 | 68.3       | 77.4     | 73.3   | 1,370  | 55.5       | 60.3              | 58.1  | 669    |
| Living with children and others          | 68.2         | 80.5     | 77.8  | 4,454                  | 83.5       | 76.6     | 78.1   | 467    | 51.8       | 62.7              | 61.7  | 254    |
| Living with others only                  | 61.5         | 72.1     | 69.3  | 888                    | 48.5       | 66.8     | 62.8   | 89     | 72.0       | 44.4              | 47.4  | 68     |
| <b>Religion</b>                          |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Hindu                                    | 61.8         | 76.9     | 70.6  | 13,921                 | 69.4       | 73.2     | 72.0   | 1,681  | 56.7       | 55.5              | 55.9  | 853    |
| Muslim                                   | 73.4         | 78.4     | 75.8  | 2,931                  | 64.7       | 81.0     | 74.9   | 490    | 38.7       | 73.0              | 60.9  | 186    |
| Christian                                | 71.4         | 84.5     | 79.6  | 1,801                  | 86.3       | 79.8     | 82.8   | 161    | 53.3       | 61.8              | 61.1  | 106    |
| Others                                   | 67.1         | 78.2     | 73.6  | 1,224                  | 55.7       | 63.6     | 61.9   | 109    | 88.6       | 64.9              | 71.0  | 75     |
| <b>Caste/tribe</b>                       |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Scheduled tribe                          | 51.3         | 67.5     | 60.0  | 2,424                  | 48.5       | 65.1     | 57.6   | 170    | 50.0       | 51.9              | 51.3  | 164    |
| Scheduled caste                          | 60.5         | 69.7     | 65.4  | 3,073                  | 78.6       | 61.1     | 68.8   | 346    | 45.7       | 45.9              | 45.8  | 217    |
| Other backward class                     | 67.2         | 78.1     | 73.3  | 7,436                  | 67.3       | 77.1     | 74.3   | 911    | 63.8       | 61.4              | 62.1  | 425    |
| None of the above                        | 64.5         | 81.4     | 74.6  | 6,944                  | 68.0       | 76.0     | 73.3   | 1,014  | 51.7       | 63.7              | 60.2  | 414    |
| <b>Education</b>                         |              |          |       |                        |            |          |        |        |            |                   |       |        |
| No schooling                             | 60.2         | 71.4     | 66.9  | 8,343                  | 70.1       | 68.2     | 68.9   | 823    | 55.1       | 52.1              | 52.9  | 514    |
| Less than 5 years complete               | 64.4         | 78.8     | 73.6  | 2,261                  | 55.7       | 76.5     | 69.9   | 289    | 35.7       | 63.2              | 56.1  | 160    |
| 5-9 years complete                       | 62.8         | 82.4     | 73.1  | 4,811                  | 66.4       | 68.6     | 67.7   | 682    | 62.8       | 62.2              | 62.4  | 285    |
| 10 or more years complete                | 72.9         | 85.3     | 79.3  | 4,462                  | 78.6       | 84.0     | 82.6   | 647    | 55.2       | 68.8              | 64.3  | 261    |
| <b>Work status</b>                       |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Currently working                        | 61.5         | 67.4     | 63.6  | 6,349                  | 64.2       | 66.5     | 65.2   | 659    | 54.4       | 41.6              | 48.0  | 257    |
| Worked in past but currently not working | 70.0         | 78.4     | 76.4  | 6,402                  | 76.9       | 74.8     | 75.2   | 1,018  | 68.1       | 60.1              | 61.9  | 666    |
| Never worked                             | 65.2         | 81.6     | 74.7  | 7,126                  | 70.2       | 77.4     | 75.2   | 764    | 35.6       | 64.6              | 54.3  | 297    |

Continued



Continued

| Background characteristics | Hypertension |          |       | Chronic heart diseases |            |          | Stroke |        |            | Diabetes mellitus |       |        |      |      |      |       |
|----------------------------|--------------|----------|-------|------------------------|------------|----------|--------|--------|------------|-------------------|-------|--------|------|------|------|-------|
|                            | Age 45-59*   | Age ≥ 60 | Total | Number                 | Age 45-59* | Age ≥ 60 | Total  | Number | Age 45-59* | Age ≥ 60          | Total | Number |      |      |      |       |
| IMPE quintile              |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      |       |
| Poorest                    | 52.0         | 69.6     | 62.9  | 2,956                  | 61.8       | 66.3     | 64.8   | 331    | 50.4       | 37.1              | 40.7  | 183    | 79.4 | 77.4 | 78.2 | 1,181 |
| Poorer                     | 57.5         | 75.2     | 67.6  | 3,551                  | 68.9       | 75.0     | 72.4   | 372    | 39.4       | 56.6              | 51.7  | 228    | 74.1 | 79.0 | 76.9 | 1,419 |
| Middle                     | 64.4         | 75.7     | 70.8  | 4,006                  | 74.1       | 66.7     | 68.9   | 467    | 59.6       | 61.8              | 61.0  | 253    | 76.4 | 81.5 | 79.3 | 1,694 |
| Richer                     | 64.8         | 81.4     | 74.4  | 4,485                  | 59.9       | 68.8     | 65.8   | 548    | 60.4       | 66.0              | 64.2  | 252    | 80.9 | 87.0 | 84.6 | 2,012 |
| Richest                    | 75.4         | 82.9     | 79.3  | 4,879                  | 76.6       | 85.5     | 82.6   | 723    | 61.4       | 66.8              | 65.2  | 304    | 88.7 | 86.9 | 87.8 | 2,408 |
| Total                      | 64.3         | 77.4     | 71.7  | 19,877                 | 69.3       | 74.2     | 72.6   | 2,441  | 55.2       | 58.4              | 57.5  | 1,220  | 81.3 | 83.2 | 82.4 | 8,714 |

Notes

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

†Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem

**Table 7.16 Treatment rate<sup>1</sup> for hypertension, chronic heart diseases, stroke and diabetes mellitus among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Hypertension |          |       | Chronic heart diseases |            |          | Stroke |        |            | Diabetes mellitus |       |        |      |      |      |           |
|-----------------------|--------------|----------|-------|------------------------|------------|----------|--------|--------|------------|-------------------|-------|--------|------|------|------|-----------|
|                       | Age 45-59*   | Age ≥ 60 | Total | Number                 | Age 45-59* | Age ≥ 60 | Total  | Number | Age 45-59* | Age ≥ 60          | Total | Number |      |      |      |           |
| India                 | 64.3         | 77.4     | 71.7  | 19,877                 | 69.3       | 74.2     | 72.6   | 2,441  | 55.2       | 58.4              | 57.5  | 1,220  | 81.3 | 83.2 | 82.4 | 8,714     |
| North                 |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      |           |
| Chandigarh            | 72.4         | 86.3     | 79.5  | 397                    | 58.5       | 84.1     | 78.0   | 80     | 86.2       | 58.7              | 67.7  | 19     | 84.8 | 91.9 | 88.2 | 220       |
| Delhi                 | 50.6         | 79.8     | 65.4  | 430                    | 67.6       | 91.0     | 83.9   | 57     | [67.0]     | 91.0              | 88.7  | 12     | 89.3 | 89.7 | 89.6 | 230       |
| Haryana               | 47.6         | 59.6     | 53.9  | 709                    | 74.7       | 79.3     | 77.6   | 65     | [24.8]     | 54.2              | 46.2  | 13     | 84.0 | 85.9 | 85.1 | 156       |
| Himachal Pradesh      | 56.4         | 67.4     | 62.7  | 429                    | 55.6       | 81.4     | 74.5   | 66     | 93.7       | 47.0              | 63.2  | 27     | 71.0 | 75.2 | 73.6 | 161       |
| Jammu & Kashmir       | 82.5         | 86.5     | 84.9  | 615                    | 82.5       | 83.1     | 82.8   | 135    | 67.0       | 77.5              | 75.9  | 31     | 88.5 | 91.9 | 90.5 | 135       |
| Punjab                | 70.8         | 77.5     | 74.5  | 898                    | 74.8       | 84.1     | 81.5   | 91     | 76.1       | 54.0              | 61.6  | 46     | 88.5 | 90.6 | 89.8 | 319       |
| Rajasthan             | 50.5         | 65.2     | 59.0  | 596                    | 73.5       | 72.2     | 72.8   | 59     | 60.5       | 44.9              | 50.4  | 28     | 70.1 | 83.1 | 77.5 | 178       |
| Uttarakhand           | 54.5         | 60.2     | 57.5  | 365                    | 69.1       | 79.1     | 76.2   | 45     | [33.9]     | 59.1              | 49.0  | 13     | 67.9 | 74.2 | 71.4 | 126       |
| Central               |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      |           |
| Chhattisgarh          | 61.3         | 75.9     | 68.4  | 316                    | -          | 72.9     | 60.4   | 12     | 42.4       | 74.3              | 58.1  | 29     | 79.9 | 86.0 | 83.1 | 135       |
| Madhya Pradesh        | 53.7         | 72.0     | 63.5  | 585                    | 68.2       | 83.6     | 76.5   | 73     | 63.0       | 80.6              | 75.3  | 29     | 70.6 | 84.5 | 79.4 | 173       |
| Uttar Pradesh         | 49.1         | 62.6     | 56.1  | 946                    | 83.0       | 78.3     | 79.8   | 77     | 48.1       | 64.1              | 59.2  | 88     | 71.9 | 66.6 | 68.9 | 328       |
| East                  |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      |           |
| Bihar                 | 38.1         | 54.3     | 47.9  | 883                    | 57.1       | 60.3     | 59.6   | 137    | [26.4]     | 47.9              | 42.0  | 46     | 69.4 | 69.9 | 69.7 | 254       |
| Jharkhand             | 55.6         | 68.9     | 63.6  | 498                    | 73.0       | 69.7     | 70.9   | 48     |            | 30.8              | 30.8  | 13     | 74.5 | 77.3 | 76.3 | 207       |
| Odisha                | 57.8         | 72.5     | 66.8  | 581                    | 55.3       | 91.9     | 74.8   | 35     | [50.8]     | 59.4              | 57.6  | 35     | 70.9 | 77.9 | 74.9 | 229       |
| West Bengal           | 68.7         | 80.7     | 75.1  | 1,179                  | 70.1       | 56.7     | 62.2   | 222    | 38.9       | 49.3              | 46.2  | 149    | 81.5 | 77.0 | 79.3 | 487       |
| Northeast             |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      |           |
| Arunachal Pradesh     | 30.9         | 27.9     | 29.9  | 225                    | [92.4]     | -        | [76.7] | 4      | [44.2]     | [10.4]            | 32.4  | 11     | 48.4 | 35.9 | 44.3 | 57        |
| Assam                 | 52.5         | 74.2     | 63.2  | 664                    | 49.5       | 72.8     | 62.6   | 55     | 79.3       | 59.6              | 64.6  | 30     | 59.4 | 66.5 | 62.5 | 159       |
| Manipur               | 54.2         | 75.1     | 65.8  | 351                    | 58.1       | 80.2     | 72.6   | 34     | 54.1       | 45.7              | 48.2  | 31     | 75.7 | 76.7 | 76.2 | 129       |
| Meghalaya             | 71.4         | 82.0     | 77.5  | 237                    | [90.5]     | [44.4]   | 64.4   | 10     | [100]      | [100]             | 100   | 5      | 94.6 | 85.7 | 88.5 | 33        |
| Mizoram               | 39.7         | 54.4     | 48.5  | 291                    | 54.4       | 75.8     | 63.1   | 15     | [12.7]     | 44.1              | 32.9  | 17     | 82.8 | 63.8 | 70.9 | 96        |
| Nagaland              | 55.5         | 60.9     | 58.2  | 166                    | [16.7]     | [100]    | [49.9] | 6      | [94.5]     | 53.3              | 62.3  | 15     | 70.9 | 82.8 | 77.2 | 59        |
| Tripura               | 60.8         | 75.5     | 68.5  | 332                    | 40.2       | 44.5     | 42.5   | 35     | [68.4]     | 56.1              | 59.4  | 25     | 70.1 | 72.9 | 71.6 | 103       |
| West                  |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      |           |
| Dadra & Nagar Haveli  | 69.6         | 70.5     | 70.1  | 155                    | 86.4       | [96.4]   | 90.4   | 11     | [57.4]     | 29.2              | 51.6  | 9      | 72.3 | 88.2 | 79.5 | 88        |
| Daman & Diu           | 68.4         | 87.1     | 79.0  | 308                    | 74.1       | 79.6     | 77.8   | 27     | [55.3]     | 92.9              | 78.3  | 13     | 89.2 | 87.9 | 88.5 | 171       |
| Goa                   | 91.9         | 97.3     | 95.4  | 561                    | 76.4       | 93.2     | 90.5   | 53     | 75.3       | 83.1              | 81.9  | 37     | 92.1 | 94.3 | 93.3 | 316       |
| Gujarat               | 52.5         | 76.5     | 66.4  | 551                    | 60.3       | 61.2     | 60.9   | 76     | 47.1       | 43.7              | 45.0  | 43     | 66.2 | 69.0 | 68.0 | 261       |
| Maharashtra           | 76.8         | 89.9     | 85.5  | 1,113                  | 64.9       | 77.1     | 73.7   | 182    | 39.0       | 63.0              | 58.0  | 103    | 82.1 | 86.5 | 85.0 | 549       |
|                       |              |          |       |                        |            |          |        |        |            |                   |       |        |      |      |      | Continued |

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| State/Union Territory     | Hypertension |          |       | Chronic heart diseases |            |          | Stroke |        |            | Diabetes mellitus |       |        |
|---------------------------|--------------|----------|-------|------------------------|------------|----------|--------|--------|------------|-------------------|-------|--------|
|                           | Age 45-59*   | Age ≥ 60 | Total | Number                 | Age 45-59* | Age ≥ 60 | Total  | Number | Age 45-59* | Age ≥ 60          | Total | Number |
| <b>South</b>              |              |          |       |                        |            |          |        |        |            |                   |       |        |
| Andaman & Nicobar Islands | 70.0         | 83.5     | 77.0  | 468                    | [80.6]     | 49.5     | 55.9   | 29     | 60.1       | 70.0              | 65.2  | 22     |
| Andhra Pradesh            | 83.1         | 92.0     | 88.1  | 870                    | 65.3       | 69.4     | 67.5   | 94     | 91.9       | 76.9              | 81.4  | 45     |
| Karnataka                 | 83.5         | 88.2     | 86.0  | 538                    | 80.8       | 84.0     | 83.0   | 85     | 72.6       | 57.4              | 63.7  | 47     |
| Kerala                    | 70.4         | 91.0     | 84.5  | 969                    | 65.2       | 84.1     | 80.1   | 204    | 74.1       | 89.3              | 84.8  | 57     |
| Lakshadweep               | 73.7         | 80.3     | 77.5  | 424                    | 88.0       | 94.8     | 92.3   | 55     | 100        | 88.7              | 92.7  | 35     |
| Puducherry                | 82.2         | 91.6     | 88.1  | 490                    | 78.9       | 70.3     | 72.9   | 77     | 65.7       | 40.9              | 55.7  | 16     |
| Tamil Nadu                | 70.7         | 80.0     | 76.3  | 995                    | 70.7       | 78.6     | 75.7   | 136    | 74.4       | 49.6              | 59.8  | 45     |
| Telangana                 | 85.7         | 88.8     | 87.6  | 742                    | 77.0       | 73.9     | 74.9   | 51     | [43.9]     | 80.0              | 71.6  | 36     |

## Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-." indicates less number of cases/no cases.

<sup>1</sup>Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem

**Table 7.17 Treatment rate<sup>1</sup> for chronic lung diseases, bone/joint diseases, neurological & psychiatric diseases and cancer among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics          | Chronic lung diseases |          |       | Bone/joint diseases |            |          | Neurological & psychiatric diseases |        |            | Cancer   |       |        |
|-------------------------------------|-----------------------|----------|-------|---------------------|------------|----------|-------------------------------------|--------|------------|----------|-------|--------|
|                                     | Age 45-59*            | Age ≥ 60 | Total | Number              | Age 45-59* | Age ≥ 60 | Total                               | Number | Age 45-59* | Age ≥ 60 | Total | Number |
| <b>Place of residence</b>           |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| Rural                               | 62.5                  | 68.3     | 66.2  | 2,541               | 52.4       | 52.3     | 52.4                                | 6,313  | 50.7       | 36.4     | 42.4  | 949    |
| Urban                               | 77.4                  | 79.2     | 78.4  | 1,360               | 52.5       | 61.9     | 57.9                                | 3,882  | 55.5       | 54.3     | 55.0  | 620    |
| <b>Sex</b>                          |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| Male                                | 69.8                  | 71.4     | 70.8  | 1,896               | 41.2       | 52.0     | 48.3                                | 3,451  | 57.0       | 49.0     | 52.5  | 700    |
| Female                              | 66.7                  | 71.7     | 69.6  | 2,005               | 56.8       | 57.7     | 57.3                                | 6,744  | 49.7       | 35.0     | 42.1  | 869    |
| <b>Marital status</b>               |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| Currently married                   | 67.0                  | 71.1     | 69.1  | 2,768               | 51.2       | 55.7     | 53.3                                | 7,179  | 52.9       | 46.3     | 50.0  | 1,073  |
| Widowed                             | 79.2                  | 71.9     | 72.9  | 1,022               | 62.7       | 55.7     | 56.8                                | 2,712  | 49.0       | 32.9     | 35.7  | 407    |
| Divorced/Separated/Deserted/ Others | 57.7                  | 79.2     | 68.1  | 111                 | 50.4       | 43.5     | 47.3                                | 304    | 55.6       | 58.8     | 57.1  | 89     |
| <b>Living arrangement</b>           |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| Living alone                        | 60.1                  | 62.7     | 62.2  | 132                 | 56.3       | 59.0     | 58.5                                | 416    | 38.4       | 30.7     | 32.1  | 60     |
| Living with spouse and/or others    | 81.9                  | 73.7     | 77.2  | 654                 | 47.8       | 56.2     | 53.0                                | 1,755  | 61.5       | 49.8     | 53.8  | 255    |
| Living with spouse and children     | 62.1                  | 69.4     | 65.7  | 2,077               | 52.0       | 55.7     | 53.5                                | 5,318  | 51.6       | 44.7     | 49.1  | 802    |
| Living with children and others     | 79.9                  | 75.9     | 76.5  | 858                 | 62.8       | 55.3     | 56.8                                | 2,227  | 46.3       | 34.4     | 36.9  | 343    |
| Living with others only             | 70.1                  | 62.3     | 64.3  | 180                 | 47.5       | 48.3     | 48.1                                | 479    | 63.8       | 40.0     | 48.3  | 109    |
| <b>Religion</b>                     |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| Hindu                               | 68.4                  | 71.3     | 70.2  | 2,929               | 51.4       | 54.3     | 53.1                                | 7,690  | 50.1       | 39.4     | 44.3  | 1,172  |
| Muslim                              | 66.8                  | 70.1     | 68.9  | 567                 | 57.9       | 65.2     | 62.0                                | 1,494  | 55.6       | 56.1     | 55.9  | 207    |
| Christian                           | 63.8                  | 80.1     | 76.0  | 255                 | 43.7       | 43.5     | 43.6                                | 627    | 83.8       | 34.4     | 64.4  | 112    |
| Others                              | 66.3                  | 73.6     | 70.7  | 150                 | 62.8       | 58.4     | 60.3                                | 384    | 40.0       | 47.9     | 43.9  | 78     |
| <b>Caste/tribe</b>                  |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| Scheduled tribe                     | 66.7                  | 62.2     | 63.8  | 438                 | 41.4       | 44.2     | 42.9                                | 1,020  | 34.9       | 38.9     | 37.3  | 173    |
| Scheduled caste                     | 62.9                  | 69.2     | 66.6  | 723                 | 55.6       | 52.1     | 53.6                                | 1,678  | 51.8       | 31.3     | 39.5  | 264    |
| Other backward class                | 69.7                  | 71.0     | 70.5  | 1,636               | 49.2       | 53.6     | 51.7                                | 4,303  | 52.7       | 43.7     | 48.0  | 657    |
| None of the above                   | 69.9                  | 76.4     | 74.1  | 1,104               | 58.1       | 62.9     | 60.9                                | 3,194  | 55.7       | 47.0     | 51.3  | 475    |
| <b>Education</b>                    |                       |          |       |                     |            |          |                                     |        |            |          |       |        |
| No schooling                        | 65.0                  | 65.8     | 65.5  | 1,869               | 55.1       | 55.1     | 55.1                                | 4,958  | 54.6       | 35.1     | 42.0  | 735    |
| Less than 5 years complete          | 60.9                  | 72.7     | 68.7  | 524                 | 53.4       | 52.7     | 53.0                                | 1,256  | 60.2       | 54.5     | 57.2  | 175    |
| 5-9 years complete                  | 65.6                  | 78.0     | 72.1  | 939                 | 52.9       | 51.3     | 52.1                                | 2,270  | 56.1       | 45.6     | 51.8  | 383    |
| 10 or more years complete           | 80.5                  | 84.3     | 82.5  | 569                 | 45.0       | 65.6     | 55.1                                | 1,711  | 38.8       | 53.6     | 44.9  | 276    |

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| Background characteristics               | Chronic lung diseases |          |       | Bone/joint diseases |            |          | Neurological & psychiatric diseases |        |          | Cancer |        |            |          |       |        |     |
|------------------------------------------|-----------------------|----------|-------|---------------------|------------|----------|-------------------------------------|--------|----------|--------|--------|------------|----------|-------|--------|-----|
|                                          | Age 45-59*            | Age ≥ 60 | Total | Number              | Age 45-59* | Age ≥ 60 | Total                               | Number | Age ≥ 60 | Total  | Number | Age 45-59* | Age ≥ 60 | Total | Number |     |
|                                          | 45-59*                |          |       |                     |            |          |                                     |        |          |        |        |            |          |       |        |     |
| Work status                              |                       |          |       |                     |            |          |                                     |        |          |        |        |            |          |       |        |     |
| Currently working                        | 67.3                  | 68.0     | 67.6  | 1,279               | 48.6       | 49.9     | 49.1                                | 3,405  | 46.2     | 51.7   | 48.2   | 486        | 70.7     | 67.6  | 69.9   | 134 |
| Worked in past but currently not working | 71.5                  | 71.4     | 71.4  | 1,568               | 58.8       | 57.1     | 57.5                                | 3,334  | 69.9     | 42.5   | 50.7   | 600        | 76.3     | 76.1  | 76.2   | 168 |
| Never worked                             | 67.2                  | 74.5     | 71.8  | 1,054               | 55.3       | 57.3     | 56.4                                | 3,456  | 48.4     | 32.9   | 40.4   | 483        | 86.7     | 77.1  | 81.6   | 170 |
| MPCE quintile                            |                       |          |       |                     |            |          |                                     |        |          |        |        |            |          |       |        |     |
| Poorest                                  | 57.3                  | 62.7     | 60.8  | 668                 | 48.5       | 51.9     | 50.6                                | 1,644  | 46.2     | 26.8   | 33.2   | 259        | 51.5     | 85.7  | 61.7   | 55  |
| Poorer                                   | 64.6                  | 64.3     | 64.4  | 763                 | 53.6       | 52.1     | 52.8                                | 1,906  | 60.4     | 37.1   | 48.6   | 285        | 96.3     | 83.8  | 90.8   | 75  |
| Middle                                   | 69.0                  | 74.7     | 72.4  | 797                 | 53.5       | 55.2     | 54.4                                | 2,026  | 57.4     | 49.4   | 52.8   | 315        | 61.3     | 57.5  | 59.3   | 81  |
| Richer                                   | 68.0                  | 73.0     | 70.9  | 810                 | 55.1       | 53.7     | 54.3                                | 2,264  | 61.6     | 46.7   | 53.8   | 329        | 83.1     | 89.4  | 86.7   | 104 |
| Richest                                  | 76.3                  | 81.3     | 79.2  | 863                 | 50.6       | 64.5     | 58.2                                | 2,355  | 37.2     | 48.6   | 42.1   | 381        | 86.3     | 64.5  | 73.2   | 157 |
| Total                                    | 68.1                  | 71.5     | 70.2  | 3,901               | 52.5       | 55.5     | 54.2                                | 10,195 | 52.6     | 41.4   | 46.6   | 1,569      | 77.0     | 75.1  | 76.0   | 472 |

## Notes

\* Including spouse irrespective of age, "[1]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

†Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem

**Table 7.18 Treatment rate<sup>1</sup> for chronic lung diseases, bone/joint diseases, neurological & psychiatric diseases and cancer among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Chronic lung diseases |             |             |              | Bone/joint diseases |             |             |               | Neurological & psychiatric diseases |             |             |              | Cancer      |             |             |            |
|-----------------------|-----------------------|-------------|-------------|--------------|---------------------|-------------|-------------|---------------|-------------------------------------|-------------|-------------|--------------|-------------|-------------|-------------|------------|
|                       | Age 45-59*            | Age ≥ 60    | Total       | Number       | Age 45-59*          | Age ≥ 60    | Total       | Number        | Age 45-59*                          | Age ≥ 60    | Total       | Number       | Age 45-59*  | Age ≥ 60    | Total       | Number     |
| <b>India</b>          | <b>68.1</b>           | <b>71.5</b> | <b>70.2</b> | <b>3,901</b> | <b>52.5</b>         | <b>55.5</b> | <b>54.2</b> | <b>10,195</b> | <b>52.6</b>                         | <b>41.4</b> | <b>46.6</b> | <b>1,569</b> | <b>77.0</b> | <b>75.1</b> | <b>76.0</b> | <b>472</b> |
| <b>North</b>          |                       |             |             |              |                     |             |             |               |                                     |             |             |              |             |             |             |            |
| Chandigarh            | 54.4                  | 84.8        | 71.8        | 35           | 71.4                | 62.2        | 66.6        | 85            | [23.5]                              | 44.7        | 37.6        | 24           | 71.6        | [89.7]      | 79.9        | 9          |
| Delhi                 | 81.6                  | 97.1        | 89.8        | 67           | 56.8                | 78.1        | 68.6        | 131           | 71.7                                | [61.6]      | 68.1        | 20           | 100         | [100]       | [100]       | 4          |
| Haryana               | 72.4                  | 66.3        | 68.4        | 130          | 62.1                | 67.1        | 65.2        | 160           | 69.4                                | 54.2        | 59.6        | 19           | 89.4        | 100         | 95.3        | 15         |
| Himachal Pradesh      | 74.9                  | 72.3        | 73.0        | 54           | 56.3                | 60.2        | 58.5        | 159           | [53.5]                              | 87.1        | 69.4        | 11           | 100         | 67.7        | 80.0        | 22         |
| Jammu & Kashmir       | 48.0                  | 52.8        | 51.6        | 81           | 69.1                | 75.5        | 72.5        | 400           | 55.4                                | 56.7        | 56.3        | 57           | [100]       | [100]       | 100         | 5          |
| Punjab                | 57.4                  | 66.9        | 62.6        | 100          | 57.8                | 61.9        | 60.0        | 303           | 42.8                                | 36.3        | 39.7        | 61           | 100         | [46.3]      | 71.5        | 14         |
| Rajasthan             | 67.1                  | 69.9        | 69.1        | 213          | 62.7                | 63.0        | 62.9        | 264           | 100                                 | 59.9        | 73.8        | 23           | [100]       | 86.5        | 89.6        | 9          |
| Uttarakhand           | 48.8                  | 73.9        | 62.4        | 105          | 70.3                | 56.9        | 62.9        | 208           | [100]                               | [84.4]      | 89.4        | 8            | 100         | [38.3]      | 68.2        | 17         |
| <b>Central</b>        |                       |             |             |              |                     |             |             |               |                                     |             |             |              |             |             |             |            |
| Chhattisgarh          | 52.5                  | 60.6        | 56.7        | 50           | 67.3                | 53.0        | 59.4        | 128           | [76.9]                              | [39.0]      | 51.8        | 13           | [100]       | [25.9]      | 61.6        | 7          |
| Madhya Pradesh        | 68.9                  | 61.0        | 63.9        | 172          | 51.2                | 35.7        | 43.4        | 300           | 45.4                                | 50.4        | 48.6        | 57           | 85.4        | [100]       | 89.3        | 12         |
| Uttar Pradesh         | 61.5                  | 74.3        | 69.9        | 282          | 56.3                | 62.7        | 60.3        | 402           | 36.8                                | 44.8        | 41.3        | 82           | 93.1        | 72.3        | 84.2        | 22         |
| <b>East</b>           |                       |             |             |              |                     |             |             |               |                                     |             |             |              |             |             |             |            |
| Bihar                 | 65.6                  | 70.4        | 68.8        | 229          | 50.0                | 55.9        | 53.4        | 442           | [65.5]                              | [32.0]      | 45.3        | 18           | [13.4]      | 100         | 71.5        | 9          |
| Jharkhand             | 63.3                  | 71.2        | 68.5        | 71           | 59.4                | 61.4        | 60.6        | 166           | 61.6                                | [41.7]      | 54.4        | 18           | 82.3        | 70.2        | 77.7        | 22         |
| Odisha                | 66.0                  | 64.9        | 65.3        | 104          | 45.2                | 57.6        | 52.2        | 417           | 41.1                                | 38.8        | 39.9        | 36           | 66.2        | 100         | 79.7        | 15         |
| West Bengal           | 61.5                  | 70.8        | 67.1        | 286          | 59.4                | 47.5        | 53.7        | 1,025         | 54.6                                | 29.0        | 40.7        | 221          | 35.1        | 74.3        | 52.5        | 41         |
| <b>Northeast</b>      |                       |             |             |              |                     |             |             |               |                                     |             |             |              |             |             |             |            |
| Arunachal Pradesh     | [34.7]                | [9.8]       | 24.3        | 22           | 19.5                | 16.0        | 17.9        | 62            | [58.9]                              | [57.3]      | [58.1]      | 8            | [68.5]      | -           | [59.1]      | 9          |
| Assam                 | 59.5                  | 77.0        | 70.5        | 58           | 47.3                | 76.7        | 60.2        | 120           | 54.8                                | 78.6        | 64.9        | 44           | [29.2]      | [19.0]      | [25.0]      | 9          |
| Manipur               | 60.1                  | 36.2        | 46.5        | 43           | 67.7                | 62.6        | 64.2        | 43            | [70.5]                              | [34.6]      | 53.2        | 10           | [100]       | 100         | 100         | 8          |
| Meghalaya             | -                     | [46.5]      | [33.9]      | 10           | [18.7]              | 42.0        | 33.7        | 25            | [36.1]                              | [39.3]      | [38.5]      | 6            | [100]       | [100]       | [100]       | 2          |
| Mizoram               | -                     | 25.3        | 17.8        | 60           | 21.9                | 25.4        | 24.0        | 82            | 15.9                                | [24.7]      | 22.8        | 24           | 100         | 82.3        | 88.3        | 12         |
| Nagaland              | -                     | [49.3]      | [40.9]      | 10           | [41.7]              | 33.5        | 35.1        | 12            | [100]                               | [2.8]       | [8.0]       | 5            | [77.6]      | [100]       | [87.9]      | 3          |
| Tripura               | 51.4                  | 58.7        | 55.2        | 80           | 40.9                | 44.6        | 42.4        | 123           | 85.7                                | 68.0        | 73.6        | 17           | 100         | [41.6]      | 88.0        | 9          |
| <b>West</b>           |                       |             |             |              |                     |             |             |               |                                     |             |             |              |             |             |             |            |
| Dadra & Nagar Haveli  | 79.9                  | 72.5        | 75.3        | 65           | 55.5                | 40.7        | 47.1        | 177           | 53.8                                | 41.4        | 47.6        | 29           | [100]       | [26.5]      | [70.1]      | 3          |
| Daman & Diu           | 68.7                  | 67.7        | 68.3        | 50           | 44.8                | 53.1        | 49.6        | 254           | 95.1                                | [78.9]      | 91.6        | 15           | [42.8]      | [68.9]      | 61.3        | 7          |
| Goa                   | 71.6                  | 89.3        | 84.3        | 29           | 67.1                | 70.2        | 69.0        | 183           | 66.4                                | 43.4        | 49.4        | 26           | [100]       | [87.1]      | 91.7        | 7          |
| Gujarat               | 73.4                  | 74.2        | 73.9        | 153          | 42.3                | 49.2        | 46.4        | 357           | 47.3                                | 44.2        | 45.9        | 69           | 94.0        | 73.4        | 81.5        | 20         |
| Maharashtra           | 55.4                  | 65.9        | 62.2        | 204          | 61.7                | 62.6        | 62.3        | 753           | 73.5                                | 41.6        | 52.9        | 43           | 91.0        | 54.4        | 71.7        | 38         |

Continued

Continued

| State/Union Territory     | Chronic lung diseases |          |       | Bone/joint diseases |          |       | Neurological & psychiatric diseases |          |       | Cancer     |          |       |
|---------------------------|-----------------------|----------|-------|---------------------|----------|-------|-------------------------------------|----------|-------|------------|----------|-------|
|                           | Age 45-59*            | Age ≥ 60 | Total | Age 45-59*          | Age ≥ 60 | Total | Age 45-59*                          | Age ≥ 60 | Total | Age 45-59* | Age ≥ 60 | Total |
| <b>South</b>              |                       |          |       |                     |          |       |                                     |          |       |            |          |       |
| Andaman & Nicobar Islands | 67.1                  | 77.8     | 73.5  | 49                  | 61.7     | 63.7  | 62.8                                | 210      | 92.6  | 20.7       | 54.5     | 31    |
| Andhra Pradesh            | 71.8                  | 79.8     | 76.5  | 188                 | 52.9     | 52.3  | 52.6                                | 507      | 68.4  | 58.3       | 63.3     | 77    |
| Karnataka                 | 86.0                  | 80.2     | 83.0  | 154                 | 36.7     | 53.8  | 46.9                                | 373      | 48.1  | 40.4       | 44.8     | 60    |
| Kerala                    | 45.2                  | 68.5     | 61.2  | 228                 | 56.2     | 60.6  | 59.1                                | 557      | 53.9  | 56.9       | 55.1     | 60    |
| Lakshadweep               | 71.8                  | 88.0     | 82.9  | 62                  | 65.4     | 64.8  | 65.0                                | 148      | 70.6  | [100]      | 76.8     | 13    |
| Puducherry                | 59.5                  | 60.5     | 60.1  | 152                 | 44.5     | 49.8  | 47.5                                | 286      | 24.4  | 31.2       | 29.6     | 62    |
| Tamil Nadu                | 60.8                  | 67.8     | 64.9  | 193                 | 44.5     | 48.5  | 46.8                                | 710      | 56.7  | 45.6       | 49.9     | 118   |
| Telangana                 | 68.3                  | 78.6     | 74.2  | 112                 | 54.0     | 56.4  | 55.4                                | 623      | 45.2  | 37.3       | 41.0     | 184   |

Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-/-" indicates less number of cases/no cases.

†Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem.



### 7.2.11 *Thyroid, gastrointestinal, and skin diseases*

In the LASI, information was collected on other chronic health conditions that include thyroid disorders, gastrointestinal problems (gastroesophageal reflux disease, constipation, indigestion, piles, and peptic ulcer), and skin diseases. Table 7.19 shows the prevalence of thyroid, gastrointestinal, and skin diseases in India by background characteristics.

Overall, the self-reported prevalence of thyroid disorders, gastrointestinal problems, and skin diseases among older adults age 45 and above in India is 3.1%, 18%, and 5.2%, respectively (Table 7.19). The self-reported prevalence of thyroid disorders is higher among older adults age 45-59 (3.8%) than elderly age 60 and above (2.2%), among older adult women (4.4%) than among men (1.2%) age 45 and above, and among older adults residing in urban areas (5.7%) than in those residing in rural areas (1.8%). Among older adults age 45 and above, thyroid disorders are more prevalent among those with 10 or more years of schooling (5.6%) than those with no schooling (1.9%) and higher among those in the richest MPCE quintile (4.9%) than those in the poorest quintile (1.6%). Gastrointestinal problems are more prevalent among elderly age 60 and above (19%) than among older adults age 45-59 (17%) and in rural areas (19%) than in urban areas (15%). Among elderly age 60 and above, the prevalence of diagnosed gastrointestinal diseases is higher among currently married (20%), those living with spouse and children (21%), Muslim (22%), and those never worked (20%). With respect to skin diseases among the elderly age 60 and above, they are slightly more prevalent among men (6%) than women (5%), those living alone or living with spouse and children (6%), and those in religions other than Hindu, Muslim, and Christian (7%).

Cross-state differences in the prevalence rate of thyroid, gastrointestinal, and skin diseases are presented in Table 7.20. One in every ten older adults age 45-59 from Jammu & Kashmir (11%) and Kerala (11%) reported thyroid disorder. Among older adults age 45 and above, the self-reported prevalence of thyroid disorders is more than 5% in the states/UTs of Kerala (9.1%), Jammu & Kashmir (8.7%), Chandigarh (8.2%), Delhi (6.5%), West Bengal (5.4%), and Lakshadweep (5.4%). A markedly higher prevalence of gastrointestinal problems is reported among older adults age 45 and above in Tripura (33%), Odisha (33%), Haryana (32%), and Andaman & Nicobar (31%). The prevalence of skin diseases by state varies from 10% in Haryana and Punjab to less than 1% in Meghalaya.

**Table 7.19 Self-reported prevalence (%) of diagnosed thyroid, gastrointestinal and skin diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*       |                          |               |               | Age ≥ 60         |                          |               |               | Total            |                          |               |               |
|------------------------------------------|------------------|--------------------------|---------------|---------------|------------------|--------------------------|---------------|---------------|------------------|--------------------------|---------------|---------------|
|                                          | Thyroid disorder | Gastrointestinal problem | Skin diseases | Number        | Thyroid disorder | Gastrointestinal problem | Skin diseases | Number        | Thyroid disorder | Gastrointestinal problem | Skin diseases | Number        |
| <b>Place of residence</b>                |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Rural                                    | 2.3              | 18.8                     | 5.0           | 25,746        | 1.3              | 20.0                     | 5.3           | 20,685        | 1.8              | 19.4                     | 5.1           | 46,431        |
| Urban                                    | 6.7              | 12.8                     | 5.4           | 14,920        | 4.5              | 16.8                     | 5.1           | 10,686        | 5.7              | 14.5                     | 5.3           | 25,606        |
| <b>Sex</b>                               |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Male                                     | 1.4              | 17.1                     | 5.9           | 15,422        | 1.1              | 19.6                     | 5.9           | 15,038        | 1.2              | 18.4                     | 5.9           | 30,460        |
| Female                                   | 5.2              | 16.6                     | 4.7           | 25,244        | 3.3              | 18.6                     | 4.6           | 16,333        | 4.4              | 17.4                     | 4.6           | 41,577        |
| <b>Marital status</b>                    |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Currently married                        | 3.8              | 17.2                     | 5.3           | 35,373        | 2.2              | 19.8                     | 5.6           | 19,862        | 3.2              | 18.2                     | 5.4           | 55,235        |
| Widowed                                  | 3.8              | 14.7                     | 3.1           | 3,862         | 2.4              | 18.3                     | 4.7           | 10,688        | 2.7              | 17.5                     | 4.3           | 14,550        |
| Divorced/ Separated/ Deserted/ Others    | 2.7              | 11.6                     | 4.8           | 1,431         | 0.3              | 12.4                     | 4.1           | 821           | 1.8              | 11.9                     | 4.5           | 2,252         |
| <b>Living arrangement</b>                |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Living alone                             | 2.9              | 18.7                     | 2.5           | 689           | 1.9              | 15.9                     | 6.0           | 1,618         | 2.1              | 16.5                     | 5.2           | 2,307         |
| Living with spouse and/ or others        | 3.4              | 16.0                     | 5.6           | 4,530         | 2.2              | 18.1                     | 4.8           | 6,165         | 2.7              | 17.3                     | 5.1           | 10,695        |
| Living with spouse and children          | 3.8              | 17.3                     | 5.3           | 30,189        | 2.3              | 20.6                     | 6.0           | 13,457        | 3.3              | 18.3                     | 5.5           | 43,646        |
| Living with children and others          | 4.3              | 15.1                     | 3.8           | 4,074         | 2.3              | 18.7                     | 4.5           | 8,413         | 2.8              | 17.6                     | 4.3           | 12,487        |
| Living with others only                  | 1.9              | 11.1                     | 4.2           | 1,184         | 2.6              | 17.1                     | 4.0           | 1,718         | 2.3              | 14.8                     | 4.1           | 2,902         |
| <b>Religion</b>                          |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Hindu                                    | 3.6              | 16.6                     | 4.6           | 29,845        | 2.1              | 18.8                     | 5.1           | 22,974        | 2.9              | 17.6                     | 4.9           | 52,819        |
| Muslim                                   | 5.1              | 17.6                     | 8.6           | 4,924         | 3.2              | 21.7                     | 5.1           | 3,720         | 4.3              | 19.4                     | 7.1           | 8,644         |
| Christian                                | 4.1              | 17.7                     | 3.9           | 4,058         | 3.7              | 16.9                     | 5.7           | 3,136         | 3.9              | 17.3                     | 4.7           | 7,194         |
| Others                                   | 3.4              | 16.8                     | 5.7           | 1,839         | 2.4              | 20.4                     | 7.3           | 1,541         | 3.0              | 18.5                     | 6.5           | 3,380         |
| <b>Caste/tribe</b>                       |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Scheduled tribe                          | 1.1              | 15.2                     | 4.3           | 7,325         | 1.7              | 14.4                     | 4.7           | 5,157         | 1.4              | 14.8                     | 4.5           | 12,482        |
| Scheduled caste                          | 2.8              | 17.8                     | 4.3           | 6,885         | 1.1              | 20.4                     | 5.5           | 5,128         | 2.0              | 19.0                     | 4.8           | 12,013        |
| Other backward class                     | 3.8              | 14.6                     | 5.0           | 15,252        | 1.8              | 17.5                     | 4.9           | 11,851        | 2.9              | 15.9                     | 5.0           | 27,103        |
| None of the above                        | 5.3              | 20.3                     | 6.2           | 11,204        | 3.9              | 22.1                     | 5.8           | 9,235         | 4.7              | 21.1                     | 6.0           | 20,439        |
| <b>Education</b>                         |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| No schooling                             | 2.3              | 16.5                     | 4.7           | 16,278        | 1.5              | 18.8                     | 4.5           | 16,854        | 1.9              | 17.7                     | 4.6           | 33,132        |
| Less than 5 years complete               | 2.9              | 19.8                     | 6.3           | 4,264         | 3.0              | 20.5                     | 6.8           | 3,772         | 3.0              | 20.1                     | 6.6           | 8,036         |
| 5-9 years complete                       | 4.3              | 18.2                     | 5.5           | 10,870        | 2.8              | 20.1                     | 6.7           | 5,995         | 3.7              | 19.0                     | 6.0           | 16,865        |
| 10 or more years complete                | 6.4              | 14.3                     | 4.9           | 9,254         | 4.1              | 17.9                     | 4.9           | 4,750         | 5.6              | 15.5                     | 4.9           | 14,004        |
| <b>Work status</b>                       |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Currently working                        | 2.2              | 16.2                     | 4.5           | 23,617        | 1.3              | 17.7                     | 5.6           | 9,280         | 1.9              | 16.7                     | 4.9           | 32,897        |
| Worked in past but currently not working | 6.0              | 17.0                     | 7.9           | 4,563         | 2.1              | 19.4                     | 5.1           | 13,325        | 3.0              | 18.8                     | 5.8           | 17,888        |
| Never worked                             | 6.1              | 17.7                     | 5.2           | 12,486        | 3.7              | 20.2                     | 5.0           | 8,766         | 5.1              | 18.8                     | 5.1           | 21,252        |
| <b>MPCE quintile</b>                     |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Poorest                                  | 2.1              | 14.6                     | 4.3           | 7,651         | 1.1              | 16.8                     | 4.0           | 6,463         | 1.6              | 15.6                     | 4.2           | 14,114        |
| Poorer                                   | 2.8              | 16.5                     | 5.2           | 8,030         | 1.9              | 20.1                     | 5.2           | 6,459         | 2.4              | 18.2                     | 5.2           | 14,489        |
| Middle                                   | 3.3              | 17.0                     | 4.6           | 8,100         | 1.6              | 18.8                     | 5.6           | 6,395         | 2.5              | 17.8                     | 5.0           | 14,495        |
| Richer                                   | 5.0              | 18.7                     | 5.0           | 8,493         | 3.5              | 19.8                     | 5.7           | 6,157         | 4.3              | 19.2                     | 5.4           | 14,650        |
| Richest                                  | 5.7              | 16.9                     | 6.5           | 8,392         | 3.7              | 20.4                     | 5.9           | 5,897         | 4.9              | 18.4                     | 6.3           | 14,289        |
| <b>Total</b>                             | <b>3.8</b>       | <b>16.8</b>              | <b>5.1</b>    | <b>40,666</b> | <b>2.2</b>       | <b>19.1</b>              | <b>5.2</b>    | <b>31,371</b> | <b>3.1</b>       | <b>17.8</b>              | <b>5.2</b>    | <b>72,037</b> |

Note

\* Including spouse irrespective of age

**Table 7.20 Self-reported prevalence (%) of diagnosed thyroid, gastrointestinal and skin diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*       |                          |               |               | Age ≥ 60         |                          |               |               | Total            |                          |               |               |
|---------------------------|------------------|--------------------------|---------------|---------------|------------------|--------------------------|---------------|---------------|------------------|--------------------------|---------------|---------------|
|                           | Thyroid disorder | Gastrointestinal problem | Skin diseases | Number        | Thyroid disorder | Gastrointestinal problem | Skin diseases | Number        | Thyroid disorder | Gastrointestinal problem | Skin diseases | Number        |
| <b>India</b>              | <b>3.8</b>       | <b>16.8</b>              | <b>5.1</b>    | <b>40,666</b> | <b>2.2</b>       | <b>19.1</b>              | <b>5.2</b>    | <b>31,371</b> | <b>3.1</b>       | <b>17.8</b>              | <b>5.2</b>    | <b>72,037</b> |
| <b>North</b>              |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Chandigarh                | 9.7              | 14.4                     | 5.5           | 624           | 5.8              | 19.4                     | 6.2           | 386           | 8.2              | 16.4                     | 5.8           | 1,010         |
| Delhi                     | 8.3              | 21.5                     | 1.4           | 820           | 3.5              | 20.2                     | 3.2           | 495           | 6.5              | 21.0                     | 2.1           | 1,315         |
| Haryana                   | 4.2              | 27.6                     | 8.0           | 1,048         | 1.5              | 36.8                     | 11.7          | 847           | 2.9              | 32.0                     | 9.8           | 1,895         |
| Himachal Pradesh          | 3.1              | 23.4                     | 7.3           | 765           | 3.8              | 21.6                     | 7.7           | 618           | 3.4              | 22.6                     | 7.5           | 1,383         |
| Jammu & Kashmir           | 11.4             | 20.5                     | 4.1           | 881           | 6.0              | 19.5                     | 1.9           | 729           | 8.7              | 20.0                     | 3.0           | 1,610         |
| Punjab                    | 5.4              | 22.7                     | 8.2           | 1,112         | 2.1              | 27.8                     | 10.8          | 1,004         | 3.8              | 25.2                     | 9.5           | 2,116         |
| Rajasthan                 | 1.9              | 16.3                     | 4.4           | 1,161         | 1.5              | 21.0                     | 5.3           | 1,077         | 1.7              | 18.7                     | 4.8           | 2,238         |
| Uttarakhand               | 4.1              | 24.6                     | 4.2           | 715           | 1.2              | 24.5                     | 4.5           | 641           | 2.6              | 24.5                     | 4.3           | 1,356         |
| <b>Central</b>            |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Chhattisgarh              | 0.9              | 13.8                     | 6.7           | 1,275         | [0.2]            | 10.2                     | 3.9           | 779           | 0.6              | 12.4                     | 5.6           | 2,054         |
| Madhya Pradesh            | 4.6              | 10.6                     | 4.6           | 1,598         | 3.3              | 11.5                     | 5.2           | 1,313         | 4.0              | 11.0                     | 4.9           | 2,911         |
| Uttar Pradesh             | 1.7              | 20.6                     | 3.4           | 2,395         | 0.9              | 21.6                     | 4.3           | 2,167         | 1.3              | 21.1                     | 3.8           | 4,562         |
| <b>East</b>               |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Bihar                     | 2.7              | 27.7                     | 3.4           | 1,708         | 1.7              | 28.9                     | 4.9           | 1,807         | 2.2              | 28.3                     | 4.2           | 3,515         |
| Jharkhand                 | 3.1              | 21.4                     | 3.2           | 1,294         | 2.0              | 22.8                     | 5.3           | 1,167         | 2.5              | 22.1                     | 4.2           | 2,461         |
| Odisha                    | 2.5              | 32.9                     | 8.5           | 1,674         | 1.3              | 32.4                     | 10.1          | 1,235         | 1.9              | 32.7                     | 9.2           | 2,909         |
| West Bengal               | 6.3              | 20.8                     | 8.5           | 2,384         | 4.1              | 24.7                     | 7.8           | 1,539         | 5.4              | 22.4                     | 8.2           | 3,923         |
| <b>Northeast</b>          |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Arunachal Pradesh         | 1.9              | 11.5                     | 2.0           | 896           | [0.8]            | 12.4                     | [1.7]         | 317           | 1.6              | 11.7                     | 1.9           | 1,213         |
| Assam                     | 2.7              | 25.4                     | 6.6           | 1,548         | 1.2              | 24.6                     | 5.8           | 814           | 2.2              | 25.1                     | 6.3           | 2,362         |
| Manipur                   | 2.4              | 16.1                     | 6.1           | 761           | 4.3              | 22.0                     | 3.6           | 604           | 3.3              | 18.8                     | 4.9           | 1,365         |
| Meghalaya                 | 1.0              | 7.1                      | [0.8]         | 556           | [0.6]            | 5.8                      | [1.1]         | 409           | 0.8              | 6.5                      | 0.9           | 965           |
| Mizoram                   | 2.9              | 26.6                     | 0.7           | 714           | 2.8              | 23.4                     | 2.8           | 530           | 2.9              | 25.2                     | 1.7           | 1,244         |
| Nagaland                  | -                | 6.1                      | [0.1]         | 708           | [0.2]            | 5.7                      | [3.0]         | 605           | [0.1]            | 5.9                      | 1.5           | 1,313         |
| Tripura                   | 3.6              | 34.0                     | 10.8          | 732           | [0.8]            | 30.5                     | 4.5           | 459           | 2.5              | 32.6                     | 8.3           | 1,191         |
| <b>West</b>               |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Dadra & Nagar Haveli      | 4.7              | 8.4                      | 4.9           | 635           | 2.6              | 5.3                      | 5.2           | 450           | 3.9              | 7.2                      | 5.0           | 1,085         |
| Daman & Diu               | 3.5              | 11.2                     | 9.0           | 557           | 2.9              | 13.9                     | 8.5           | 429           | 3.2              | 12.5                     | 8.8           | 986           |
| Goa                       | 5.2              | 11.8                     | 1.5           | 787           | 3.0              | 14.1                     | 1.6           | 634           | 4.2              | 12.8                     | 1.5           | 1,421         |
| Gujarat                   | 2.9              | 7.2                      | 7.4           | 1,344         | 2.6              | 9.9                      | 8.7           | 982           | 2.8              | 8.4                      | 8.0           | 2,326         |
| Maharashtra               | 2.6              | 14.3                     | 3.9           | 2,175         | 2.6              | 14.5                     | 3.4           | 1,785         | 2.6              | 14.4                     | 3.6           | 3,960         |
| <b>South</b>              |                  |                          |               |               |                  |                          |               |               |                  |                          |               |               |
| Andaman & Nicobar islands | 4.6              | 31.3                     | 8.9           | 720           | 2.9              | 29.8                     | 8.5           | 521           | 3.9              | 30.7                     | 8.7           | 1,241         |
| Andhra Pradesh            | 5.5              | 24.2                     | 3.4           | 1,569         | 2.2              | 26.6                     | 4.7           | 1,101         | 4.1              | 25.2                     | 4.0           | 2,670         |
| Karnataka                 | 4.3              | 5.8                      | 5.0           | 1,410         | 2.1              | 9.7                      | 2.9           | 1,002         | 3.5              | 7.4                      | 4.2           | 2,412         |
| Kerala                    | 10.7             | 11.3                     | 4.9           | 1,275         | 7.6              | 15.7                     | 8.3           | 1,206         | 9.1              | 13.6                     | 6.7           | 2,481         |
| Lakshadweep               | 6.0              | 10.9                     | 1.4           | 636           | 4.7              | 14.6                     | 1.9           | 500           | 5.4              | 12.7                     | 1.6           | 1,136         |
| Puducherry                | 4.2              | 6.8                      | 2.8           | 787           | 3.4              | 6.9                      | 2.6           | 638           | 3.8              | 6.8                      | 2.7           | 1,425         |
| Tamil Nadu                | 3.1              | 5.1                      | 1.9           | 1,995         | 1.7              | 6.5                      | 1.3           | 1,530         | 2.5              | 5.7                      | 1.7           | 3,525         |
| Telangana                 | 4.1              | 13.3                     | 2.8           | 1,407         | 1.6              | 16.3                     | 4.1           | 1,051         | 2.9              | 14.7                     | 3.4           | 2,458         |

Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

## 7.3 FAMILY MEDICAL HISTORY

Family medical history represents the record of health information about a person and his/her close relatives. A complete record includes information about three generations of the respondent including children, brothers and sisters, parents, aunts and uncles, nieces and nephews, grandparents, and cousins. Families have many health-influencing factors in common, including their genes, environment, and lifestyle. Together, these factors can inform about the common medical conditions in the family. Family medical history can identify people with a higher risk of having common disorders, such as heart disease, high blood pressure, stroke, certain cancers, and diabetes. These complex disorders are influenced by a combination of genetic factors, environmental conditions, and lifestyle choices. A family history also can provide information about the risk of rare conditions caused by gene mutation, such as cystic fibrosis and sickle cell anaemia (NIH, 2019).

In the LASI, information was collected about the respondent's family (father, mother, brother, sister, grandparents, aunts/uncles, nephews, or niece) medical history to understand the genetic risk factors for hypertension, diabetes, heart disease, stroke, cancer, Alzheimer's disease, Parkinson's disease, and psychotic disorders.

Table 7.21 presents the family medical history by background characteristics. More than a fifth of older adults age 45 and above reported that they have at least one family member diagnosed with hypertension; 16% have family history of diabetes mellitus; 8%, heart disease; 6%, stroke and neurological/psychiatric conditions; and 5%, cancer. The proportion of older adults reporting having family members diagnosed with medical conditions are higher in urban areas for all the diseases/conditions, except neurological/psychiatric conditions. The percentage of older adults with family history of any of the chronic condition increases with educational attainment.

Cross-state variations among older adults having family medical history of different health conditions are shown in Table 7.22. The proportion of older adults with family history of hypertension is much higher in the states of Kerala (55%), Lakshadweep (43%), Assam (42%), Chandigarh (39%), and Goa (38%). In West Bengal (17%) and Manipur (11%), one in ten older adults reported having family members who experienced stroke. More than a quarter of older adults reported family history of diabetes mellitus, and this is more common in south Indian states besides Goa and Chandigarh. A higher proportion of older adults in Mizoram (20%) and Kerala (15%) reported that their family members have been diagnosed with cancer. The proportion of older adults reporting any neurological/psychiatric problems among family members ranges from 10% in Bihar to 0.5% in Nagaland.

### Key findings: family medical history

- In India, nearly a quarter of older adults age 45 and above reported family history of hypertension; 16% reported diabetes mellitus, eight percent reported heart disease; whereas five to six percent have family history of stroke, cancer, and neurological/psychiatric conditions.
- Elderly residing in urban areas and with higher education are more likely to report family history of medical conditions.
- A higher proportion of older adults age 45 and above in Kerala reported family history of hypertension (55%), heart disease (21%) as well as diabetes mellitus (52%). A higher proportion of family members are diagnosed with stroke in West Bengal (17%); with neurological & psychiatric conditions in Bihar (10%); and with cancer in Mizoram (20%) and Kerala (15%).

**Table 7.21 Percentage of older adults with family<sup>1</sup> medical history by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age > 45*    |               |            |                   |                                      |            | Number        |
|------------------------------------------|--------------|---------------|------------|-------------------|--------------------------------------|------------|---------------|
|                                          | Hypertension | Heart Disease | Stroke     | Diabetes Mellitus | Neurological/ Psychiatric Conditions | Cancer     |               |
| <b>Place of residence</b>                |              |               |            |                   |                                      |            |               |
| Rural                                    | 18.5         | 6.7           | 5.6        | 11.3              | 5.7                                  | 4.4        | 46,213        |
| Urban                                    | 31.1         | 11.7          | 6.3        | 25.4              | 4.9                                  | 6.6        | 25,489        |
| <b>Sex</b>                               |              |               |            |                   |                                      |            |               |
| Male                                     | 21.8         | 8.3           | 6.3        | 14.9              | 6.0                                  | 4.9        | 30,340        |
| Female                                   | 23.0         | 8.2           | 5.5        | 16.3              | 5.1                                  | 5.3        | 41,362        |
| <b>Marital status</b>                    |              |               |            |                   |                                      |            |               |
| Currently married                        | 23.4         | 8.9           | 6.2        | 16.2              | 5.7                                  | 5.0        | 55,027        |
| Widowed                                  | 19.1         | 6.0           | 4.8        | 13.8              | 4.8                                  | 5.7        | 14,436        |
| Divorced/Separated/Deserted Others       | 25.2         | 7.3           | 5.3        | 16.9              | 4.8                                  | 4.2        | 2,239         |
| Living arrangement                       |              |               |            |                   |                                      |            |               |
| <b>Living alone</b>                      | 17.0         | 5.6           | 4.3        | 12.9              | 3.9                                  | 3.4        | 2,292         |
| Living with spouse and/or others         | 20.9         | 8.5           | 5.2        | 15.8              | 5.0                                  | 4.4        | 10,555        |
| Living with spouse and children          | 24.0         | 9.0           | 6.5        | 16.4              | 5.9                                  | 5.1        | 43,586        |
| Living with children and others          | 20.8         | 6.2           | 5.1        | 15.0              | 5.0                                  | 6.4        | 12,410        |
| Living with others only                  | 18.6         | 6.9           | 4.3        | 11.3              | 5.0                                  | 3.3        | 2,859         |
| <b>Religion</b>                          |              |               |            |                   |                                      |            |               |
| Hindu                                    | 21.8         | 7.7           | 5.7        | 15.2              | 5.4                                  | 5.1        | 52,581        |
| Muslim                                   | 26.7         | 12.8          | 7.1        | 19.6              | 7.1                                  | 5.1        | 8,585         |
| Christian                                | 22.7         | 5.3           | 4.8        | 16.2              | 3.6                                  | 3.9        | 7,166         |
| <b>Others</b>                            | 25.9         | 9.3           | 7.1        | 16.1              | 3.2                                  | 6.3        | 3,370         |
| Caste/tribe                              |              |               |            |                   |                                      |            |               |
| Scheduled tribe                          | 11.7         | 4.0           | 3.7        | 6.1               | 3.6                                  | 3.2        | 12,420        |
| Scheduled caste                          | 18.3         | 6.8           | 5.4        | 10.7              | 5.7                                  | 3.9        | 11,948        |
| Other backward class                     | 24.0         | 8.2           | 5.5        | 18.0              | 5.7                                  | 5.4        | 26,989        |
| None of the above                        | 26.5         | 10.7          | 7.4        | 18.5              | 5.5                                  | 6.2        | 20,345        |
| <b>Education</b>                         |              |               |            |                   |                                      |            |               |
| No schooling                             | 15.6         | 5.9           | 4.6        | 9.7               | 5.3                                  | 3.5        | 32,920        |
| Less than 5 years complete               | 22.1         | 8.5           | 7.5        | 14.7              | 6.8                                  | 6.2        | 8,007         |
| 5-9 years complete                       | 27.2         | 9.6           | 7.1        | 19.9              | 5.7                                  | 6.8        | 16,807        |
| 10 or more years complete                | 35.7         | 12.7          | 6.9        | 27.7              | 5.0                                  | 7.0        | 13,968        |
| <b>Work status</b>                       |              |               |            |                   |                                      |            |               |
| Currently working                        | 22.4         | 8.3           | 5.9        | 14.8              | 5.4                                  | 4.8        | 32,776        |
| Worked in past but currently not working | 19.2         | 7.8           | 6.4        | 14.4              | 5.9                                  | 4.8        | 17,810        |
| Never worked                             | 25.8         | 8.5           | 5.3        | 18.6              | 5.2                                  | 5.9        | 21,116        |
| <b>MPCE quintile</b>                     |              |               |            |                   |                                      |            |               |
| Poorest                                  | 16.0         | 5.4           | 4.4        | 9.6               | 5.3                                  | 3.2        | 14,034        |
| Poorer                                   | 19.9         | 7.8           | 5.8        | 13.3              | 5.2                                  | 4.7        | 14,426        |
| Middle                                   | 22.0         | 8.7           | 5.9        | 15.6              | 5.3                                  | 4.8        | 14,427        |
| Richer                                   | 25.1         | 8.4           | 6.4        | 17.3              | 5.5                                  | 6.6        | 14,587        |
| Richest                                  | 30.7         | 11.3          | 6.8        | 24.0              | 6.2                                  | 6.6        | 14,228        |
| <b>Total</b>                             | <b>22.5</b>  | <b>8.2</b>    | <b>5.9</b> | <b>15.7</b>       | <b>5.5</b>                           | <b>5.1</b> | <b>71,702</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup>Family includes biological family members- father, mother, brother, sister, children and grandchildren.

**Table 7.22 Percentage of older adults with family<sup>1</sup> medical history, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age > 45*    |               |            |                   |                                         |            | Number        |
|---------------------------|--------------|---------------|------------|-------------------|-----------------------------------------|------------|---------------|
|                           | Hypertension | Heart Disease | Stroke     | Diabetes Mellitus | Neurological/<br>Psychiatric Conditions | Cancer     |               |
| <b>India</b>              | <b>22.5</b>  | <b>8.2</b>    | <b>5.9</b> | <b>15.7</b>       | <b>5.5</b>                              | <b>5.1</b> | <b>71,702</b> |
| <b>North</b>              |              |               |            |                   |                                         |            |               |
| Chandigarh                | 39.2         | 13.5          | 4.2        | 30.3              | 7.8                                     | 7.5        | 1,003         |
| Delhi                     | 19.3         | 9.2           | 1.7        | 18.3              | 3.2                                     | 2.0        | 1,315         |
| Haryana                   | 25.6         | 7.1           | 1.4        | 13.8              | 2.8                                     | 3.8        | 1,893         |
| Himachal Pradesh          | 21.3         | 10.2          | 4.4        | 14.0              | 7.6                                     | 5.6        | 1,380         |
| Jammu & Kashmir           | 34.1         | 11.5          | 2.9        | 12.3              | 3.3                                     | 3.1        | 1,603         |
| Punjab                    | 25.8         | 10.6          | 5.6        | 17.9              | 2.9                                     | 6.9        | 2,105         |
| Rajasthan                 | 16.3         | 4.9           | 2.4        | 9.8               | 3.9                                     | 3.8        | 2,233         |
| Uttarakhand               | 15.2         | 7.4           | 2.2        | 10.5              | 3.9                                     | 5.4        | 1,354         |
| <b>Central</b>            |              |               |            |                   |                                         |            |               |
| Chhattisgarh              | 10.0         | 2.1           | 4.5        | 6.5               | 2.8                                     | 2.4        | 2,052         |
| Madhya Pradesh            | 13.0         | 5.9           | 3.7        | 9.3               | 5.8                                     | 3.5        | 2,907         |
| Uttar Pradesh             | 11.8         | 5.0           | 4.6        | 9.1               | 5.0                                     | 4.1        | 4,520         |
| <b>East</b>               |              |               |            |                   |                                         |            |               |
| Bihar                     | 23.9         | 8.3           | 2.9        | 13.6              | 10.1                                    | 4.0        | 3,512         |
| Jharkhand                 | 11.5         | 2.5           | 0.8        | 7.5               | 4.5                                     | 2.2        | 2,450         |
| Odisha                    | 16.2         | 3.1           | 2.6        | 9.5               | 4.1                                     | 3.5        | 2,898         |
| West Bengal               | 33.2         | 17.2          | 17.4       | 19.0              | 7.7                                     | 7.1        | 3,897         |
| <b>Northeast</b>          |              |               |            |                   |                                         |            |               |
| Arunachal Pradesh         | 21.9         | 3.7           | 1.9        | 9.3               | 1.0                                     | 0.9        | 1,212         |
| Assam                     | 41.7         | 5.8           | 4.7        | 12.6              | 5.0                                     | 6.0        | 2,333         |
| Manipur                   | 27.2         | 8.1           | 10.5       | 14.7              | 4.8                                     | 8.4        | 1,362         |
| Meghalaya                 | 25.1         | 2.4           | 4.3        | 10.5              | 1.0                                     | 2.1        | 967           |
| Mizoram                   | 27.1         | 7.8           | 4.2        | 14.3              | 4.5                                     | 19.6       | 1,241         |
| Nagaland                  | 7.9          | 1.0           | 2.5        | 2.6               | 0.5                                     | 1.7        | 1,304         |
| Tripura                   | 19.9         | 5.2           | 8.9        | 10.3              | 2.7                                     | 5.0        | 1,177         |
| <b>West</b>               |              |               |            |                   |                                         |            |               |
| Dadra & Nagar Haveli      | 8.0          | 8.8           | 3.8        | 13.2              | 3.1                                     | 6.6        | 1,073         |
| Daman & Diu               | 11.4         | 7.6           | 3.0        | 18.5              | 4.5                                     | 6.6        | 981           |
| Goa                       | 37.5         | 14.0          | 8.0        | 27.8              | 7.1                                     | 3.8        | 1,418         |
| Gujarat                   | 8.6          | 10.1          | 5.8        | 14.4              | 5.7                                     | 7.6        | 2,308         |
| Maharashtra               | 24.9         | 10.0          | 8.3        | 16.3              | 4.1                                     | 5.4        | 3,952         |
| <b>South</b>              |              |               |            |                   |                                         |            |               |
| Andaman & Nicobar Islands | 22.2         | 3.3           | 2.5        | 15.2              | 3.0                                     | 2.4        | 1,240         |
| Andhra Pradesh            | 23.0         | 4.5           | 3.4        | 16.6              | 3.2                                     | 2.4        | 2,656         |
| Karnataka                 | 31.4         | 11.9          | 9.2        | 25.1              | 7.6                                     | 8.8        | 2,375         |
| Kerala                    | 54.5         | 20.5          | 7.8        | 51.9              | 7.9                                     | 15.0       | 2,460         |
| Lakshadweep               | 42.7         | 7.3           | 4.6        | 34.2              | 2.0                                     | 3.4        | 1,130         |
| Puducherry                | 30.3         | 8.4           | 1.8        | 26.9              | 3.2                                     | 3.1        | 1,422         |
| Tamil Nadu                | 23.3         | 4.4           | 3.7        | 22.4              | 4.4                                     | 3.3        | 3,520         |
| Telangana                 | 22.3         | 3.3           | 2.2        | 13.1              | 3.2                                     | 3.3        | 2,449         |

Notes

\* Including spouse irrespective of age

<sup>1</sup>Family includes biological family members- father, mother, brother, sister, children and grandchildren.

## 7.4 SELF-REPORTED DIAGNOSED ORGAN-RELATED DISEASES

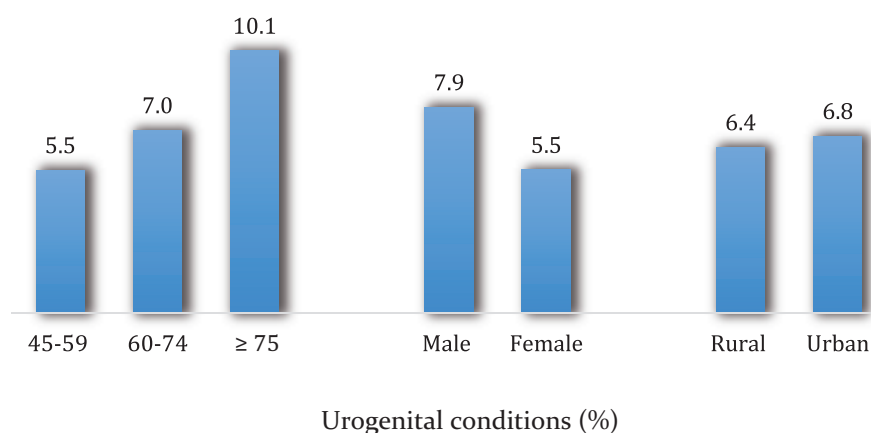
Ageing is also associated with decrease in functional capacity of different body organ systems as well as the sensory system. This section focuses on health conditions associated with the urogenital system along with the sensory system such as the eyes (vision), ears (hearing), and mouth (oral health).

### 7.4.1 Urogenital diseases or conditions

Urogenital diseases are conditions that usually affect the urinary system and genital area. These include nephritis and nephrosis, renal stones, benign prostatic hypertrophy, incontinence, kidney failure, genital infections, and urogenital prolapse. In the LASI, information was collected on chronic urogenital diseases or conditions including chronic renal failure, incontinence, kidney stones, and benign prostatic hyperplasia (BPH) in men. Further, information is also collected on whether the respondent was on dialysis in the preceding 2 years of survey. Symptomatic information of urinary incontinence while sneezing, coughing, laughing, or lifting heavy weights was also gathered.

Table 7.23 shows the prevalence of urogenital diseases or conditions by background characteristics. Overall, 6.5% of older adults age 45 and above are diagnosed with any urogenital condition: 0.6% reported chronic renal failure, 2.6% reported kidney stones, and 3.1% reported urinary incontinence. The self-reported prevalence of diagnosed any urogenital conditions, incontinence, and chronic renal failure is higher in elderly age 60 and above (7.7%, 4.1%, and 0.8%, respectively) than in older adults age 45-59 (5.5%, 2.2%, and 0.4%, respectively). Among the elderly age 60 and above, the prevalence of any urogenital condition is higher among men (9.6%) than women (6%) and Muslims (9.7%) than religions other than Hindu, Muslim and Christian (4.8%).

**Figure 7.11 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18**

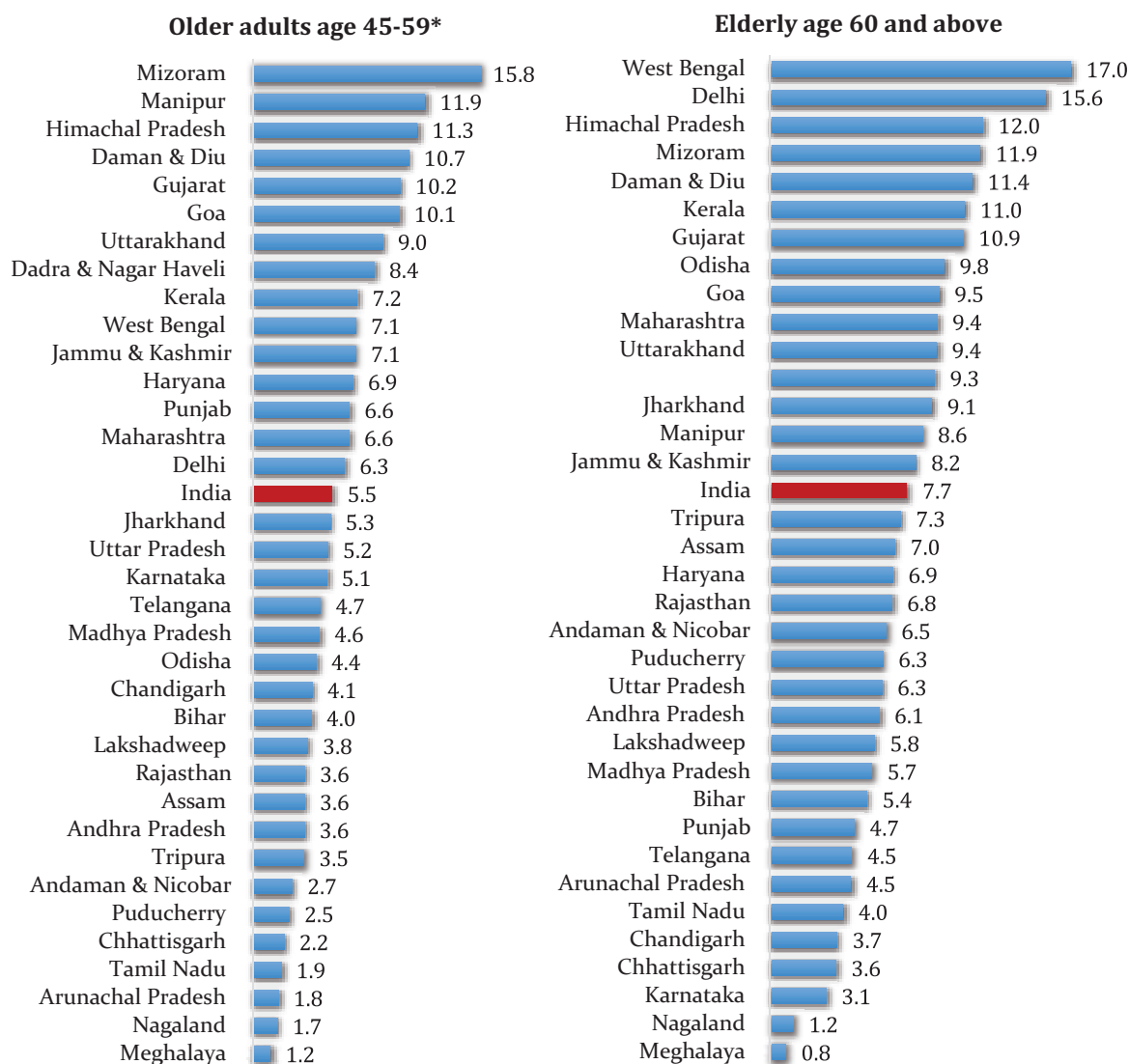


\* Including spouse irrespective of age

Table 7.24 presents the state-wise prevalence of urogenital diseases. The self-reported prevalence of any urogenital condition among older adults age 45 and above is more than 10% in Mizoram (14%), Himachal Pradesh (12%), West Bengal (11%), Gujarat (11%), Daman & Diu (11%), and Manipur (10%). Among elderly age 60 and above, the prevalence rate ranges from 17% in West Bengal to less than 1% in Meghalaya. Among the elderly age 60 and above, the self-reported prevalence of chronic renal failure is highest in the state of Mizoram (6%) followed by that in Goa (2.4%). Among elderly age 60 and above, the self-reported prevalence of urinary incontinence is highest in West Bengal (13%) followed by that in Delhi (11%), Odisha (7.4%), Jharkhand (6.6%), Dadra & Nagar Haveli (5.1%), Tripura (5.1%), and Kerala (5%). The self-reported prevalence of kidney stones is highest in Manipur (8.5%) followed by that in Daman & Diu (8.2%), Himachal Pradesh (7.4%), and Gujarat (7.1%).



**Figure 7.12 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

Figure 7.13 shows the state-wise self-reported prevalence of benign prostatic hyperplasia (BPH) among elderly men. Overall, the benign prostatic hyperplasia (BPH) is prevalent in 2.1% of the elderly men age 60 and above. The prevalence of BPH among elderly men age 60 and above is highest in Arunachal Pradesh (7.4%) followed by that in West Bengal (4.4%), Jammu & Kashmir (3.8%), Kerala (3.8%), and Gujarat (3.7%).

**Figure 7.13 Self-reported prevalence (%) of diagnosed benign prostatic hypertrophy (BPH) among elderly men age 60 and above, states/UTs, LASI Wave 1, 2017-18**

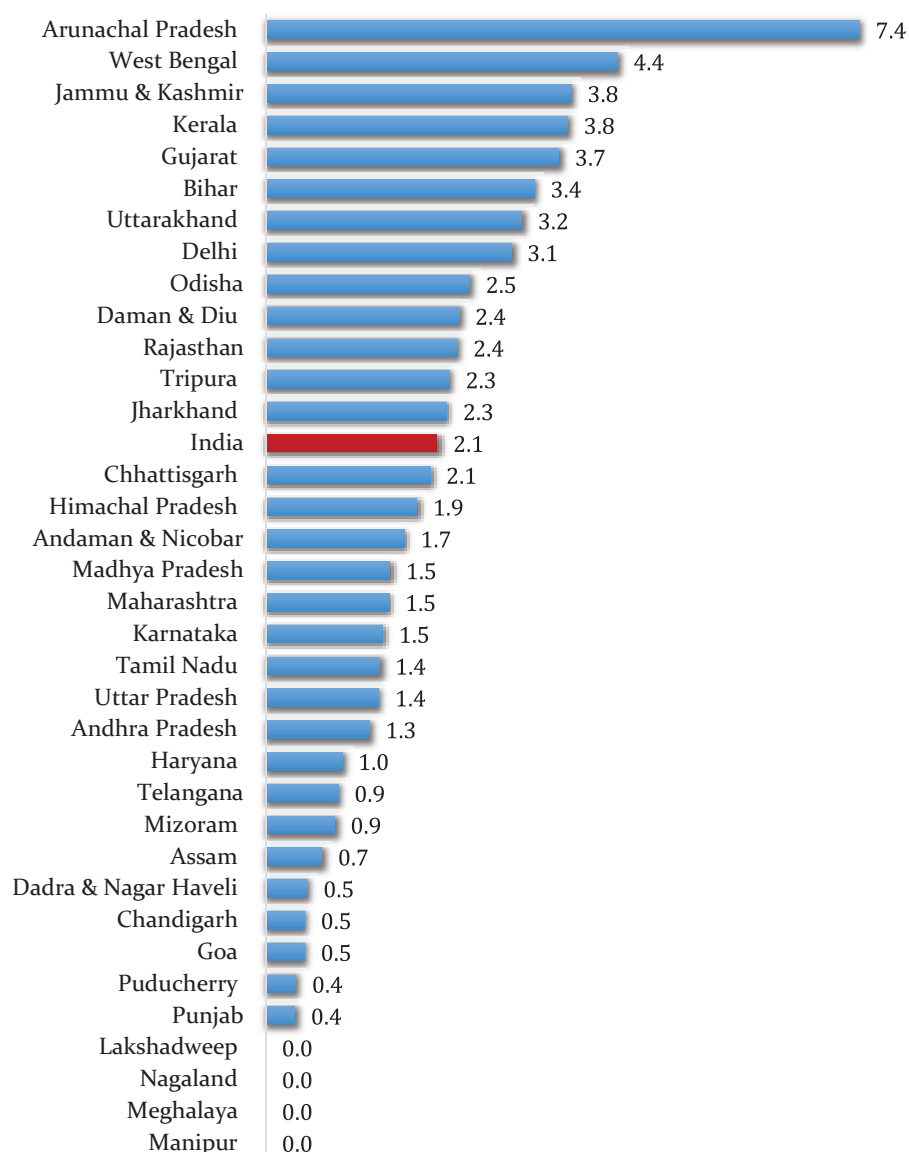


**Table 7.23 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Age 45-59*            |               |              |                                       |        |                       | Age ≥ 60      |              |                                       |        |                       |               | Total        |                                       |        |  |
|---------------------------------------|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|--|
|                                       | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number |  |
| Place of residence                    |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| Rural                                 | 0.4                   | 2.6           | 2.1          | 5.3                                   | 25,742 | 0.7                   | 2.2           | 4.2          | 7.5                                   | 20,687 | 0.6                   | 2.4           | 3.1          | 6.4                                   | 46,429 |  |
| Urban                                 | 0.5                   | 2.8           | 2.5          | 5.8                                   | 14,924 | 1.1                   | 2.9           | 3.8          | 8.2                                   | 10,689 | 0.7                   | 2.9           | 3.0          | 6.8                                   | 25,613 |  |
| Sex                                   |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| Male                                  | 0.5                   | 3.3           | 1.6          | 6.1                                   | 15,422 | 1.2                   | 3.0           | 4.4          | 9.6                                   | 15,041 | 0.8                   | 3.1           | 3.0          | 7.9                                   | 30,463 |  |
| Female                                | 0.4                   | 2.3           | 2.6          | 5.1                                   | 25,244 | 0.5                   | 1.9           | 3.8          | 6.0                                   | 16,335 | 0.5                   | 2.2           | 3.1          | 5.5                                   | 41,579 |  |
| Marital status                        |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| Currently married                     | 0.5                   | 2.9           | 2.3          | 5.7                                   | 35,373 | 1.0                   | 3.0           | 3.9          | 8.3                                   | 19,866 | 0.7                   | 2.9           | 2.9          | 6.7                                   | 55,239 |  |
| Widowed                               | 0.4                   | 1.6           | 2.0          | 4.1                                   | 3,863  | 0.5                   | 1.5           | 4.4          | 6.7                                   | 10,688 | 0.5                   | 1.5           | 3.9          | 6.1                                   | 14,551 |  |
| Divorced/ Separated/ Deserted/ Others | 0.2                   | 1.2           | 2.2          | 3.7                                   | 1,430  | 0.6                   | 2.8           | 3.4          | 7.2                                   | 822    | 0.3                   | 1.8           | 2.6          | 5.0                                   | 2,252  |  |
| Living arrangement                    |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| Living alone                          | -                     | 2.1           | 2.3          | 4.4                                   | 689    | 0.5                   | 1.2           | 2.8          | 4.6                                   | 1,619  | 0.4                   | 1.4           | 2.7          | 4.6                                   | 2,308  |  |
| Living with spouse and/ or others     | 0.5                   | 2.5           | 1.8          | 4.8                                   | 4,528  | 1.2                   | 2.6           | 4.0          | 8.3                                   | 6,165  | 0.9                   | 2.6           | 3.1          | 6.8                                   | 10,693 |  |
| Living with spouse and children       | 0.5                   | 3.0           | 2.3          | 5.9                                   | 30,191 | 0.9                   | 3.2           | 3.8          | 8.3                                   | 13,461 | 0.6                   | 3.0           | 2.8          | 6.6                                   | 43,652 |  |
| Living with children and others       | 0.5                   | 1.5           | 2.0          | 3.9                                   | 4,075  | 0.6                   | 1.7           | 4.9          | 7.4                                   | 8,413  | 0.5                   | 1.6           | 4.0          | 6.4                                   | 12,488 |  |
| Living with others only               | 0.2                   | 0.9           | 2.6          | 4.0                                   | 1,183  | 0.5                   | 1.5           | 3.7          | 6.0                                   | 1,718  | 0.4                   | 1.3           | 3.3          | 5.2                                   | 2,901  |  |
| Religion                              |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| Hindu                                 | 0.4                   | 2.6           | 2.2          | 5.3                                   | 29,844 | 0.8                   | 2.4           | 4.0          | 7.6                                   | 22,976 | 0.6                   | 2.5           | 3.0          | 6.4                                   | 52,820 |  |
| Muslim                                | 0.3                   | 2.6           | 3.1          | 6.0                                   | 4,924  | 1.4                   | 2.6           | 6.0          | 9.7                                   | 3,720  | 0.8                   | 2.6           | 4.3          | 7.6                                   | 8,644  |  |
| Christian                             | 0.8                   | 4.2           | 1.2          | 6.2                                   | 4,058  | 0.7                   | 2.0           | 2.6          | 6.5                                   | 3,139  | 0.7                   | 3.2           | 1.8          | 6.3                                   | 7,197  |  |
| Others                                | 0.7                   | 4.6           | 2.1          | 6.9                                   | 1,840  | 0.8                   | 2.0           | 2.0          | 4.8                                   | 1,541  | 0.7                   | 3.3           | 2.1          | 5.9                                   | 3,381  |  |
| Caste/tribe                           |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| Scheduled tribe                       | 0.3                   | 2.2           | 1.4          | 3.9                                   | 7,325  | 0.7                   | 2.1           | 3.5          | 5.9                                   | 5,160  | 0.5                   | 2.1           | 2.3          | 4.8                                   | 12,485 |  |
| Scheduled caste                       | 0.6                   | 2.7           | 2.1          | 5.5                                   | 6,886  | 0.8                   | 1.8           | 4.5          | 7.2                                   | 5,124  | 0.7                   | 2.3           | 3.1          | 6.3                                   | 12,010 |  |
| Other backward class                  | 0.4                   | 2.4           | 2.1          | 5.1                                   | 15,250 | 0.7                   | 2.4           | 3.1          | 6.6                                   | 11,851 | 0.6                   | 2.4           | 2.6          | 5.8                                   | 27,101 |  |
| None of the above                     | 0.4                   | 3.4           | 2.9          | 6.7                                   | 11,205 | 1.1                   | 3.0           | 5.6          | 10.3                                  | 9,241  | 0.7                   | 3.2           | 4.1          | 8.4                                   | 20,446 |  |
| Education                             |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |
| No schooling                          | 0.5                   | 2.4           | 1.9          | 4.6                                   | 16,277 | 0.6                   | 1.8           | 3.8          | 6.3                                   | 16,853 | 0.5                   | 2.1           | 2.9          | 5.5                                   | 33,130 |  |
| Less than 5 years complete            | 0.6                   | 3.2           | 2.9          | 6.5                                   | 4,263  | 1.4                   | 3.4           | 6.6          | 11.1                                  | 3,775  | 1.0                   | 3.3           | 4.7          | 8.7                                   | 8,038  |  |
| 5-9 years complete                    | 0.4                   | 3.1           | 2.0          | 5.9                                   | 10,870 | 1.0                   | 2.8           | 3.9          | 8.2                                   | 5,995  | 0.6                   | 3.0           | 2.7          | 6.8                                   | 16,865 |  |
| 10 or more years complete             | 0.4                   | 2.6           | 2.8          | 6.3                                   | 9,256  | 1.3                   | 3.6           | 3.4          | 9.7                                   | 4,753  | 0.7                   | 3.0           | 3.0          | 7.5                                   | 14,009 |  |

Continued

| Continued                                | Age 45-59*                 |     |                       |               |              |                                       |        |                       |               |              | Age ≥ 60                              |        |                       |               |              |                                       |        |                       |               |              | Total                                 |        |  |  |
|------------------------------------------|----------------------------|-----|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|--|--|
|                                          | Background characteristics |     | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number |  |  |
| Work status                              |                            |     |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |  |
| Currently working                        |                            | 0.3 | 2.6                   | 2.3           | 5.7          | 23,615                                | 0.8    | 2.5                   | 2.9           | 6.7          | 9,284                                 | 0.5    | 2.6                   | 2.5           | 6.0          | 32,899                                |        |                       |               |              |                                       |        |  |  |
| Worked in past but currently not working |                            | 0.7 | 4.2                   | 2.2           | 6.8          | 4,565                                 | 1.0    | 2.5                   | 4.8           | 8.9          | 13,326                                | 0.9    | 2.9                   | 4.2           | 8.4          | 17,891                                |        |                       |               |              |                                       |        |  |  |
| Never worked                             |                            | 0.5 | 2.2                   | 2.1           | 4.6          | 12,486                                | 0.7    | 2.3                   | 4.3           | 6.9          | 8,766                                 | 0.6    | 2.2                   | 3.1           | 5.6          | 21,252                                |        |                       |               |              |                                       |        |  |  |
| MPCE quintile                            |                            |     |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |  |  |
| Poorest                                  |                            | 0.4 | 1.7                   | 1.5           | 3.6          | 7,649                                 | 0.9    | 1.8                   | 3.7           | 6.5          | 6,462                                 | 0.7    | 1.7                   | 2.6           | 5.0          | 14,111                                |        |                       |               |              |                                       |        |  |  |
| Poorer                                   |                            | 0.3 | 3.0                   | 1.7           | 5.2          | 8,032                                 | 0.4    | 2.1                   | 3.8           | 6.7          | 6,460                                 | 0.3    | 2.6                   | 2.7           | 5.9          | 14,492                                |        |                       |               |              |                                       |        |  |  |
| Middle                                   |                            | 0.4 | 2.4                   | 2.2           | 5.1          | 8,100                                 | 0.9    | 2.5                   | 4.6           | 8.2          | 6,396                                 | 0.6    | 2.4                   | 3.3           | 6.5          | 14,496                                |        |                       |               |              |                                       |        |  |  |
| Richer                                   |                            | 0.6 | 3.4                   | 2.2           | 6.2          | 8,494                                 | 1.0    | 2.8                   | 4.1           | 8.1          | 6,156                                 | 0.7    | 3.1                   | 3.0           | 7.1          | 14,650                                |        |                       |               |              |                                       |        |  |  |
| Richest                                  |                            | 0.6 | 3.1                   | 3.6           | 7.3          | 8,391                                 | 1.2    | 3.2                   | 4.4           | 9.4          | 5,902                                 | 0.8    | 3.1                   | 3.9           | 8.2          | 14,293                                |        |                       |               |              |                                       |        |  |  |
| Total                                    |                            | 0.4 | 2.7                   | 2.2           | 5.5          | 40,666                                | 0.8    | 2.4                   | 4.1           | 7.7          | 31,376                                | 0.6    | 2.6                   | 3.1           | 6.5          | 72,042                                |        |                       |               |              |                                       |        |  |  |

Note

\* Including spouse irrespective of age, "-" indicates less number of cases/no cases.

<sup>1</sup>Any urogenital condition includes chronic renal failure, incontinence, kidney stone and Benign Prostate Hypertrophy-BPH (only among males)

**Table 7.24 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/union territory | Age 45-59*            |               |              |                                       |               |  | Age ≥ 60              |               |              |                                       |               |  | Total                 |               |              |                                       |
|-----------------------|-----------------------|---------------|--------------|---------------------------------------|---------------|--|-----------------------|---------------|--------------|---------------------------------------|---------------|--|-----------------------|---------------|--------------|---------------------------------------|
|                       | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number        |  | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number        |  | Chronic renal failure | Kidney Stones | Incontinence | Any urogenital condition <sup>1</sup> |
| <b>India</b>          | <b>0.4</b>            | <b>2.7</b>    | <b>2.2</b>   | <b>5.5</b>                            | <b>40,666</b> |  | <b>0.8</b>            | <b>2.4</b>    | <b>4.1</b>   | <b>7.7</b>                            | <b>31,376</b> |  | <b>0.6</b>            | <b>2.6</b>    | <b>3.1</b>   | <b>6.5</b>                            |
| <b>North</b>          |                       |               |              |                                       |               |  |                       |               |              |                                       |               |  |                       |               |              | <b>72,041</b>                         |
| Chandigarh            | [0.3]                 | 2.8           | 1.0          | 4.1                                   | 624           |  | [0.5]                 | 2.1           | 1.1          | 3.7                                   | 388           |  | [0.4]                 | 2.5           | 1.0          | 3.9                                   |
| Delhi                 | 1.1                   | 1.0           | 4.5          | 6.3                                   | 822           |  | 1.2                   | 3.2           | 11.0         | 15.6                                  | 494           |  | 1.1                   | 1.8           | 6.9          | 9.8                                   |
| Haryana               | 0.6                   | 4.6           | 0.9          | 6.9                                   | 1,048         |  | 0.4                   | 4.7           | 1.8          | 6.9                                   | 847           |  | 0.5                   | 4.7           | 1.3          | 6.9                                   |
| Himachal Pradesh      | 0.4                   | 9.2           | 2.0          | 11.3                                  | 765           |  | [0.4]                 | 7.4           | 4.1          | 12.0                                  | 618           |  | 0.4                   | 8.3           | 3.0          | 11.6                                  |
| Jammu & Kashmir       | -                     | 4.3           | 2.3          | 7.1                                   | 881           |  | [0.3]                 | 3.3           | 3.7          | 8.2                                   | 730           |  | [0.1]                 | 3.8           | 3.0          | 7.6                                   |
| Punjab                | [0.1]                 | 5.5           | 1.2          | 6.6                                   | 1,112         |  | [0.2]                 | 2.5           | 2.0          | 4.7                                   | 1,004         |  | [0.1]                 | 4.1           | 1.6          | 5.7                                   |
| Rajasthan             | [0.1]                 | 2.7           | 0.7          | 3.6                                   | 1,160         |  | 0.8                   | 3.0           | 2.7          | 6.8                                   | 1,076         |  | 0.5                   | 2.9           | 1.7          | 5.2                                   |
| Uttarakhand           | 0.6                   | 6.4           | 2.0          | 9.0                                   | 715           |  | [0.5]                 | 4.8           | 3.4          | 9.4                                   | 641           |  | 0.5                   | 5.6           | 2.7          | 9.2                                   |
| <b>Central</b>        |                       |               |              |                                       |               |  |                       |               |              |                                       |               |  |                       |               |              | <b>1,356</b>                          |
| Chhattisgarh          | [0.1]                 | 1.2           | 0.6          | 2.2                                   | 1,275         |  | [0.3]                 | 0.8           | 1.6          | 3.6                                   | 779           |  | 0.2                   | 1.0           | 1.0          | 2.7                                   |
| Madhya Pradesh        | 0.7                   | 1.9           | 1.8          | 4.6                                   | 1,598         |  | 0.8                   | 1.8           | 3.4          | 5.7                                   | 1,313         |  | 0.7                   | 1.9           | 2.6          | 5.1                                   |
| Uttar Pradesh         | 0.5                   | 2.5           | 2.0          | 5.2                                   | 2,395         |  | 0.7                   | 2.2           | 3.0          | 6.3                                   | 2,166         |  | 0.6                   | 2.3           | 2.5          | 5.7                                   |
| <b>East</b>           |                       |               |              |                                       |               |  |                       |               |              |                                       |               |  |                       |               |              | <b>4,561</b>                          |
| Bihar                 | 0.3                   | 1.8           | 1.6          | 4.0                                   | 1,708         |  | 0.6                   | 1.2           | 2.3          | 5.4                                   | 1,806         |  | 0.4                   | 1.5           | 2.0          | 4.8                                   |
| Jharkhand             | [0.3]                 | 2.1           | 1.8          | 5.3                                   | 1,294         |  | [0.2]                 | 1.4           | 6.6          | 9.1                                   | 1,167         |  | 0.2                   | 1.7           | 4.1          | 7.2                                   |
| Odisha                | 0.2                   | 0.8           | 2.9          | 4.4                                   | 1,674         |  | 0.6                   | 1.2           | 7.4          | 9.8                                   | 1,235         |  | 0.4                   | 1.0           | 4.9          | 6.8                                   |
| West Bengal           | 0.7                   | 1.4           | 4.9          | 7.1                                   | 2,384         |  | 1.3                   | 1.1           | 13.4         | 17.0                                  | 1,539         |  | 0.9                   | 1.3           | 8.3          | 11.1                                  |
| <b>Northeast</b>      |                       |               |              |                                       |               |  |                       |               |              |                                       |               |  |                       |               |              | <b>3,923</b>                          |
| Arunachal Pradesh     | -                     | 0.7           | [0.3]        | 1.8                                   | 896           |  | [0.1]                 | [1.3]         | -            | 4.5                                   | 318           |  | [0.1]                 | 0.9           | [0.2]        | 2.4                                   |
| Assam                 | [0.3]                 | 1.8           | 1.6          | 3.6                                   | 1,548         |  | 1.2                   | 1.7           | 4.5          | 7.0                                   | 814           |  | 0.6                   | 1.8           | 2.7          | 4.8                                   |
| Manipur               | [0.2]                 | 11.7          | -            | 11.9                                  | 760           |  | -                     | 8.5           | [0.1]        | 8.6                                   | 605           |  | [0.1]                 | 10.2          | -            | 10.3                                  |
| Meghalaya             | -                     | 1.2           | -            | [1.2]                                 | 556           |  | -                     | [0.8]         | -            | 0.8                                   | 411           |  | -                     | 1.0           | -            | 1.0                                   |
| Mizoram               | 8.2                   | 2.9           | 4.9          | 15.8                                  | 714           |  | 6.0                   | 2.2           | 3.7          | 11.9                                  | 531           |  | 7.2                   | 2.6           | 4.4          | 14.0                                  |
| Nagaland              | -                     | 1.7           | -            | 1.7                                   | 708           |  | -                     | 1.2           | -            | 1.2                                   | 606           |  | -                     | 1.5           | -            | 1.5                                   |
| Tripura               | [0.4]                 | 1.4           | 2.2          | 3.5                                   | 732           |  | 1.3                   | [0.9]         | 5.1          | 7.3                                   | 460           |  | 0.7                   | 1.2           | 3.3          | 5.0                                   |
| <b>West</b>           |                       |               |              |                                       |               |  |                       |               |              |                                       |               |  |                       |               |              | <b>1,192</b>                          |
| Dadra & Nagar Haveli  | 1.2                   | 5.4           | 2.0          | 8.4                                   | 635           |  | [0.9]                 | 3.8           | 5.1          | 9.3                                   | 450           |  | 1.1                   | 4.7           | 3.2          | 8.7                                   |
| Daman & Diu           | 1.5                   | 7.1           | 2.5          | 10.7                                  | 557           |  | 1.8                   | 8.2           | 1.5          | 11.4                                  | 429           |  | 1.6                   | 7.6           | 2.0          | 11.1                                  |
| Goa                   | 2.1                   | 7.8           | 1.1          | 10.1                                  | 787           |  | 2.4                   | 6.7           | 1.0          | 9.5                                   | 634           |  | 2.3                   | 7.3           | 1.0          | 9.8                                   |
| Gujarat               | 1.0                   | 8.0           | 1.8          | 10.2                                  | 1,344         |  | 1.6                   | 7.1           | 1.8          | 10.9                                  | 982           |  | 1.3                   | 7.6           | 1.8          | 10.5                                  |
| Maharashtra           | 0.4                   | 4.3           | 1.9          | 6.6                                   | 2,176         |  | 1.0                   | 4.3           | 4.5          | 9.4                                   | 1,784         |  | 0.7                   | 4.3           | 3.2          | 8.0                                   |

Continued

Continued

| State/union territory     | Age 45-59*            |               |              |                                       |        | Age ≥ 60              |               |              |                                       |        | Total                 |               |              |                                       |        |
|---------------------------|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|-----------------------|---------------|--------------|---------------------------------------|--------|
|                           | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney stones | Incontinence | Any urogenital condition <sup>1</sup> | Number | Chronic renal failure | Kidney Stones | Incontinence | Any urogenital condition <sup>1</sup> | Number |
| <b>South</b>              |                       |               |              |                                       |        |                       |               |              |                                       |        |                       |               |              |                                       |        |
| Andaman & Nicobar Islands | 0.3                   | 1.0           | 1.2          | 2.7                                   | 720    | 1.6                   | 2.1           | 1.9          | 6.5                                   | 521    | 0.8                   | 1.4           | 1.5          | 4.3                                   | 1,241  |
| Andhra Pradesh            | 0.6                   | 2.1           | 0.8          | 3.6                                   | 1,568  | 1.3                   | 2.2           | 2.1          | 6.1                                   | 1,101  | 0.9                   | 2.2           | 1.4          | 4.6                                   | 2,669  |
| Karnataka                 | 0.4                   | 1.6           | 2.8          | 5.1                                   | 1,410  | 1.0                   | 0.9           | 1.5          | 3.1                                   | 1,002  | 0.6                   | 1.3           | 2.3          | 4.3                                   | 2,412  |
| Kerala                    | [0.3]                 | 4.7           | 2.4          | 7.2                                   | 1,276  | 0.7                   | 4.3           | 5.0          | 11.0                                  | 1,206  | 0.5                   | 4.5           | 3.8          | 9.2                                   | 2,482  |
| Lakshadweep               | [0.4]                 | 1.2           | 2.0          | 3.8                                   | 637    | [0.2]                 | 2.3           | 3.7          | 5.8                                   | 500    | [0.3]                 | 1.8           | 2.8          | 4.8                                   | 1,137  |
| Puducherry                | [0.3]                 | 0.6           | 1.6          | 2.5                                   | 787    | 1.1                   | 3.4           | 4.0          | 6.3                                   | 638    | 0.7                   | 1.9           | 2.7          | 4.3                                   | 1,425  |
| Tamil Nadu                | [0.3]                 | 1.1           | 0.4          | 1.9                                   | 1,994  | 1.0                   | 1.1           | 1.8          | 4.0                                   | 1,530  | 0.6                   | 1.1           | 1.1          | 2.9                                   | 3,524  |
| Telangana                 | 0.6                   | 2.8           | 1.2          | 4.7                                   | 1,406  | 0.8                   | 1.7           | 2.0          | 4.5                                   | 1,051  | 0.7                   | 2.3           | 1.6          | 4.6                                   | 2,457  |

Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

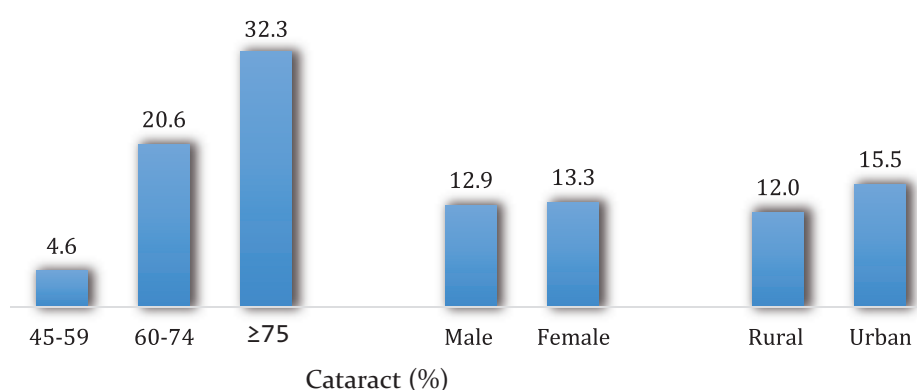
<sup>1</sup> Any urogenital condition includes chronic renal failure, incontinence, kidney stone and Benign Prostate Hypertrophy-BPH (only among males).

### 7.4.2 Visual impairment and eye-related problems

All the LASI survey participants were asked if they have been diagnosed with any eye or vision-related conditions such as cataracts, glaucoma and refractive errors (presbyopia, myopia, and hypermetropia). Further, detailed information was collected: one eye or both eyes have been affected, treatment was taken, and the quality of vision to see nearly placed objects as well as at a distance.

Table 7.25 presents the prevalence of visual impairment and eye-related problems by background characteristics. Overall, the self-reported prevalence of any eye- or vision-related condition among older adults age 45 and above in India is 46%. Majority of visual impairment conditions is due to refractive errors, with more than one-third (35%) of older adults age 45 and above reporting refractive errors and 13% reporting cataract. The self-reported prevalence of cataract (reported surgery) is almost five times higher among elderly age 60 and above (23%) than among older adults age 45-59 (4.6%). Almost a third of older old (32%) age 75+ have been diagnosed with cataract. Overall, the self-reported prevalence of diagnosed glaucoma is 2%, and the rate is higher among elderly age 60 and above (2.5%) than among older adults age 45-59 (1.3%). Eye or vision-related conditions are more prevalent among urban older adults than their rural counterparts, and this urban-rural difference is more pronounced in refractory errors. Among elderly age 60 and above, the prevalence of cataract is higher among women (25%) than men (21%), whereas the prevalence of refractive errors is slightly higher among men (36%) than women (35%). The prevalence of refractive errors increases with education and MPCE quintiles, whereas the prevalence of cataract and glaucoma does not show any pattern with education and MPCE quintiles.

**Figure 7.14 Self-reported prevalence (%) of diagnosed cataract among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

The prevalence of visual impairment and eye-related problems by states/UTs in India is presented in Table 7.26. More than two-thirds of older adults age 45 and above in Punjab (78%), Chandigarh (76%), Kerala (68%), Daman and Diu (67%), and Goa (66%) reported eye- or vision-related conditions. In contrast, only less than a quarter reported these conditions in Nagaland (24%) and Chhattisgarh (23%). In most of the states/UTs, one in every ten older adults age 45 and above reported that they have been diagnosed with cataract. More than quarter of the elderly age 60 and above reported cataract in Daman & Diu (44%), Gujarat (44%), Maharashtra (29%), Kerala (28%), Himachal Pradesh (27%), Uttarakhand (26%), Uttar Pradesh (26%), and Tamil Nadu (25%). The self-reported prevalence of diagnosed glaucoma among elderly age 60 and above is higher in Andhra Pradesh (5.2%), Assam (4.9%), Telangana (4.7%), and Andaman & Nicobar (4.5%).



**Figure 7.15 Self-reported prevalence (%) of cataract among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**

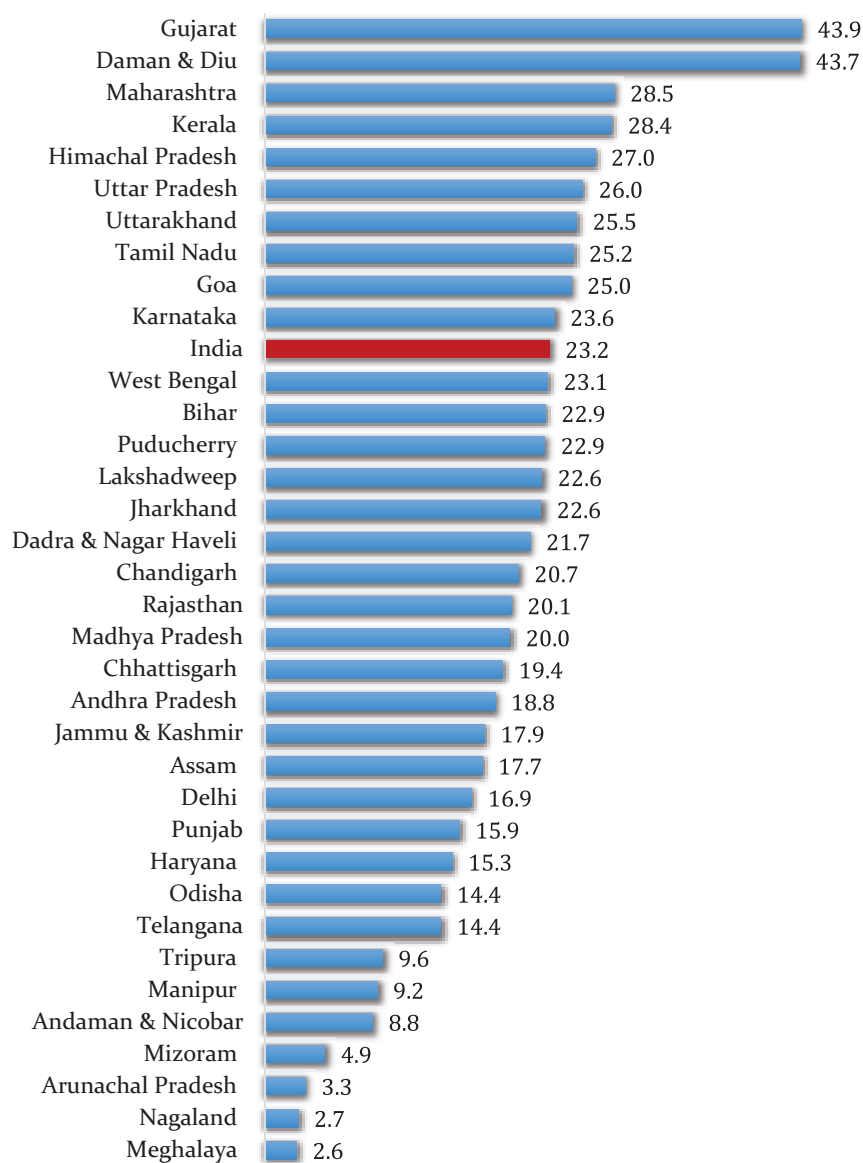


**Table 7.25 Self-reported prevalence (%) of visual impairment or any eye problem among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59* |                                |          |                 |        |          | Age ≥ 60                       |          |                 |        |          |                                | Total    |                 |        |
|---------------------------------------------|------------|--------------------------------|----------|-----------------|--------|----------|--------------------------------|----------|-----------------|--------|----------|--------------------------------|----------|-----------------|--------|
|                                             | Cataract   | Refractive errors <sup>1</sup> | Glaucoma | Any eye problem | Number | Cataract | Refractive errors <sup>1</sup> | Glaucoma | Any eye problem | Number | Cataract | Refractive errors <sup>1</sup> | Glaucoma | Any eye problem | Number |
| <b>Place of residence</b>                   |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Rural                                       | 4.3        | 28.3                           | 1.3      | 33.1            | 25,748 | 20.5     | 31.4                           | 2.4      | 49.4            | 20,691 | 12.0     | 29.8                           | 1.8      | 40.9            | 46,439 |
| Urban                                       | 5.2        | 45.0                           | 1.1      | 49.7            | 14,924 | 29.8     | 45.0                           | 2.6      | 69.7            | 10,687 | 15.5     | 45.0                           | 1.8      | 58.1            | 25,611 |
| <b>Sex</b>                                  |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Male                                        | 3.9        | 37.1                           | 1.3      | 41.4            | 15,423 | 21.3     | 36.1                           | 2.4      | 54.3            | 15,041 | 12.9     | 36.6                           | 1.9      | 48.1            | 30,464 |
| Female                                      | 5.0        | 32.0                           | 1.2      | 37.1            | 25,249 | 25.0     | 34.8                           | 2.5      | 56.3            | 16,337 | 13.3     | 33.2                           | 1.8      | 45.1            | 41,586 |
| <b>Marital status</b>                       |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Currently married                           | 4.2        | 34.2                           | 1.2      | 38.7            | 35,377 | 20.5     | 35.2                           | 2.1      | 52.9            | 19,864 | 10.3     | 34.6                           | 1.6      | 44.0            | 55,241 |
| Widowed                                     | 7.5        | 32.9                           | 1.4      | 40.1            | 3,864  | 27.8     | 35.9                           | 3.0      | 59.8            | 10,692 | 23.1     | 35.2                           | 2.6      | 55.2            | 14,556 |
| Divorced/Separated/Deserted/<br>Others      | 7.4        | 29.9                           | 1.7      | 35.4            | 1,431  | 24.0     | 32.8                           | 2.2      | 50.7            | 822    | 13.4     | 31.0                           | 1.9      | 41.0            | 2,253  |
| <b>Living arrangement</b>                   |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Living alone                                | 8.6        | 35.9                           | 2.2      | 44.7            | 689    | 28.2     | 35.1                           | 3.0      | 58.7            | 1,620  | 23.8     | 35.3                           | 2.8      | 55.6            | 2,309  |
| Living with spouse and/or<br>others         | 5.0        | 33.7                           | 1.5      | 39.0            | 4,526  | 21.5     | 33.5                           | 2.4      | 52.4            | 6,161  | 14.7     | 33.6                           | 2.0      | 46.8            | 10,687 |
| Living with spouse and children             | 4.1        | 34.2                           | 1.2      | 38.6            | 30,197 | 20.0     | 36.1                           | 2.0      | 53.2            | 13,463 | 9.1      | 34.8                           | 1.5      | 43.2            | 43,660 |
| Living with children and others             | 7.8        | 33.9                           | 1.5      | 40.7            | 4,076  | 28.0     | 36.3                           | 2.9      | 60.3            | 8,417  | 22.2     | 35.6                           | 2.5      | 54.7            | 12,493 |
| Living with others only                     | 4.5        | 27.9                           | 1.2      | 33.0            | 1,184  | 24.3     | 33.0                           | 2.8      | 53.8            | 1,717  | 16.9     | 31.1                           | 2.2      | 45.9            | 2,901  |
| <b>Religion</b>                             |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Hindu                                       | 4.4        | 32.7                           | 1.3      | 37.3            | 29,851 | 23.4     | 34.3                           | 2.6      | 54.7            | 22,976 | 13.2     | 33.4                           | 1.9      | 45.3            | 52,827 |
| Muslim                                      | 5.5        | 37.0                           | 1.2      | 42.8            | 4,924  | 24.6     | 36.1                           | 2.2      | 56.1            | 3,720  | 13.8     | 36.6                           | 1.7      | 48.6            | 8,644  |
| Christian                                   | 7.2        | 31.5                           | 1.2      | 39.2            | 4,058  | 16.7     | 37.4                           | 1.3      | 50.3            | 3,140  | 11.4     | 34.1                           | 1.2      | 44.1            | 7,198  |
| Others                                      | 4.2        | 55.8                           | 1.3      | 59.2            | 1,839  | 19.5     | 56.1                           | 1.7      | 70.6            | 1,542  | 11.6     | 55.9                           | 1.5      | 64.7            | 3,381  |
| <b>Caste/tribe</b>                          |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Scheduled tribe                             | 2.7        | 18.4                           | 0.9      | 21.1            | 7,327  | 13.9     | 24.1                           | 2.0      | 35.9            | 5,159  | 7.6      | 20.9                           | 1.4      | 27.6            | 12,486 |
| Scheduled caste                             | 4.9        | 31.5                           | 1.5      | 36.7            | 6,888  | 22.5     | 31.7                           | 2.6      | 52.3            | 5,130  | 12.9     | 31.6                           | 2.0      | 43.8            | 12,018 |
| Other backward class                        | 4.6        | 32.6                           | 1.2      | 37.5            | 15,252 | 23.4     | 34.6                           | 2.2      | 55.1            | 11,848 | 13.2     | 33.5                           | 1.6      | 45.5            | 27,100 |
| None of the above                           | 5.0        | 43.4                           | 1.4      | 48.5            | 11,205 | 26.1     | 42.4                           | 2.9      | 63.5            | 9,241  | 15.0     | 43.0                           | 2.1      | 55.6            | 20,446 |
| <b>Education</b>                            |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| No schooling                                | 5.0        | 22.8                           | 1.3      | 28.1            | 16,281 | 22.0     | 29.4                           | 2.6      | 48.7            | 16,860 | 13.9     | 26.2                           | 2.0      | 38.9            | 33,141 |
| Less than 5 years complete                  | 6.6        | 34.9                           | 1.2      | 40.1            | 4,264  | 25.1     | 38.2                           | 2.3      | 59.4            | 3,775  | 15.5     | 36.5                           | 1.7      | 49.5            | 8,039  |
| 5-9 years complete                          | 4.4        | 39.8                           | 1.6      | 44.7            | 10,871 | 24.8     | 40.7                           | 2.0      | 61.2            | 5,991  | 12.3     | 40.1                           | 1.8      | 51.1            | 16,862 |
| 10 or more years complete                   | 3.1        | 49.1                           | 0.9      | 52.6            | 9,256  | 24.9     | 50.9                           | 2.5      | 71.5            | 4,752  | 10.6     | 49.7                           | 1.5      | 59.1            | 14,008 |
| <b>Work status</b>                          |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Currently working                           | 3.9        | 33.3                           | 1.2      | 37.3            | 23,620 | 15.9     | 32.2                           | 1.6      | 45.6            | 9,283  | 7.6      | 33.0                           | 1.3      | 39.9            | 32,903 |
| Worked in past but currently<br>not working | 7.9        | 40.4                           | 1.9      | 48.4            | 4,565  | 26.7     | 37.1                           | 3.1      | 60.0            | 13,329 | 22.0     | 37.9                           | 2.8      | 57.1            | 17,894 |
| Never worked                                | 4.6        | 32.5                           | 1.2      | 37.6            | 12,487 | 26.2     | 36.3                           | 2.4      | 59.2            | 8,766  | 14.1     | 34.2                           | 1.7      | 47.1            | 21,253 |

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| Background characteristics | Age 45-59* |                                |            |                 |               | Age ≥ 60    |                                |            |                 |               | Total       |                                |            |                 |               |
|----------------------------|------------|--------------------------------|------------|-----------------|---------------|-------------|--------------------------------|------------|-----------------|---------------|-------------|--------------------------------|------------|-----------------|---------------|
|                            | Cataract   | Refractive errors <sup>1</sup> | Glaucoma   | Any eye problem | Number        | Cataract    | Refractive errors <sup>1</sup> | Glaucoma   | Any eye problem | Number        | Cataract    | Refractive errors <sup>1</sup> | Glaucoma   | Any eye problem | Number        |
| <b>MPCE quintile</b>       |            |                                |            |                 |               |             |                                |            |                 |               |             |                                |            |                 |               |
| Poorest                    | 4.6        | 25.1                           | 1.0        | 29.9            | 7,650         | 22.2        | 26.8                           | 2.5        | 47.4            | 6,464         | 13.1        | 25.9                           | 1.7        | 38.3            | 14,114        |
| Poorer                     | 4.9        | 30.9                           | 1.2        | 35.8            | 8,033         | 23.3        | 32.5                           | 2.7        | 52.6            | 6,458         | 13.5        | 31.6                           | 1.9        | 43.7            | 14,491        |
| Middle                     | 4.4        | 32.6                           | 1.4        | 37.6            | 8,101         | 22.9        | 37.3                           | 1.8        | 55.6            | 6,397         | 13.0        | 34.8                           | 1.6        | 46.0            | 14,498        |
| Richer                     | 5.0        | 38.2                           | 1.5        | 43.1            | 8,496         | 24.2        | 38.8                           | 2.5        | 60.0            | 6,157         | 13.7        | 38.5                           | 1.9        | 50.7            | 14,653        |
| Richest                    | 4.0        | 43.3                           | 1.3        | 47.6            | 8,392         | 23.8        | 44.0                           | 2.9        | 63.7            | 5,902         | 12.3        | 43.6                           | 2.0        | 54.3            | 14,294        |
| <b>Total</b>               | <b>4.6</b> | <b>33.9</b>                    | <b>1.3</b> | <b>38.7</b>     | <b>40,672</b> | <b>23.2</b> | <b>35.4</b>                    | <b>2.5</b> | <b>55.3</b>     | <b>31,378</b> | <b>13.1</b> | <b>34.6</b>                    | <b>1.8</b> | <b>46.3</b>     | <b>72,050</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup>Refractive errors include presbyopia, myopia and hypermetropia with or without astigmatism.

**Table 7.26 Self-reported prevalence (%) of visual impairment or any eye problem among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59* |                    |          |                 |        | Age ≥ 60 |                    |          |                 |        | Total    |                    |          |                 |        |
|-----------------------|------------|--------------------|----------|-----------------|--------|----------|--------------------|----------|-----------------|--------|----------|--------------------|----------|-----------------|--------|
|                       | Cataract   | Refractive errors¹ | Glaucoma | Any eye problem | Number | Cataract | Refractive errors¹ | Glaucoma | Any eye problem | Number | Cataract | Refractive errors¹ | Glaucoma | Any eye problem | Number |
| India                 | 4.6        | 33.9               | 1.3      | 38.7            | 40,672 | 23.2     | 35.4               | 2.5      | 55.3            | 31,378 | 13.1     | 34.6               | 1.8      | 46.3            | 72,050 |
| North                 |            |                    |          |                 |        |          |                    |          |                 |        |          |                    |          |                 |        |
| Chandigarh            | 5.0        | 69.2               | [0.4]    | 71.7            | 625    | 20.7     | 76.6               | [0.7]    | 82.4            | 389    | 11.3     | 72.2               | 0.5      | 76.0            | 1,014  |
| Delhi                 | 1.5        | 50.9               | 0.9      | 52.9            | 822    | 16.9     | 58.1               | [0.5]    | 71.9            | 495    | 7.3      | 53.7               | 0.8      | 60.1            | 1,317  |
| Haryana               | 2.5        | 39.9               | 0.9      | 42.0            | 1,048  | 15.3     | 45.6               | 3.4      | 61.6            | 847    | 8.6      | 42.6               | 2.1      | 51.4            | 1,895  |
| Himachal Pradesh      | 3.3        | 37.8               | 3.1      | 41.9            | 765    | 27.0     | 40.0               | 4.2      | 62.4            | 618    | 14.5     | 38.9               | 3.6      | 51.6            | 1,383  |
| Jammu & Kashmir       | 6.4        | 19.8               | 0.9      | 26.0            | 881    | 17.9     | 27.1               | 1.4      | 42.8            | 730    | 12.1     | 23.4               | 1.1      | 34.3            | 1,611  |
| Punjab                | 3.1        | 72.8               | 1.4      | 74.7            | 1,111  | 15.9     | 74.6               | 1.4      | 81.9            | 1,004  | 9.2      | 73.7               | 1.4      | 78.1            | 2,115  |
| Rajasthan             | 3.6        | 22.1               | 0.9      | 26.6            | 1,161  | 20.1     | 25.6               | 3.0      | 44.6            | 1,077  | 11.8     | 23.8               | 1.9      | 35.6            | 2,238  |
| Uttarakhand           | 6.5        | 26.4               | 2.1      | 33.6            | 716    | 25.5     | 25.8               | 2.3      | 49.2            | 641    | 15.8     | 26.1               | 2.2      | 41.3            | 1,357  |
| Central               |            |                    |          |                 |        |          |                    |          |                 |        |          |                    |          |                 |        |
| Chhattisgarh          | 2.8        | 11.2               | 0.8      | 15.1            | 1,275  | 19.4     | 15.0               | 1.8      | 34.6            | 779    | 9.2      | 12.7               | 1.2      | 22.5            | 2,054  |
| Madhya Pradesh        | 3.3        | 22.5               | 2.4      | 26.1            | 1,599  | 20.0     | 19.0               | 2.5      | 35.7            | 1,313  | 11.3     | 20.8               | 2.5      | 30.7            | 2,912  |
| Uttar Pradesh         | 4.7        | 22.3               | 0.6      | 27.3            | 2,395  | 26.0     | 20.7               | 2.0      | 46.0            | 2,167  | 15.2     | 21.5               | 1.3      | 36.5            | 4,562  |
| East                  |            |                    |          |                 |        |          |                    |          |                 |        |          |                    |          |                 |        |
| Bihar                 | 4.7        | 24.4               | 1.5      | 30.6            | 1,708  | 22.9     | 25.1               | 1.7      | 48.1            | 1,807  | 14.5     | 24.8               | 1.6      | 40.1            | 3,515  |
| Jharkhand             | 4.3        | 16.4               | 1.7      | 22.9            | 1,294  | 22.6     | 15.1               | 2.1      | 38.7            | 1,167  | 13.1     | 15.8               | 1.9      | 30.5            | 2,461  |
| Odisha                | 2.3        | 14.2               | 2.2      | 19.6            | 1,675  | 14.4     | 16.7               | 2.6      | 33.4            | 1,235  | 7.6      | 15.3               | 2.3      | 25.7            | 2,910  |
| West Bengal           | 5.4        | 51.3               | 0.8      | 55.6            | 2,384  | 23.1     | 52.3               | 2.6      | 68.2            | 1,540  | 12.6     | 51.7               | 1.5      | 60.7            | 3,924  |
| Northeast             |            |                    |          |                 |        |          |                    |          |                 |        |          |                    |          |                 |        |
| Arunachal Pradesh     | 2.3        | 27.8               | -        | 29.5            | 896    | 3.3      | 32.2               | -        | 34.9            | 318    | 2.5      | 28.9               | -        | 30.8            | 1,214  |
| Assam                 | 4.6        | 23.5               | 3.1      | 31.4            | 1,548  | 17.7     | 29.1               | 4.9      | 47.5            | 814    | 9.3      | 25.5               | 3.8      | 37.2            | 2,362  |
| Manipur               | 3.5        | 48.9               | [0.1]    | 51.4            | 761    | 9.2      | 53.1               | [0.6]    | 57.5            | 605    | 6.2      | 50.9               | 0.3      | 54.3            | 1,366  |
| Meghalaya             | 1.0        | 27.2               | [0.7]    | 28.6            | 556    | 2.6      | 41.5               | [1.1]    | 43.8            | 411    | 1.6      | 33.2               | 0.9      | 35.0            | 967    |
| Mizoram               | 2.6        | 26.6               | 0.1      | 27.6            | 714    | 4.9      | 33.8               | 3.6      | 36.5            | 531    | 3.6      | 29.8               | 1.7      | 31.6            | 1,245  |
| Nagaland              | [0.3]      | 18.1               | [0.4]    | 19.6            | 708    | 2.7      | 26.7               | [0.3]    | 29.2            | 606    | 1.5      | 22.3               | [0.3]    | 24.3            | 1,314  |
| Tripura               | 2.3        | 35.2               | 1.7      | 38.7            | 732    | 9.6      | 38.5               | 1.5      | 46.6            | 459    | 5.2      | 36.5               | 1.6      | 41.8            | 1,191  |
| West                  |            |                    |          |                 |        |          |                    |          |                 |        |          |                    |          |                 |        |
| Dadra & Nagar Haveli  | 2.6        | 50.6               | 1.5      | 53.3            | 635    | 21.7     | 41.3               | 2.3      | 58.3            | 449    | 10.1     | 46.9               | 1.8      | 55.3            | 1,084  |
| Daman & Diu           | 2.3        | 57.3               | 1.1      | 60.2            | 557    | 43.7     | 45.4               | 3.1      | 75.2            | 429    | 21.8     | 51.7               | 2.1      | 67.2            | 986    |
| Goa                   | 3.6        | 57.4               | [0.7]    | 61.3            | 788    | 25.0     | 53.0               | 1.3      | 72.0            | 634    | 13.4     | 55.4               | 1.0      | 66.2            | 1,422  |
| Gujarat               | 6.3        | 38.1               | 1.5      | 43.8            | 1,343  | 43.9     | 34.9               | 2.9      | 66.0            | 982    | 23.2     | 36.7               | 2.1      | 53.8            | 2,325  |
| Maharashtra           | 4.3        | 51.0               | 1.0      | 54.9            | 2,176  | 28.5     | 50.5               | 3.0      | 72.7            | 1,783  | 16.2     | 50.7               | 2.0      | 63.6            | 3,959  |

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| State/Union Territory     | Age 45-59* |                                |          |                 |        | Age ≥ 60 |                                |          |                 |        | Total    |                                |          |                 |        |
|---------------------------|------------|--------------------------------|----------|-----------------|--------|----------|--------------------------------|----------|-----------------|--------|----------|--------------------------------|----------|-----------------|--------|
|                           | Cataract   | Refractive errors <sup>1</sup> | Glaucoma | Any eye problem | Number | Cataract | Refractive errors <sup>1</sup> | Glaucoma | Any eye problem | Number | Cataract | Refractive errors <sup>1</sup> | Glaucoma | Any eye problem | Number |
| <b>South</b>              |            |                                |          |                 |        |          |                                |          |                 |        |          |                                |          |                 |        |
| Andaman & Nicobar Islands | 1.9        | 51.7                           | 1.7      | 55.5            | 720    | 8.8      | 60.8                           | 4.5      | 71.0            | 521    | 4.7      | 55.4                           | 2.9      | 61.8            | 1,241  |
| Andhra Pradesh            | 5.6        | 48.7                           | 2.6      | 54.7            | 1,568  | 18.8     | 52.9                           | 5.2      | 68.9            | 1,101  | 11.2     | 50.5                           | 3.7      | 60.7            | 2,669  |
| Karnataka                 | 5.3        | 32.1                           | 0.5      | 35.6            | 1,410  | 23.6     | 39.5                           | 1.6      | 56.8            | 1,001  | 12.5     | 35.0                           | 1.0      | 44.0            | 2,411  |
| Kerala                    | 4.3        | 52.2                           | 0.9      | 59.3            | 1,276  | 28.4     | 48.8                           | 0.6      | 76.0            | 1,206  | 16.8     | 50.4                           | 0.7      | 68.0            | 2,482  |
| Lakshadweep               | 4.3        | 53.0                           | [0.6]    | 58.6            | 637    | 22.6     | 48.7                           | [0.5]    | 70.9            | 500    | 13.0     | 51.0                           | 0.5      | 64.4            | 1,137  |
| Puducherry                | 7.4        | 32.0                           | [0.5]    | 38.7            | 787    | 22.9     | 35.2                           | 1.8      | 55.9            | 638    | 14.7     | 33.5                           | 1.1      | 46.8            | 1,425  |
| Tamil Nadu                | 6.2        | 22.6                           | 1.3      | 30.6            | 1,994  | 25.2     | 30.1                           | 2.0      | 53.3            | 1,530  | 14.9     | 26.1                           | 1.6      | 41.0            | 3,524  |
| Telangana                 | 5.9        | 49.9                           | 1.9      | 54.5            | 1,407  | 14.4     | 59.7                           | 4.7      | 71.8            | 1,051  | 9.6      | 54.3                           | 3.1      | 62.2            | 2,458  |

Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

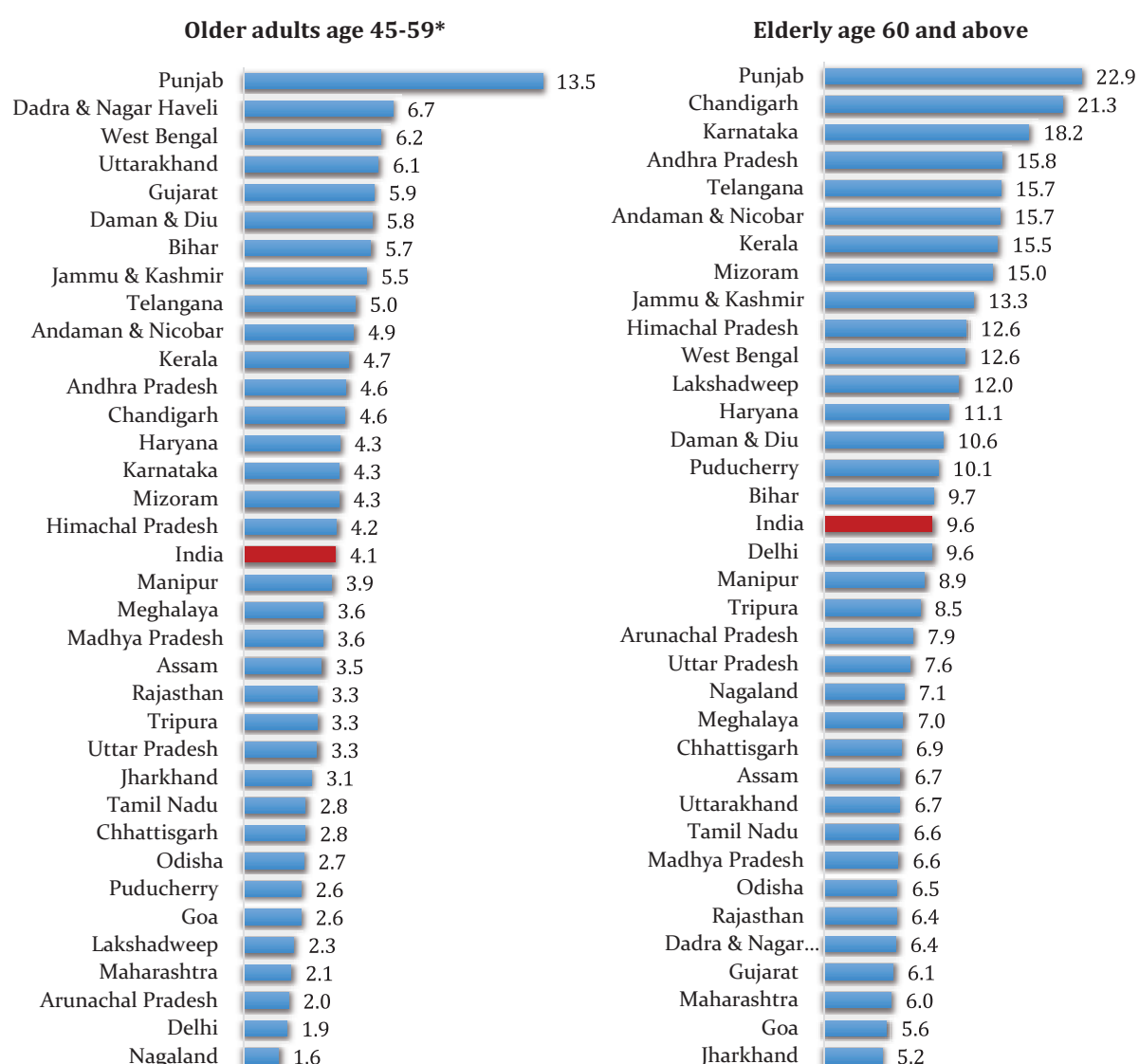
<sup>1</sup> Refractive errors include presbyopia, myopia and hypermetropia with or without astigmatism.

### 7.4.3 Hearing problems

All the LASI survey participants were asked about diagnosis of any ear or hearing-related problem in one or both ears, whether participants had taken any treatment, and the type of treatment taken. Table 7.27 presents the self-reported prevalence of diagnosed hearing problems by background characteristics. Overall, the self-reported prevalence of any ear or hearing-related problem in India is 6.6%. This prevalence is much higher in elderly age 60 and above (9.6%) than in older adults age 45-59 (4.1%). Among the elderly age 60 and above, the prevalence rate of hearing problems is higher among those who are widowed (12%), living with children and others (12%), worked in the past but currently not working (12%), the elderly with 10 or more years of schooling (12%), and those from the richest MPCE quintile (14%).

State-wise differences in the prevalence of any ear or hearing-related problem are shown in Table 7.28. The self-reported prevalence of any ear or hearing-related problem among older adults age 45 and above ranges from 18% in Punjab to 3.4% in Arunachal Pradesh. The proportion of elderly age 60 and above with ear or hearing-related problem is higher than 20% in Punjab (23%) and Chandigarh (21%). The prevalence rate is higher in the north and south Indian states.

**Figure 7.16 Self-reported prevalence (%) of diagnosed ear or hearing-related problem among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



\* Including spouse irrespective of age

**Table 7.27 Self-reported prevalence (%) of diagnosed any hearing or ear related problem among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Any hearing or ear related problem |               |            |               |            |               |
|------------------------------------------|------------------------------------|---------------|------------|---------------|------------|---------------|
|                                          | Age 45-59*                         | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>Place of residence</b>                |                                    |               |            |               |            |               |
| Rural                                    | 4.4                                | 25,744        | 9.3        | 20,690        | 6.7        | 46,434        |
| Urban                                    | 3.6                                | 14,921        | 10.2       | 10,686        | 6.4        | 25,607        |
| <b>Sex</b>                               |                                    |               |            |               |            |               |
| Male                                     | 3.9                                | 15,420        | 9.8        | 15,040        | 6.9        | 30,460        |
| Female                                   | 4.3                                | 25,245        | 9.5        | 16,336        | 6.4        | 41,581        |
| <b>Marital status</b>                    |                                    |               |            |               |            |               |
| Currently married                        | 4.0                                | 35,371        | 8.3        | 19,862        | 5.6        | 55,233        |
| Widowed                                  | 5.5                                | 3,864         | 11.9       | 10,692        | 10.4       | 14,556        |
| Divorced/Separated/Deserted/Others       | 2.6                                | 1,430         | 8.4        | 822           | 4.8        | 2,252         |
| <b>Living arrangement</b>                |                                    |               |            |               |            |               |
| Living alone                             | 3.9                                | 689           | 10.6       | 1,620         | 9.1        | 2,309         |
| Living with spouse and/or others         | 4.0                                | 4,519         | 8.8        | 6,159         | 6.8        | 10,678        |
| Living with spouse and children          | 4.0                                | 30,198        | 8.1        | 13,463        | 5.3        | 43,661        |
| Living with children and others          | 5.3                                | 4,076         | 12.4       | 8,417         | 10.4       | 12,493        |
| Living with others only                  | 3.9                                | 1,183         | 9.1        | 1,717         | 7.1        | 2,900         |
| <b>Religion</b>                          |                                    |               |            |               |            |               |
| Hindu                                    | 4.0                                | 29,843        | 9.5        | 22,975        | 6.5        | 52,818        |
| Muslim                                   | 4.5                                | 4,924         | 8.9        | 3,718         | 6.4        | 8,642         |
| Christian                                | 2.3                                | 4,058         | 9.1        | 3,141         | 5.3        | 7,199         |
| Others                                   | 7.4                                | 1,840         | 15.0       | 1,542         | 11.0       | 3,382         |
| <b>Caste/tribe</b>                       |                                    |               |            |               |            |               |
| Scheduled tribe                          | 3.8                                | 7,326         | 5.9        | 5,160         | 4.7        | 12,486        |
| Scheduled caste                          | 4.7                                | 6,887         | 10.8       | 5,130         | 7.5        | 12,017        |
| Other backward class                     | 3.9                                | 15,248        | 9.7        | 11,845        | 6.5        | 27,093        |
| None of the above                        | 4.2                                | 11,204        | 9.8        | 9,241         | 6.8        | 20,445        |
| <b>Education</b>                         |                                    |               |            |               |            |               |
| No schooling                             | 4.4                                | 16,279        | 9.5        | 16,857        | 7.1        | 33,136        |
| Less than 5 years complete               | 4.2                                | 4,262         | 9.7        | 3,775         | 6.9        | 8,037         |
| 5-9 years complete                       | 4.6                                | 10,871        | 8.4        | 5,991         | 6.0        | 16,862        |
| 10 or more years complete                | 3.2                                | 9,253         | 11.5       | 4,753         | 6.0        | 14,006        |
| <b>Work status</b>                       |                                    |               |            |               |            |               |
| Currently working                        | 3.7                                | 23,615        | 6.3        | 9,282         | 4.5        | 32,897        |
| Worked in past but currently not working | 5.0                                | 4,565         | 11.5       | 13,328        | 9.9        | 17,893        |
| Never worked                             | 4.5                                | 12,485        | 10.5       | 8,766         | 7.1        | 21,251        |
| <b>MPCE quintile</b>                     |                                    |               |            |               |            |               |
| Poorest                                  | 3.8                                | 7,648         | 8.2        | 6,463         | 5.9        | 14,111        |
| Poorer                                   | 3.8                                | 8,032         | 8.5        | 6,458         | 6.0        | 14,490        |
| Middle                                   | 4.3                                | 8,100         | 8.7        | 6,396         | 6.3        | 14,496        |
| Richer                                   | 4.4                                | 8,494         | 9.7        | 6,157         | 6.8        | 14,651        |
| Richest                                  | 4.4                                | 8,391         | 13.9       | 5,902         | 8.4        | 14,293        |
| <b>Total</b>                             | <b>4.1</b>                         | <b>40,665</b> | <b>9.6</b> | <b>31,376</b> | <b>6.6</b> | <b>72,041</b> |

Note

\* Including spouse irrespective of age



**Table 7.28 Self-reported prevalence (%) of diagnosed any hearing or ear related problem among older adults, states/UTs LASI Wave 1, 2017-18**

| State/Union Territory     | Any hearing or ear related problem |               |            |               |            |               |
|---------------------------|------------------------------------|---------------|------------|---------------|------------|---------------|
|                           | Age 45-59*                         | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>India</b>              | <b>4.1</b>                         | <b>40,665</b> | <b>9.6</b> | <b>31,376</b> | <b>6.6</b> | <b>72,041</b> |
| <b>North</b>              |                                    |               |            |               |            |               |
| Chandigarh                | 4.6                                | 624           | 21.3       | 388           | 11.2       | 1,012         |
| Delhi                     | 1.9                                | 822           | 9.6        | 495           | 4.8        | 1,317         |
| Haryana                   | 4.3                                | 1,048         | 11.1       | 847           | 7.6        | 1,895         |
| Himachal Pradesh          | 4.2                                | 765           | 12.6       | 617           | 8.2        | 1,382         |
| Jammu & Kashmir           | 5.5                                | 881           | 13.3       | 730           | 9.4        | 1,611         |
| Punjab                    | 13.5                               | 1,112         | 22.9       | 1,004         | 18.0       | 2,116         |
| Rajasthan                 | 3.3                                | 1,161         | 6.4        | 1,077         | 4.9        | 2,238         |
| Uttarakhand               | 6.1                                | 716           | 6.7        | 641           | 6.4        | 1,357         |
| <b>Central</b>            |                                    |               |            |               |            |               |
| Chhattisgarh              | 2.8                                | 1,274         | 6.9        | 779           | 4.3        | 2,053         |
| Madhya Pradesh            | 3.6                                | 1,598         | 6.6        | 1,313         | 5.0        | 2,911         |
| Uttar Pradesh             | 3.3                                | 2,395         | 7.6        | 2,167         | 5.4        | 4,562         |
| <b>East</b>               |                                    |               |            |               |            |               |
| Bihar                     | 5.7                                | 1,708         | 9.7        | 1,807         | 7.9        | 3,515         |
| Jharkhand                 | 3.1                                | 1,293         | 5.2        | 1,167         | 4.1        | 2,460         |
| Odisha                    | 2.7                                | 1,674         | 6.5        | 1,235         | 4.4        | 2,909         |
| West Bengal               | 6.2                                | 2,384         | 12.6       | 1,540         | 8.8        | 3,924         |
| <b>Northeast</b>          |                                    |               |            |               |            |               |
| Arunachal Pradesh         | 2.0                                | 896           | 7.9        | 318           | 3.4        | 1,214         |
| Assam                     | 3.5                                | 1,548         | 6.7        | 814           | 4.7        | 2,362         |
| Manipur                   | 3.9                                | 761           | 8.9        | 605           | 6.3        | 1,366         |
| Meghalaya                 | 3.6                                | 556           | 7.0        | 411           | 5.0        | 967           |
| Mizoram                   | 4.3                                | 714           | 15.0       | 531           | 9.1        | 1,245         |
| Nagaland                  | 1.6                                | 708           | 7.1        | 607           | 4.3        | 1,315         |
| Tripura                   | 3.3                                | 732           | 8.5        | 459           | 5.4        | 1,191         |
| <b>West</b>               |                                    |               |            |               |            |               |
| Dadra & Nagar Haveli      | 6.7                                | 635           | 6.4        | 449           | 6.6        | 1,084         |
| Daman & Diu               | 5.8                                | 557           | 10.6       | 429           | 8.0        | 986           |
| Goa                       | 2.6                                | 788           | 5.6        | 634           | 3.9        | 1,422         |
| Gujarat                   | 5.9                                | 1,342         | 6.1        | 981           | 6.0        | 2,323         |
| Maharashtra               | 2.1                                | 2,176         | 6.0        | 1,783         | 4.0        | 3,959         |
| <b>South</b>              |                                    |               |            |               |            |               |
| Andaman & Nicobar Islands | 4.9                                | 720           | 15.7       | 521           | 9.3        | 1,241         |
| Andhra Pradesh            | 4.6                                | 1,567         | 15.8       | 1,101         | 9.3        | 2,668         |
| Karnataka                 | 4.3                                | 1,410         | 18.2       | 1,001         | 9.8        | 2,411         |
| Kerala                    | 4.7                                | 1,276         | 15.5       | 1,206         | 10.3       | 2,482         |
| Lakshadweep               | 2.3                                | 637           | 12.0       | 500           | 6.9        | 1,137         |
| Puducherry                | 2.6                                | 787           | 10.1       | 638           | 6.1        | 1,425         |
| Tamil Nadu                | 2.8                                | 1,994         | 6.6        | 1,530         | 4.6        | 3,524         |
| Telangana                 | 5.0                                | 1,406         | 15.7       | 1,051         | 9.8        | 2,457         |

Note

\* Including spouse irrespective of age

#### 7.4.4 Oral health

Oral health conditions are important determinants of ageing and markers of overall health and wellbeing. Oral health in older age has an important role in determining chewing ability, communication, health, and nutrition. In the LASI, information was collected about various oral health problems during 12 months prior to the survey. Respondents were also asked about loss of natural teeth (partial and complete edentulism) and chewing ability.

Table 7.29 presents the oral health problems by background characteristics. The self-reported prevalence of common oral health problems among older adults age 45 and above in India is 47%: the prevalence of dental caries and periodontal diseases is 19% and 16%, respectively. The prevalence of common oral health problems is higher among elderly age 60 and above (51%) than among older adults age 45-59 (44%). Among elderly age 60 and above, the prevalence of dental caries and common oral health problems is higher among women than men and in urban areas than in rural areas. In contrast, the prevalence of periodontal disease is higher in rural areas (17%) than in urban areas (14%).

The prevalence of complete edentulism (loss of all-natural teeth) among older adults age 45 and above in India is 7%. The prevalence rate is higher among elderly age 60 and above (11%) than in older adults age 45-59 (3%). Almost three quarters (72%) of elderly age 60 and above reported partial edentulism, compared to 49% among older adults age 45-59.

Table 7.30 presents the cross-state variations in oral health problems. The common oral health problems are more common in the elderly age 60 and above, with the prevalence rate ranging from 32% in Daman & Diu to 73% in Arunachal Pradesh. The prevalence rate of dental caries among elderly age 60 and above is higher in the states/UTs of Chandigarh (45%), Kerala (43%), and Puducherry (42%). The prevalence of complete edentulism is higher in north Indian states: more than 20% of elderly age 60 and above in Himachal Pradesh (26%), Punjab (25%), Haryana (23%), and Gujarat (21%) have lost all-natural teeth.

##### Key findings: organ related conditions

- Overall in India, any urogenital condition, incontinence, and chronic renal failure are more prevalent among elderly age 60 and above: 7.7%, 4.1% and 0.8% respectively; whereas, kidney stones are slightly more prevalent (2.7%) among older adults age 45-59. The prevalence of any urogenital condition is higher among elderly men (9.6%) than women (6%).
- A higher proportion of elderly men than women age 60 and above reported refractive errors and hearing or ear related problems; whereas, the prevalence of cataract, oral health problems, edentulism is higher among elderly women than men.
- Visual impairment conditions are majorly due to refractive errors and cataract. Among elderly age 60 and above, the prevalence of cataract is more than 25% in the states/UTs of Daman & Diu (44%), Gujarat (44%), Maharashtra (29%), Kerala (28%), Himachal Pradesh (27%), Uttarakhand (26%), Uttar Pradesh (26%), and Tamil Nadu (25%).
- Among elderly age 60 and above, the overall prevalence of ear or hearing related problem in India is 9.6%; the prevalence of hearing problem is higher in the north and southern Indian states of Punjab (23%), Chandigarh (21%), Karnataka (18%), Andhra Pradesh (16%), Telangana (16%), Andaman & Nicobar (16%), and Kerala (16%).
- The prevalence of complete edentulism (loss of all teeth) is higher in the north Indian states; more than one in every five elderly age 60 and above have lost all natural teeth in Himachal Pradesh (26%), Punjab (25%), Haryana (23%), and Gujarat (21%).

**Table 7.29 Self-reported prevalence (%) of diagnosed oral health conditions among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics | Age 45-59*                               |                      |                       |         |          |                     |        |               |                      |                       | Age ≥ 60 |          |                     |        |               |                      |                       |         |          |                     | Total  |  |  |  |  |
|----------------------------|------------------------------------------|----------------------|-----------------------|---------|----------|---------------------|--------|---------------|----------------------|-----------------------|----------|----------|---------------------|--------|---------------|----------------------|-----------------------|---------|----------|---------------------|--------|--|--|--|--|
|                            | Dental caries                            | Periodontal disease¹ | oral health problems² |         |          | Complete edentulism | Number | Dental caries | Periodontal disease¹ | oral health problems² |          |          | Complete edentulism | Number | Dental caries | Periodontal disease¹ | oral health problems² |         |          | Complete edentulism | Number |  |  |  |  |
|                            |                                          |                      | Common                | Partial | Complete |                     |        |               |                      | Common                | Partial  | Complete |                     |        |               |                      | Common                | Partial | Complete |                     |        |  |  |  |  |
| Place of residence         |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Rural                                    | 16.9                 | 18.0                  | 44.7    | 47.5     | 3.1                 | 25,745 | 17.8          | 16.8                 | 51.0                  | 72.0     | 11.1     | 20,689              | 17.3   | 17.4          | 47.7                 | 59.1                  | 6.9     | 46,434   |                     |        |  |  |  |  |
|                            | Urban                                    | 20.7                 | 10.5                  | 43.2    | 51.3     | 3.0                 | 14,920 | 23.8          | 13.9                 | 52.0                  | 72.0     | 11.3     | 10,685              | 22.0   | 11.9          | 46.9                 | 60.0                  | 6.5     | 25,605   |                     |        |  |  |  |  |
|                            |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
| Sex                        |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Male                                     | 15.8                 | 13.4                  | 41.3    | 49.0     | 3.4                 | 15,421 | 18.3          | 15.1                 | 48.8                  | 71.2     | 11.1     | 15,039              | 17.1   | 14.2          | 45.2                 | 60.5                  | 7.4     | 30,460   |                     |        |  |  |  |  |
| Marital status             |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Female                                   | 19.6                 | 16.7                  | 45.9    | 48.7     | 2.8                 | 25,244 | 20.6          | 16.8                 | 53.5                  | 72.6     | 11.3     | 16,335              | 20.0   | 16.7          | 49.1                 | 58.6                  | 6.3     | 41,579   |                     |        |  |  |  |  |
| Living arrangement         |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Currently married                        | 18.0                 | 15.8                  | 44.0    | 47.9     | 3.0                 | 35,369 | 19.6          | 16.5                 | 50.8                  | 72.2     | 9.2      | 19,861              | 18.6   | 16.0          | 46.5                 | 56.9                  | 5.3     | 55,230   |                     |        |  |  |  |  |
|                            | Widowed                                  | 18.8                 | 15.1                  | 47.0    | 58.2     | 3.7                 | 3,864  | 19.4          | 15.2                 | 51.6                  | 71.5     | 14.7     | 10,691              | 19.3   | 15.2          | 50.5                 | 68.4                  | 12.2    | 14,555   |                     |        |  |  |  |  |
|                            | Divorced/Separated/Deserted/Others       | 21.5                 | 8.0                   | 41.9    | 46.0     | 2.2                 | 1,432  | 20.7          | 14.1                 | 59.3                  | 73.3     | 9.2      | 822                 | 21.2   | 10.2          | 48.2                 | 55.9                  | 4.7     | 2,254    |                     |        |  |  |  |  |
| Religion                   |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Living alone                             | 21.5                 | 11.7                  | 47.9    | 56.6     | 2.6                 | 689    | 17.2          | 13.7                 | 56.5                  | 69.3     | 13.9     | 1,620               | 18.2   | 13.3          | 54.6                 | 66.4                  | 11.4    | 2,309    |                     |        |  |  |  |  |
|                            | Living with spouse and/or others         | 22.4                 | 14.6                  | 48.2    | 51.9     | 2.9                 | 4,519  | 17.8          | 15.5                 | 50.9                  | 73.2     | 8.6      | 6,158               | 19.7   | 15.1          | 49.8                 | 64.4                  | 6.2     | 10,677   |                     |        |  |  |  |  |
|                            | Living with spouse and children          | 17.3                 | 15.9                  | 43.3    | 47.2     | 3.0                 | 30,197 | 20.4          | 17.0                 | 50.7                  | 71.7     | 9.4      | 13,463              | 18.3   | 16.3          | 45.7                 | 54.9                  | 5.1     | 43,660   |                     |        |  |  |  |  |
| Caste/tribe                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Living with children and others          | 20.2                 | 15.5                  | 48.6    | 58.0     | 3.6                 | 4,076  | 20.3          | 15.8                 | 51.3                  | 72.1     | 14.5     | 8,417               | 20.3   | 15.7          | 50.5                 | 68.1                  | 11.4    | 12,493   |                     |        |  |  |  |  |
|                            | Living with others only                  | 15.0                 | 9.1                   | 34.4    | 43.1     | 2.3                 | 1,184  | 18.3          | 13.0                 | 51.0                  | 72.2     | 14.1     | 1,716               | 17.1   | 11.5          | 44.7                 | 61.2                  | 9.6     | 2,900    |                     |        |  |  |  |  |
|                            |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
| Education                  |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Hindu                                    | 18.1                 | 15.4                  | 44.0    | 48.6     | 2.8                 | 29,842 | 19.5          | 16.1                 | 51.4                  | 71.6     | 11.4     | 22,973              | 18.7   | 15.7          | 47.4                 | 59.2                  | 6.8     | 52,815   |                     |        |  |  |  |  |
|                            | Muslim                                   | 19.0                 | 17.2                  | 48.2    | 51.2     | 4.4                 | 4,924  | 20.1          | 17.7                 | 50.3                  | 74.9     | 9.1      | 3,718               | 19.4   | 17.4          | 49.1                 | 61.5                  | 6.5     | 8,642    |                     |        |  |  |  |  |
|                            | Christian                                | 19.5                 | 8.1                   | 38.9    | 44.4     | 3.8                 | 4,058  | 24.0          | 10.1                 | 60.6                  | 75.6     | 7.0      | 3,141               | 21.5   | 9.0           | 48.5                 | 58.2                  | 5.2     | 7,199    |                     |        |  |  |  |  |
| Work status                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Others                                   | 15.0                 | 16.3                  | 40.3    | 47.9     | 4.2                 | 1,841  | 15.6          | 13.0                 | 45.2                  | 68.9     | 15.7     | 1,542               | 15.3   | 14.7          | 42.7                 | 58.1                  | 9.7     | 3,383    |                     |        |  |  |  |  |
|                            | Scheduled tribe                          | 14.7                 | 13.4                  | 37.8    | 44.1     | 3.2                 | 7,327  | 18.0          | 16.8                 | 51.1                  | 70.5     | 8.7      | 5,160               | 16.2   | 14.9          | 43.6                 | 55.6                  | 5.6     | 12,487   |                     |        |  |  |  |  |
|                            | Scheduled caste                          | 16.4                 | 17.6                  | 42.8    | 46.6     | 3.4                 | 6,887  | 18.6          | 18.0                 | 51.2                  | 72.9     | 10.2     | 5,130               | 17.4   | 17.8          | 46.6                 | 58.5                  | 6.5     | 12,017   |                     |        |  |  |  |  |
| Work status                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Other backward class                     | 18.9                 | 14.2                  | 46.5    | 50.8     | 3.0                 | 15,248 | 20.3          | 15.3                 | 53.2                  | 72.2     | 10.8     | 11,843              | 19.5   | 14.7          | 49.5                 | 60.5                  | 6.5     | 27,091   |                     |        |  |  |  |  |
|                            | None of the above                        | 19.3                 | 16.8                  | 43.3    | 48.5     | 2.9                 | 11,203 | 19.5          | 15.4                 | 48.3                  | 71.4     | 13.3     | 9,241               | 19.4   | 16.1          | 45.7                 | 59.4                  | 7.8     | 20,444   |                     |        |  |  |  |  |
|                            |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
| Work status                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | No schooling                             | 17.4                 | 18.0                  | 46.3    | 50.5     | 3.9                 | 16,280 | 18.2          | 17.4                 | 52.1                  | 72.2     | 11.6     | 16,856              | 17.9   | 17.7          | 49.3                 | 61.9                  | 7.9     | 33,136   |                     |        |  |  |  |  |
|                            | Less than 5 years complete               | 19.9                 | 15.9                  | 46.0    | 50.6     | 3.6                 | 4,263  | 22.3          | 15.1                 | 52.3                  | 74.3     | 10.3     | 3,774               | 21.1   | 15.5          | 49.1                 | 62.1                  | 6.8     | 8,037    |                     |        |  |  |  |  |
|                            | 5-9 years complete                       | 18.4                 | 16.0                  | 43.3    | 47.7     | 2.6                 | 10,870 | 20.7          | 14.1                 | 53.0                  | 70.8     | 11.8     | 5,992               | 19.3   | 15.2          | 47.0                 | 56.6                  | 6.2     | 16,862   |                     |        |  |  |  |  |
| Work status                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | 10 or more years complete                | 18.4                 | 9.6                   | 40.2    | 45.8     | 1.7                 | 9,252  | 21.2          | 13.2                 | 44.8                  | 70.5     | 9.7      | 4,752               | 19.4   | 10.9          | 41.8                 | 54.3                  | 4.4     | 14,004   |                     |        |  |  |  |  |
|                            |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Currently working                        | 17.1                 | 14.0                  | 42.9    | 48.3     | 2.4                 | 23,615 | 18.8          | 15.7                 | 49.2                  | 71.6     | 6.2      | 9,281               | 17.6   | 14.5          | 44.8                 | 55.4                  | 3.6     | 32,896   |                     |        |  |  |  |  |
| Work status                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Worked in past but currently not working | 19.5                 | 17.2                  | 50.0    | 53.2     | 5.5                 | 4,565  | 19.1          | 14.7                 | 51.6                  | 71.9     | 14.0     | 13,327              | 19.2   | 15.3          | 51.2                 | 67.2                  | 11.8    | 17,892   |                     |        |  |  |  |  |
| Work status                |                                          |                      |                       |         |          |                     |        |               |                      |                       |          |          |                     |        |               |                      |                       |         |          |                     |        |  |  |  |  |
|                            | Never worked                             | 19.8                 | 17.6                  | 44.4    | 48.0     | 3.4                 | 12,485 | 21.2          | 18.3                 | 53.1                  | 72.6     | 12.5     | 8,766               | 20.4   | 17.9          | 48.2                 | 58.8                  | 7.4     | 21,251   |                     |        |  |  |  |  |

Continued

## Continued

| Background characteristics | Age 45-59*    |                                  |                                          |                    |                     | Age ≥ 60      |               |                                  |                                          |                    | Total               |               |               |                                  |                                          |
|----------------------------|---------------|----------------------------------|------------------------------------------|--------------------|---------------------|---------------|---------------|----------------------------------|------------------------------------------|--------------------|---------------------|---------------|---------------|----------------------------------|------------------------------------------|
|                            | Dental caries | Periodontal disease <sup>1</sup> | Common oral health problems <sup>2</sup> | Partial edentulism | Complete edentulism | Number        | Dental caries | Periodontal disease <sup>1</sup> | Common oral health problems <sup>2</sup> | Partial edentulism | Complete edentulism | Number        | Dental caries | Periodontal disease <sup>1</sup> | Common oral health problems <sup>2</sup> |
| <b>MPCe quintile</b>       |               |                                  |                                          |                    |                     |               |               |                                  |                                          |                    |                     |               |               |                                  |                                          |
| Poorest                    | 14.9          | 15.7                             | 39.4                                     | 47.8               | 2.6                 | 7,649         | 17.7          | 16.1                             | 49.3                                     | 73.6               | 11.0                | 6,462         | 16.3          | 15.9                             | 44.2                                     |
| Poorer                     | 17.7          | 16.3                             | 43.1                                     | 48.2               | 2.6                 | 8,032         | 19.8          | 16.2                             | 50.6                                     | 72.4               | 11.2                | 6,458         | 18.7          | 16.3                             | 46.6                                     |
| Middle                     | 19.1          | 15.9                             | 44.4                                     | 50.7               | 2.8                 | 8,099         | 18.8          | 15.7                             | 50.9                                     | 70.9               | 13.0                | 6,397         | 18.9          | 15.8                             | 47.4                                     |
| Richer                     | 18.6          | 15.1                             | 44.3                                     | 46.1               | 2.7                 | 8,494         | 20.0          | 13.7                             | 53.0                                     | 71.1               | 10.3                | 6,155         | 19.2          | 14.5                             | 48.2                                     |
| Richest                    | 20.6          | 14.1                             | 49.9                                     | 51.2               | 4.6                 | 8,391         | 22.1          | 18.4                             | 53.3                                     | 71.5               | 10.1                | 5,902         | 21.2          | 15.9                             | 51.3                                     |
| <b>Total</b>               | <b>18.1</b>   | <b>15.5</b>                      | <b>44.2</b>                              | <b>48.8</b>        | <b>3.0</b>          | <b>40,665</b> | <b>19.5</b>   | <b>16.0</b>                      | <b>51.3</b>                              | <b>72.0</b>        | <b>11.2</b>         | <b>31,374</b> | <b>18.8</b>   | <b>15.7</b>                      | <b>47.4</b>                              |
| Notes                      |               |                                  |                                          |                    |                     |               |               |                                  |                                          |                    |                     |               |               |                                  |                                          |

\* Including spouse irrespective of age

<sup>1</sup>Periodontal disease includes bleeding gums, swelling gums or ulcers lasting more than two weeks (any one or more).

<sup>2</sup>Common oral health problems include painful teeth, ulcers lasting more than two weeks, bleeding gums, swelling gums, loose teeth, dental cavity/dental caries & soreness or cracks in the corner of the mouth in the past 12 months (any one or more).

**Table 7.30 Self-reported prevalence (%) of diagnosed oral health conditions among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*    |                      |                              |                    |                     |        | Age ≥ 60      |                      |                              |                    |                     |        | Total         |                      |                              |                    |                     |        |
|-----------------------|---------------|----------------------|------------------------------|--------------------|---------------------|--------|---------------|----------------------|------------------------------|--------------------|---------------------|--------|---------------|----------------------|------------------------------|--------------------|---------------------|--------|
|                       | Dental caries | Periodontal disease¹ | Common oral health problems² | Partial edentulism | Complete edentulism | Number | Dental caries | Periodontal disease¹ | Common oral health Problems² | Partial edentulism | Complete edentulism | Number | Dental caries | Periodontal disease¹ | Common oral health problems² | Partial edentulism | Complete edentulism | Number |
|                       |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| India                 | 18.1          | 15.5                 | 44.2                         | 48.8               | 3.0                 | 40,665 | 19.5          | 16.0                 | 51.3                         | 72.0               | 11.2                | 31,374 | 18.8          | 15.7                 | 47.4                         | 59.4               | 6.8                 | 72,039 |
| North                 |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| Chandigarh            | 32.4          | 9.0                  | 49.0                         | 51.7               | 3.2                 | 624    | 44.6          | 10.5                 | 63.2                         | 69.9               | 19.0                | 387    | 37.2          | 9.6                  | 54.6                         | 58.9               | 9.5                 | 1,011  |
| Delhi                 | 9.7           | 7.8                  | 41.1                         | 42.8               | 2.7                 | 822    | 8.8           | 12.6                 | 52.1                         | 72.4               | 12.2                | 495    | 9.4           | 9.7                  | 45.3                         | 54.1               | 6.3                 | 1,317  |
| Haryana               | 12.5          | 21.1                 | 51.2                         | 56.4               | 3.2                 | 1,048  | 12.3          | 18.6                 | 49.0                         | 69.7               | 23.2                | 847    | 12.4          | 19.9                 | 50.1                         | 62.8               | 12.8                | 1,895  |
| Himachal Pradesh      | 30.4          | 23.2                 | 60.1                         | 73.7               | 4.3                 | 765    | 22.8          | 13.4                 | 46.6                         | 70.8               | 26.2                | 617    | 26.8          | 18.6                 | 53.7                         | 72.3               | 14.7                | 1,382  |
| Jammu & Kashmir       | 23.0          | 19.9                 | 54.7                         | 71.9               | 1.0                 | 881    | 24.3          | 19.2                 | 56.0                         | 83.1               | 8.2                 | 730    | 23.6          | 19.6                 | 55.4                         | 77.4               | 4.5                 | 1,611  |
| Punjab                | 9.9           | 20.7                 | 43.6                         | 64.5               | 7.0                 | 1,111  | 9.7           | 16.4                 | 43.8                         | 64.6               | 25.2                | 1,004  | 9.8           | 18.6                 | 43.7                         | 64.6               | 15.7                | 2,115  |
| Rajasthan             | 13.4          | 18.0                 | 36.0                         | 45.4               | 2.0                 | 1,161  | 12.8          | 17.6                 | 42.6                         | 65.4               | 12.7                | 1,077  | 13.1          | 17.8                 | 39.3                         | 55.4               | 7.4                 | 2,238  |
| Uttarakhand           | 25.8          | 17.4                 | 51.8                         | 66.1               | 3.5                 | 716    | 21.7          | 18.1                 | 53.3                         | 82.5               | 11.7                | 641    | 23.8          | 17.8                 | 52.6                         | 74.2               | 7.5                 | 1,357  |
| Central               |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| Chhattisgarh          | 9.4           | 12.8                 | 38.2                         | 44.1               | 1.8                 | 1,274  | 11.4          | 12.8                 | 47.9                         | 74.0               | 7.5                 | 779    | 10.2          | 12.8                 | 41.9                         | 55.6               | 4.0                 | 2,053  |
| Madhya Pradesh        | 11.1          | 24.5                 | 41.4                         | 48.8               | 3.2                 | 1,598  | 15.7          | 24.8                 | 47.2                         | 69.2               | 12.8                | 1,313  | 13.3          | 24.6                 | 44.2                         | 58.5               | 7.8                 | 2,911  |
| Uttar Pradesh         | 10.8          | 22.1                 | 42.8                         | 60.6               | 2.7                 | 2,395  | 10.6          | 18.2                 | 42.5                         | 76.1               | 13.9                | 2,167  | 10.7          | 20.2                 | 42.6                         | 68.2               | 8.2                 | 4,562  |
| East                  |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| Bihar                 | 15.9          | 31.2                 | 52.6                         | 50.9               | 1.9                 | 1,708  | 17.4          | 27.3                 | 53.9                         | 79.2               | 8.6                 | 1,807  | 16.7          | 29.1                 | 53.3                         | 66.2               | 5.5                 | 3,515  |
| Jharkhand             | 16.0          | 14.4                 | 38.2                         | 50.4               | 2.3                 | 1,293  | 16.3          | 13.9                 | 45.8                         | 82.2               | 5.8                 | 1,167  | 16.1          | 14.2                 | 41.9                         | 65.8               | 4.0                 | 2,460  |
| Odisha                | 13.5          | 11.5                 | 31.8                         | 39.9               | 12.0                | 1,675  | 14.0          | 12.2                 | 39.7                         | 76.1               | 7.8                 | 1,234  | 13.7          | 11.8                 | 35.2                         | 55.9               | 10.1                | 2,909  |
| West Bengal           | 26.2          | 21.2                 | 49.1                         | 37.2               | 2.8                 | 2,384  | 33.6          | 23.3                 | 59.3                         | 73.3               | 9.7                 | 1,541  | 29.2          | 22.0                 | 53.3                         | 51.8               | 5.6                 | 3,925  |
| Northeast             |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| Arunachal Pradesh     | 9.8           | 11.9                 | 46.0                         | 37.9               | 1.1                 | 897    | 13.1          | 13.3                 | 73.1                         | 78.0               | 3.5                 | 318    | 10.6          | 12.2                 | 52.6                         | 47.7               | 1.7                 | 1,215  |
| Assam                 | 9.6           | 11.9                 | 34.9                         | 32.6               | 1.0                 | 1,548  | 7.3           | 11.8                 | 42.5                         | 67.7               | 9.6                 | 814    | 8.8           | 11.8                 | 37.6                         | 45.2               | 4.1                 | 2,362  |
| Manipur               | 32.4          | 12.7                 | 55.5                         | 42.4               | 3.2                 | 761    | 35.6          | 11.0                 | 64.6                         | 77.2               | 7.0                 | 605    | 33.9          | 11.9                 | 59.7                         | 58.7               | 5.0                 | 1,366  |
| Meghalaya             | 8.0           | 5.7                  | 27.5                         | 27.5               | [0.5]               | 556    | 10.6          | 5.0                  | 61.5                         | 75.5               | 3.4                 | 411    | 9.0           | 5.4                  | 41.8                         | 47.7               | 1.7                 | 967    |
| Mizoram               | 30.1          | 19.3                 | 49.8                         | 64.4               | 1.9                 | 714    | 28.5          | 20.6                 | 58.2                         | 86.9               | 7.5                 | 531    | 29.3          | 19.9                 | 53.6                         | 74.5               | 4.5                 | 1,245  |
| Nagaland              | 16.9          | 5.4                  | 27.4                         | 47.7               | [0.6]               | 708    | 24.4          | 3.1                  | 32.7                         | 80.6               | 2.0                 | 607    | 20.6          | 4.3                  | 30.0                         | 63.8               | 1.3                 | 1,315  |
| Tripura               | 27.3          | 15.3                 | 48.1                         | 46.2               | 2.6                 | 732    | 22.1          | 11.4                 | 54.0                         | 68.8               | 14.2                | 459    | 25.3          | 13.8                 | 50.4                         | 55.1               | 7.1                 | 1,191  |
| West                  |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| Dadra & Nagar Haveli  | 29.0          | 12.4                 | 49.6                         | 66.5               | 2.2                 | 634    | 29.1          | 9.2                  | 53.7                         | 77.1               | 12.3                | 449    | 29.0          | 11.1                 | 51.2                         | 70.6               | 6.2                 | 1,083  |
| Daman & Diu           | 16.2          | 10.4                 | 38.6                         | 58.2               | 3.1                 | 557    | 12.0          | 3.9                  | 31.9                         | 66.9               | 13.8                | 429    | 14.2          | 7.3                  | 35.5                         | 62.3               | 8.1                 | 986    |
| Goa                   | 26.9          | 6.9                  | 40.4                         | 55.8               | 3.2                 | 788    | 25.8          | 7.6                  | 41.4                         | 71.6               | 18.7                | 634    | 26.4          | 7.2                  | 40.9                         | 63.0               | 10.3                | 1,422  |
| Gujarat               | 24.1          | 13.6                 | 45.5                         | 59.6               | 4.3                 | 1,342  | 23.0          | 11.1                 | 44.9                         | 66.1               | 21.3                | 981    | 23.6          | 12.5                 | 45.2                         | 62.5               | 12.0                | 2,323  |
| Maharashtra           | 17.3          | 10.0                 | 32.1                         | 42.3               | 1.4                 | 2,176  | 23.0          | 12.0                 | 43.6                         | 68.6               | 8.7                 | 1,783  | 20.1          | 11.0                 | 37.8                         | 55.2               | 4.9                 | 3,959  |

Continued

## Continued

| State/Union Territory     | Age 45-59*    |                      |                              |                    |                     |        | Age ≥ 60      |                      |                              |                    |                     |        | Total         |                      |                              |                    |                     |        |
|---------------------------|---------------|----------------------|------------------------------|--------------------|---------------------|--------|---------------|----------------------|------------------------------|--------------------|---------------------|--------|---------------|----------------------|------------------------------|--------------------|---------------------|--------|
|                           | Dental caries | Periodontal disease¹ | Common oral health problems² | Partial edentulism | Complete edentulism | Number | Dental caries | Periodontal disease¹ | Common oral health Problems² | Partial edentulism | Complete edentulism | Number | Dental caries | Periodontal disease¹ | Common oral health problems² | Partial edentulism | Complete edentulism | Number |
| <b>South</b>              |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |               |                      |                              |                    |                     |        |
| Andaman & Nicobar Islands | 17.6          | 14.2                 | 39.9                         | 29.2               | 0.9                 | 720    | 27.4          | 16.1                 | 56.6                         | 69.8               | 8.7                 | 521    | 21.6          | 15.0                 | 46.7                         | 45.7               | 4.1                 | 1,241  |
| Andhra Pradesh            | 12.6          | 5.2                  | 40.3                         | 37.9               | 1.9                 | 1,567  | 12.7          | 4.6                  | 62.0                         | 66.7               | 5.5                 | 1,100  | 12.7          | 5.0                  | 49.4                         | 50.0               | 3.4                 | 2,667  |
| Karnataka                 | 21.4          | 9.7                  | 51.8                         | 52.9               | 3.5                 | 1,410  | 27.3          | 13.4                 | 60.0                         | 68.1               | 8.5                 | 1,001  | 23.7          | 11.1                 | 55.0                         | 58.9               | 5.5                 | 2,411  |
| Kerala                    | 37.8          | 9.5                  | 51.6                         | 72.3               | 1.6                 | 1,276  | 43.2          | 8.3                  | 63.8                         | 82.0               | 11.1                | 1,206  | 40.6          | 8.9                  | 57.9                         | 77.3               | 6.5                 | 2,482  |
| Lakshadweep               | 32.5          | 3.8                  | 51.0                         | 67.3               | 2.7                 | 637    | 37.0          | 2.0                  | 52.1                         | 78.2               | 6.3                 | 500    | 34.6          | 2.9                  | 51.5                         | 72.5               | 4.4                 | 1,137  |
| Puducherry                | 32.3          | 4.1                  | 49.9                         | 49.2               | 1.0                 | 787    | 42.2          | 6.3                  | 64.8                         | 68.7               | 11.7                | 638    | 37.0          | 5.1                  | 56.9                         | 58.4               | 6.0                 | 1,425  |
| Tamil Nadu                | 31.4          | 6.8                  | 54.6                         | 46.0               | 1.8                 | 1,994  | 27.3          | 5.5                  | 70.2                         | 70.3               | 11.8                | 1,530  | 29.5          | 6.2                  | 61.8                         | 57.1               | 6.4                 | 3,524  |
| Telangana                 | 10.5          | 6.5                  | 37.7                         | 31.7               | 0.6                 | 1,406  | 10.5          | 9.5                  | 64.9                         | 64.4               | 4.6                 | 1,051  | 10.5          | 7.9                  | 49.8                         | 46.2               | 2.4                 | 2,457  |

## Notes

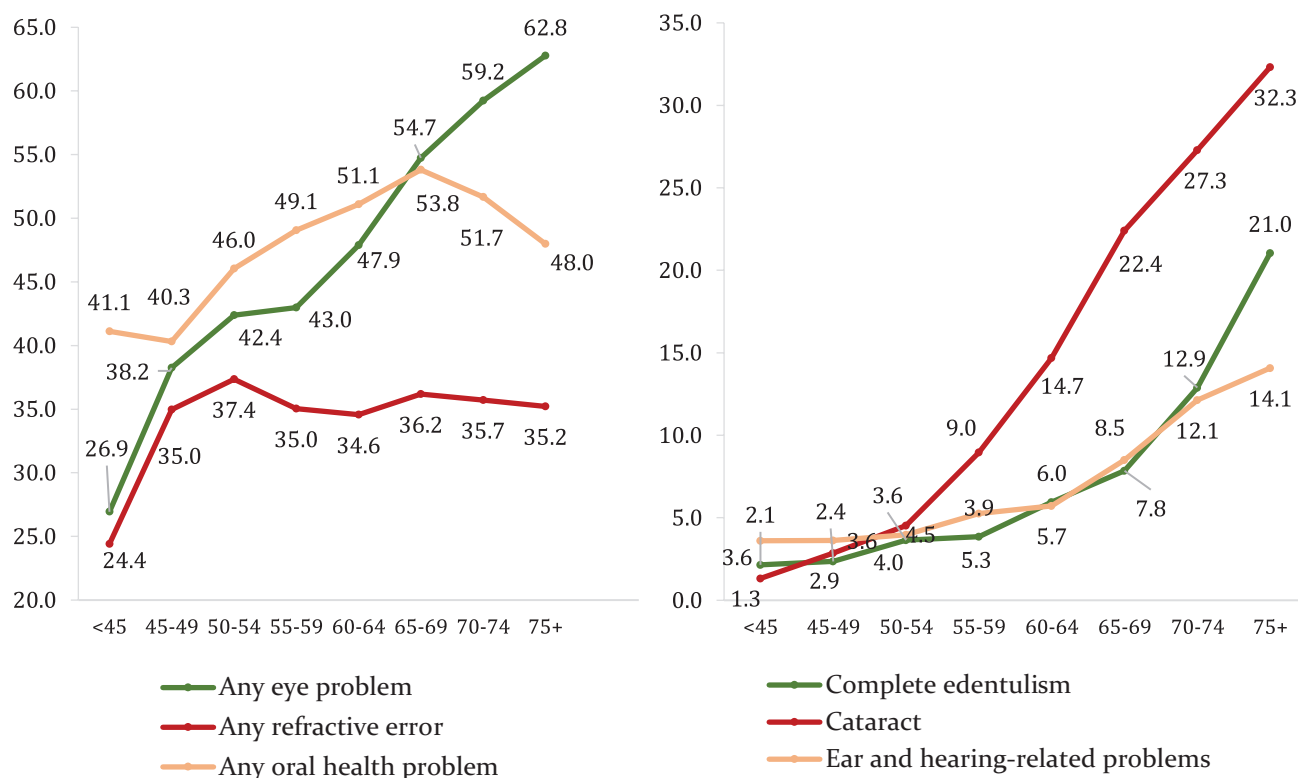
\* Including spouse irrespective of age, "[1]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

<sup>1</sup> Periodontal disease includes bleeding gums, swelling gums or ulcers lasting more than two weeks (any one or more).

<sup>2</sup> Common oral health problems include painful teeth, ulcers lasting more than two weeks, bleeding gums, swelling gums, loose teeth, dental cavity/dental caries & soreness or cracks in the corner of the mouth in the past 12 months (any one or more).

Figure 7.17 shows the age patterns for diagnosed organ-related conditions. The prevalence rates of all organ-related conditions sharply increases with age, except for the prevalence of refractive errors. The prevalence of any oral health problem shows a declining trend after age 70 as there is a sharp increase in prevalence of complete edentulism after age 70.

**Figure 7.17 Self-reported diagnosed organ-related conditions among older adults by age, India, LASI Wave 1, 2017-18**



## 7.5 MULTI-MORBIDITY

Multi-morbidity is defined as the simultaneous presence of two or more chronic health conditions in an individual. Ageing is associated with an increased risk of experiencing more than one chronic health condition at the same time (Arokiasamy et al., 2015). Multi-morbidity has been associated with adverse health outcomes, such as reduced physical function, poor quality of life, general health, increased use of inpatient and ambulatory care, and mortality (Arokiasamy et al., 2015; Nunes et al., 2016)

In the context of population ageing in India, a special focus on multi-morbidity is necessary to understand the comprehensive health profile of older adults. This section provides insight into the prevalence of a single morbidity and multi-morbidity conditions. Information on nine chronic health conditions are included in the measure of multi-morbidity: hypertension, chronic heart diseases, stroke, any chronic lung disease, diabetes, cancer or malignant tumour, any bone/joint disease, any neurological/psychiatric disease, and high cholesterol. Multi-morbidity is considered if the respondent is diagnosed by a health professional with at least two chronic health conditions.



Table 7.31 presents the self-reported prevalence of single and multi-morbidity conditions by background characteristics. In India, 26% of older adults age 45 and above have single morbidity condition, while 18% have multi-morbidity. The prevalence of multi-morbidity conditions is higher among elderly age 60 and above (23%) than among older adults age 45-59 (13%). Among elderly age 60 and above, the prevalence of multi-morbidity is much higher in those living in urban areas (36%) than those living in rural areas (18%) and higher among women (25%) than among men (22%). The prevalence of multi-morbidity conditions increases with education and MPCE quintiles, ranging from 18% among those with no schooling to 37% among those with 10 or more years of schooling and from 16% in the poorest MPCE quintile to 35% in the richest quintile. Age-specific differences in single morbidity and multi-morbidity are shown in Figure 7.18. The prevalence of single morbidity and multi-morbidity conditions increases with age.

**Figure 7.18 Multi-morbidity conditions (%) among older adults by age, India, LASI Wave 1, 2017-18**

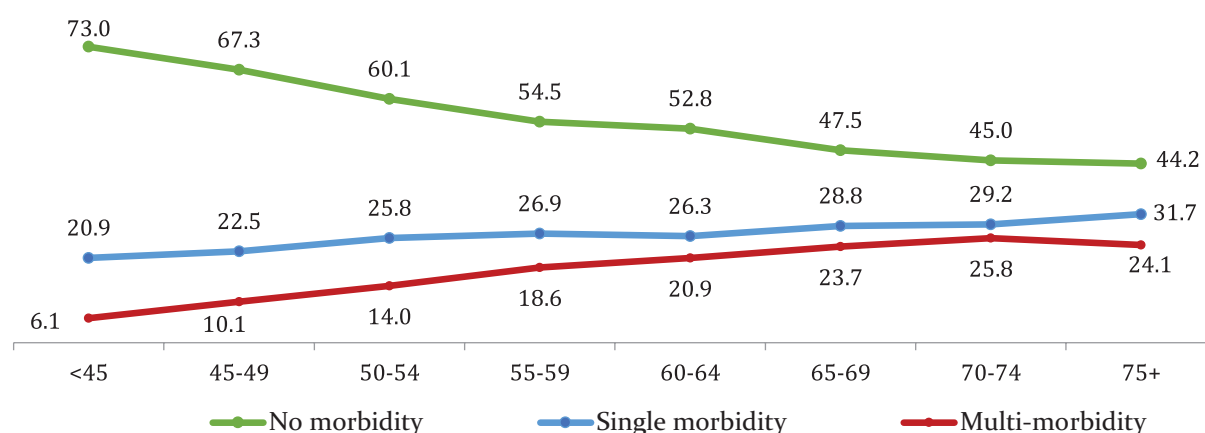


Table 7.32 presents the state-wise differences in multi-morbidity conditions. The prevalence of multi-morbidity conditions among older adults age 45 and above is higher in the demographically advanced states/UTs, with the highest being in Kerala (40%) followed by that in Lakshadweep (31%), Jammu & Kashmir (28%), Puducherry (27%), Chandigarh (27%), and Andaman & Nicobar Islands (27%). In comparison, the prevalence is lower in the north-eastern states such as in Arunachal Pradesh (9%), Nagaland (7%), and Mizoram (6%) besides Chhattisgarh (7%). One in every five elderly age 60 and above reported single chronic condition in all states/UTs of India, except in Nagaland (14%). The prevalence of multi-morbidity among elderly age 60 and above is higher in the states/UTs of Kerala (52%), Chandigarh (41%), Lakshadweep (40%), Goa (39%), and Andaman & Nicobar Islands (38%).

#### Key findings: multi-morbidity

- In India, almost a quarter (23%) of elderly age 60 and above have been diagnosed with multi-morbidity conditions and; elderly women are more likely to have multi-morbidity conditions.
- Elderly age 60 and above living in urban areas (36%), those with 10+ years of schooling (37%) and in the richest MPCE quintile (35%) are more likely to be diagnosed with multi-morbidity conditions.
- A higher proportion of elderly age 60 and above have been diagnosed with multi-morbidity in the states/UTs of Kerala (52%), Chandigarh (41%), Lakshadweep (40%), Goa (39%), Andaman & Nicobar (38%), and Puducherry (36%).

**Table 7.31 Self-reported prevalence (%) of diagnosed multi-morbidity conditions<sup>1</sup> among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59*   |                         |                               |        |              | Age ≥ 60                |                               |        |              |                         | Total                         |        |  |
|---------------------------------------------|--------------|-------------------------|-------------------------------|--------|--------------|-------------------------|-------------------------------|--------|--------------|-------------------------|-------------------------------|--------|--|
|                                             | No morbidity | Single health condition | Two Or more health conditions | Number | No morbidity | Single health condition | Two or more health conditions | Number | No morbidity | Single health condition | Two or more health conditions | Number |  |
| <b>Place of residence</b>                   |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Rural                                       | 67.1         | 23.4                    | 9.6                           | 25,754 | 54.2         | 27.5                    | 18.2                          | 20,691 | 61.0         | 25.3                    | 13.7                          | 46,445 |  |
| Urban                                       | 55.2         | 26.0                    | 18.7                          | 14,928 | 32.4         | 31.9                    | 35.7                          | 10,695 | 45.6         | 28.5                    | 25.9                          | 25,623 |  |
| <b>Sex</b>                                  |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Male                                        | 65.0         | 22.4                    | 12.6                          | 15,427 | 50.2         | 27.8                    | 22.0                          | 15,043 | 57.4         | 25.2                    | 17.4                          | 30,470 |  |
| Female                                      | 61.9         | 25.4                    | 12.7                          | 25,255 | 45.8         | 29.7                    | 24.6                          | 16,343 | 55.2         | 27.2                    | 17.6                          | 41,598 |  |
| <b>Marital status</b>                       |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Currently married                           | 63.4         | 24.1                    | 12.5                          | 35,386 | 49.0         | 28.4                    | 22.7                          | 19,870 | 58.0         | 25.7                    | 16.3                          | 55,256 |  |
| Widowed                                     | 57.9         | 26.8                    | 15.3                          | 3,864  | 45.5         | 29.7                    | 24.7                          | 10,694 | 48.4         | 29.0                    | 22.5                          | 14,558 |  |
| Divorced/Separated/<br>Deserted/Others      | 68.8         | 22.1                    | 9.1                           | 1,432  | 56.3         | 25.3                    | 18.4                          | 822    | 64.2         | 23.3                    | 12.5                          | 2,254  |  |
| <b>Living arrangement</b>                   |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Living alone                                | 57.8         | 29.1                    | 13.0                          | 689    | 45.8         | 31.7                    | 22.5                          | 1,619  | 48.6         | 31.1                    | 20.3                          | 2,308  |  |
| Living with spouse and/or<br>others         | 58.4         | 25.4                    | 16.2                          | 4,535  | 47.8         | 28.7                    | 23.5                          | 6,169  | 52.2         | 27.3                    | 20.5                          | 10,704 |  |
| Living with spouse and<br>children          | 64.2         | 23.8                    | 12.0                          | 30,197 | 49.6         | 28.1                    | 22.3                          | 13,461 | 59.6         | 25.2                    | 15.2                          | 43,658 |  |
| Living with children and<br>others          | 59.1         | 26.3                    | 14.6                          | 4,075  | 45.4         | 29.0                    | 25.6                          | 8,417  | 49.3         | 28.3                    | 22.4                          | 12,492 |  |
| Living with others only                     | 68.6         | 22.0                    | 9.4                           | 1,186  | 49.8         | 29.8                    | 20.4                          | 1,720  | 56.9         | 26.9                    | 16.2                          | 2,906  |  |
| <b>Religion</b>                             |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Hindu                                       | 64.6         | 24.0                    | 11.5                          | 29,856 | 48.8         | 28.6                    | 22.6                          | 22,984 | 57.3         | 26.1                    | 16.6                          | 52,840 |  |
| Muslim                                      | 52.2         | 26.9                    | 20.9                          | 4,927  | 43.1         | 30.7                    | 26.1                          | 3,721  | 48.2         | 28.6                    | 23.2                          | 8,648  |  |
| Christian                                   | 70.3         | 18.5                    | 11.2                          | 4,058  | 45.4         | 23.9                    | 30.7                          | 3,139  | 59.3         | 20.9                    | 19.8                          | 7,197  |  |
| Others                                      | 58.7         | 27.5                    | 13.8                          | 1,841  | 43.6         | 30.5                    | 25.9                          | 1,542  | 51.4         | 28.9                    | 19.7                          | 3,383  |  |
| <b>Caste/tribe</b>                          |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Scheduled tribe                             | 78.1         | 16.5                    | 5.4                           | 7,327  | 66.4         | 22.7                    | 10.9                          | 5,160  | 73.0         | 19.2                    | 7.8                           | 12,487 |  |
| Scheduled caste                             | 65.0         | 24.2                    | 10.7                          | 6,889  | 52.5         | 29.0                    | 18.4                          | 5,130  | 59.4         | 26.4                    | 14.2                          | 12,019 |  |
| Other backward class                        | 61.8         | 24.4                    | 13.8                          | 15,258 | 46.9         | 28.7                    | 24.5                          | 11,854 | 55.0         | 26.3                    | 18.7                          | 27,112 |  |
| None of the above                           | 58.7         | 26.8                    | 14.5                          | 11,208 | 40.9         | 30.6                    | 28.4                          | 9,242  | 50.3         | 28.6                    | 21.1                          | 20,450 |  |
| <b>Education</b>                            |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| No schooling                                | 65.4         | 23.6                    | 11.0                          | 16,288 | 54.5         | 27.9                    | 17.5                          | 16,860 | 59.7         | 25.9                    | 14.4                          | 33,148 |  |
| Less than 5 years complete                  | 62.3         | 24.9                    | 12.8                          | 4,264  | 42.3         | 32.2                    | 25.5                          | 3,775  | 52.6         | 28.4                    | 19.0                          | 8,039  |  |
| 5-9 years complete                          | 61.9         | 25.5                    | 12.7                          | 10,872 | 41.3         | 28.8                    | 29.8                          | 5,997  | 53.9         | 26.8                    | 19.3                          | 16,869 |  |
| 10 or more years complete                   | 60.3         | 23.9                    | 15.8                          | 9,258  | 33.7         | 29.4                    | 36.9                          | 4,754  | 51.1         | 25.8                    | 23.1                          | 14,012 |  |
| <b>Work status</b>                          |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |  |
| Currently working                           | 68.2         | 22.3                    | 9.5                           | 23,623 | 61.3         | 25.4                    | 13.3                          | 9,284  | 66.1         | 23.2                    | 10.6                          | 32,907 |  |
| Worked in past but currently<br>not working | 47.3         | 29.2                    | 23.5                          | 4,566  | 42.5         | 31.1                    | 26.5                          | 13,332 | 43.7         | 30.6                    | 25.7                          | 17,898 |  |
| Never worked                                | 59.0         | 26.3                    | 14.8                          | 12,493 | 40.9         | 29.1                    | 30.0                          | 8,770  | 51.0         | 27.5                    | 21.5                          | 21,263 |  |

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## Continued

| Background characteristics | Age 45-59*   |                         |                               |        | Age ≥ 60     |                         |                               |        | Total        |                         |                               |        |
|----------------------------|--------------|-------------------------|-------------------------------|--------|--------------|-------------------------|-------------------------------|--------|--------------|-------------------------|-------------------------------|--------|
|                            | No morbidity | Single health condition | Two Or more health conditions | Number | No morbidity | Single health condition | Two or more health conditions | Number | No morbidity | Single health condition | Two or more health conditions | Number |
| MPIE quintile              |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |
| Poorest                    | 71.6         | 21.1                    | 7.2                           | 7,652  | 56.9         | 27.5                    | 15.6                          | 6,463  | 64.5         | 24.2                    | 11.3                          | 14,115 |
| Poorer                     | 65.4         | 24.8                    | 9.8                           | 8,033  | 51.0         | 29.2                    | 19.8                          | 6,460  | 58.6         | 26.8                    | 14.5                          | 14,493 |
| Middle                     | 63.9         | 23.9                    | 12.1                          | 8,104  | 48.7         | 29.3                    | 22.0                          | 6,400  | 56.8         | 26.4                    | 16.7                          | 14,504 |
| Richer                     | 60.4         | 26.4                    | 13.1                          | 8,498  | 42.7         | 30.1                    | 27.2                          | 6,160  | 52.5         | 28.1                    | 19.5                          | 14,658 |
| Richest                    | 53.7         | 25.0                    | 21.3                          | 8,395  | 36.9         | 27.8                    | 35.2                          | 5,903  | 46.7         | 26.2                    | 27.1                          | 14,298 |
| Total                      | 63.1         | 24.3                    | 12.7                          | 40,682 | 47.9         | 28.8                    | 23.3                          | 31,386 | 56.1         | 26.3                    | 17.5                          | 72,068 |

## Notes

\* Including spouse irrespective of age

<sup>1</sup>Multi-morbidity conditions refer to the presence of two or more chronic diseases which include hypertension, chronic heart diseases, stroke, any chronic lung disease, diabetes, cancer or malignant tumor, any bone/joint disease, any neurological/psychiatric disease or high cholesterol

**Table 7.32 Self-reported prevalence (%) of diagnosed multi-morbidity conditions<sup>1</sup> among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*   |                         |                               |                         |                         |                               | Age ≥ 60     |                         |                               |                         |                         |                               | Total        |                         |                               |
|-----------------------|--------------|-------------------------|-------------------------------|-------------------------|-------------------------|-------------------------------|--------------|-------------------------|-------------------------------|-------------------------|-------------------------|-------------------------------|--------------|-------------------------|-------------------------------|
|                       | No morbidity |                         |                               | Single health condition |                         |                               | No morbidity |                         |                               | Single health condition |                         |                               | No morbidity |                         |                               |
|                       | No morbidity | Single health condition | Two or more health conditions | No morbidity            | Single health condition | Two or more health conditions | No morbidity | Single health condition | Two or more health conditions | No morbidity            | Single health condition | Two or more health conditions | No morbidity | Single health condition | Two or more health conditions |
| <b>India</b>          | <b>63.1</b>  | <b>24.3</b>             | <b>12.7</b>                   | <b>40,682</b>           | <b>47.9</b>             | <b>28.8</b>                   | <b>23.3</b>  | <b>31,386</b>           | <b>56.1</b>                   | <b>26.3</b>             | <b>17.5</b>             | <b>72,068</b>                 |              |                         |                               |
| <b>North</b>          |              |                         |                               |                         |                         |                               |              |                         |                               |                         |                         |                               |              |                         |                               |
| Chandigarh            | 51.0         | 30.5                    | 18.5                          | 625                     | 33.2                    | 25.8                          | 41.0         | 389                     | 43.9                          | 28.6                    | 27.4                    | 1,014                         |              |                         |                               |
| Delhi                 | 60.1         | 27.3                    | 12.6                          | 822                     | 38.6                    | 30.2                          | 31.2         | 495                     | 51.9                          | 28.4                    | 19.7                    | 1,317                         |              |                         |                               |
| Haryana               | 57.9         | 31.5                    | 10.5                          | 1,048                   | 44.5                    | 37.1                          | 18.4         | 847                     | 51.5                          | 34.2                    | 14.3                    | 1,895                         |              |                         |                               |
| Himachal Pradesh      | 61.5         | 25.3                    | 13.2                          | 765                     | 43.8                    | 31.6                          | 24.7         | 618                     | 53.1                          | 28.3                    | 18.6                    | 1,383                         |              |                         |                               |
| Jammu & Kashmir       | 49.1         | 30.9                    | 20.0                          | 881                     | 33.5                    | 31.2                          | 35.3         | 730                     | 41.5                          | 31.0                    | 27.5                    | 1,611                         |              |                         |                               |
| Punjab                | 51.9         | 27.2                    | 20.9                          | 1,112                   | 39.6                    | 29.0                          | 31.4         | 1,004                   | 46.0                          | 28.1                    | 26.0                    | 2,116                         |              |                         |                               |
| Rajasthan             | 62.9         | 27.6                    | 9.5                           | 1,161                   | 48.7                    | 30.9                          | 20.4         | 1,077                   | 55.8                          | 29.2                    | 15.0                    | 2,238                         |              |                         |                               |
| Uttarakhand           | 59.2         | 26.6                    | 14.2                          | 715                     | 50.3                    | 32.9                          | 16.8         | 641                     | 54.8                          | 29.7                    | 15.4                    | 1,356                         |              |                         |                               |
| <b>Central</b>        |              |                         |                               |                         |                         |                               |              |                         |                               |                         |                         |                               |              |                         |                               |
| Chhattisgarh          | 79.3         | 15.7                    | 5.0                           | 1,275                   | 66.4                    | 22.5                          | 11.2         | 779                     | 74.3                          | 18.3                    | 7.4                     | 2,054                         |              |                         |                               |
| Madhya Pradesh        | 70.0         | 22.5                    | 7.5                           | 1,599                   | 63.4                    | 22.6                          | 14.0         | 1,313                   | 66.8                          | 22.6                    | 10.6                    | 2,912                         |              |                         |                               |
| Uttar Pradesh         | 71.2         | 20.8                    | 8.0                           | 2,395                   | 63.7                    | 24.1                          | 12.2         | 2,167                   | 67.5                          | 22.4                    | 10.1                    | 4,562                         |              |                         |                               |
| <b>East</b>           |              |                         |                               |                         |                         |                               |              |                         |                               |                         |                         |                               |              |                         |                               |
| Bihar                 | 66.8         | 23.8                    | 9.3                           | 1,709                   | 59.7                    | 24.8                          | 15.5         | 1,807                   | 63.0                          | 24.4                    | 12.7                    | 3,516                         |              |                         |                               |
| Jharkhand             | 74.3         | 18.8                    | 6.9                           | 1,294                   | 61.1                    | 26.1                          | 12.9         | 1,168                   | 67.9                          | 22.3                    | 9.8                     | 2,462                         |              |                         |                               |
| Odisha                | 73.3         | 19.1                    | 7.7                           | 1,676                   | 56.8                    | 26.0                          | 17.1         | 1,235                   | 66.0                          | 22.1                    | 11.8                    | 2,911                         |              |                         |                               |
| West Bengal           | 52.6         | 29.0                    | 18.4                          | 2,384                   | 35.9                    | 29.0                          | 35.1         | 1,540                   | 45.9                          | 29.0                    | 25.2                    | 3,924                         |              |                         |                               |
| <b>Northeast</b>      |              |                         |                               |                         |                         |                               |              |                         |                               |                         |                         |                               |              |                         |                               |
| Arunachal Pradesh     | 77.0         | 15.4                    | 7.7                           | 897                     | 62.6                    | 24.4                          | 13.0         | 318                     | 73.5                          | 17.6                    | 9.0                     | 1,215                         |              |                         |                               |
| Assam                 | 68.1         | 25.6                    | 6.3                           | 1,548                   | 52.5                    | 31.5                          | 16.0         | 814                     | 62.5                          | 27.7                    | 9.8                     | 2,362                         |              |                         |                               |
| Manipur               | 70.4         | 21.4                    | 8.2                           | 761                     | 56.6                    | 28.0                          | 15.4         | 605                     | 64.0                          | 24.5                    | 11.6                    | 1,366                         |              |                         |                               |
| Meghalaya             | 77.3         | 20.0                    | 2.7                           | 556                     | 61.8                    | 27.8                          | 10.4         | 411                     | 70.8                          | 23.3                    | 5.9                     | 967                           |              |                         |                               |
| Mizoram               | 73.8         | 18.7                    | 7.5                           | 714                     | 52.0                    | 30.4                          | 17.6         | 531                     | 64.0                          | 24.0                    | 12.0                    | 1,245                         |              |                         |                               |
| Nagaland              | 81.8         | 12.2                    | 6.0                           | 708                     | 78.5                    | 14.2                          | 7.3          | 605                     | 80.2                          | 13.2                    | 6.6                     | 1,313                         |              |                         |                               |
| Tripura               | 62.8         | 27.3                    | 9.9                           | 732                     | 47.2                    | 31.5                          | 21.3         | 460                     | 56.6                          | 29.0                    | 14.4                    | 1,192                         |              |                         |                               |
| <b>West</b>           |              |                         |                               |                         |                         |                               |              |                         |                               |                         |                         |                               |              |                         |                               |
| Dadra & Nagar Haveli  | 68.1         | 19.9                    | 12.0                          | 635                     | 52.7                    | 26.2                          | 21.1         | 450                     | 62.1                          | 22.4                    | 15.5                    | 1,085                         |              |                         |                               |
| Daman & Diu           | 52.5         | 26.9                    | 20.5                          | 557                     | 35.4                    | 31.6                          | 33.0         | 429                     | 44.4                          | 29.2                    | 26.4                    | 986                           |              |                         |                               |
| Goa                   | 55.0         | 29.7                    | 15.3                          | 788                     | 26.6                    | 34.5                          | 38.8         | 634                     | 42.1                          | 31.9                    | 26.0                    | 1,422                         |              |                         |                               |
| Gujarat               | 64.6         | 23.6                    | 11.7                          | 1,344                   | 46.0                    | 28.1                          | 25.8         | 984                     | 56.3                          | 25.7                    | 18.1                    | 2,328                         |              |                         |                               |
| Maharashtra           | 63.6         | 25.2                    | 11.2                          | 2,176                   | 37.6                    | 34.0                          | 28.4         | 1,786                   | 50.9                          | 29.5                    | 19.6                    | 3,962                         |              |                         |                               |

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Continued

| State/Union Territory     | Age 45-59*   |                         |                               |        | Age ≥ 60     |                         |                               |        | Total        |                         |                               |        |
|---------------------------|--------------|-------------------------|-------------------------------|--------|--------------|-------------------------|-------------------------------|--------|--------------|-------------------------|-------------------------------|--------|
|                           | No morbidity | Single health condition | Two or more health conditions | Number | No morbidity | Single health condition | Two or more health conditions | Number | No morbidity | Single health condition | Two or more health conditions | Number |
|                           |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |
| South                     |              |                         |                               |        |              |                         |                               |        |              |                         |                               |        |
| Andaman & Nicobar Islands | 52.0         | 28.8                    | 19.3                          | 721    | 31.3         | 30.4                    | 38.3                          | 521    | 43.6         | 29.4                    | 27.0                          | 1,242  |
| Andhra Pradesh            | 53.3         | 30.1                    | 16.6                          | 1,569  | 35.0         | 32.6                    | 32.5                          | 1,101  | 45.6         | 31.1                    | 23.2                          | 2,670  |
| Karnataka                 | 64.1         | 19.5                    | 16.4                          | 1,411  | 44.8         | 28.4                    | 26.8                          | 1,002  | 56.5         | 23.0                    | 20.5                          | 2,413  |
| Kerala                    | 43.5         | 30.1                    | 26.4                          | 1,277  | 21.4         | 26.4                    | 52.2                          | 1,206  | 32.1         | 28.2                    | 39.8                          | 2,483  |
| Lakshadweep               | 50.1         | 27.5                    | 22.4                          | 637    | 31.8         | 28.5                    | 39.6                          | 500    | 41.4         | 28.0                    | 30.6                          | 1,137  |
| Puducherry                | 52.9         | 27.7                    | 19.4                          | 787    | 33.1         | 30.7                    | 36.2                          | 638    | 43.7         | 29.1                    | 27.3                          | 1,425  |
| Tamil Nadu                | 57.1         | 27.9                    | 15.0                          | 1,995  | 36.9         | 32.5                    | 30.6                          | 1,530  | 47.8         | 30.0                    | 22.1                          | 3,525  |
| Telangana                 | 57.7         | 27.0                    | 15.3                          | 1,408  | 33.8         | 35.5                    | 30.7                          | 1,051  | 47.1         | 30.8                    | 22.2                          | 2,459  |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Multi-morbidity conditions refer to the presence of two or more chronic diseases which include hypertension, chronic heart diseases, stroke, any chronic lung disease, diabetes, cancer or malignant tumor, any bone/joint disease, any neurological/psychiatric disease or high cholesterol

## 8. SYMPTOMS, INJURIES, ENDEMIC DISEASES, AND WOMEN'S HEALTH

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India is currently facing a double burden of disease. On one hand, the prevalence of non-communicable diseases is growing fast; on the other hand, the prevalence of infectious disease, common health conditions such as pain and sleep, injury, falls, and women's health problems are contributing significantly to disease burden in India (Arokiasamy, 2018; Paul and Singh, 2017; Williams et al., 2015). Endemic diseases continue to be important public health issues in India. In addition, the prevalence of sleep problems was 15% among older adults in India in 2006-2007 (Koyanagi et al., 2014), and body pain is also common among older Indian adults. (Williams et al., 2015; Saxena, Jain and Bhatnagar, 2018). However, elderly persons do not consider pain as a problem, and previous studies have shown that people in general do not seek treatment for sleep. Measuring sleep or pain has several limitations, such as underreporting or being considered as a normal aspect of ageing. However, the health implications of sleep and pain are serious, because these conditions are closely linked with cognitive impairment, morbidity, and mortality (Macfarlane et al., 2001; Rod et al., 2010). Furthermore, the older population is vulnerable to natural disasters, such as heat waves, seasonal floods, and tsunami, which have significant health implications (Bukvic et al., 2018). Therefore, understanding the health implications of natural disasters will be beneficial from a public policy perspective.

In LASI, information was collected on symptom-based health conditions: angina, sleep, and pain. Information was also collected on other health domains such as endemic diseases, health events (injury and falls), health problems due to disaster. There is another domain of ill health that is often underreported and is left unaddressed – women's health, which primarily involve the changes that occur in women's body especially after menopause, and as they age. In LASI, questions were asked only to the women on their reproductive health issues.

### 8.1 SYMPTOM-BASED HEALTH CONDITIONS

Inadequate health-care services and low health awareness are likely to contribute to lower rates of diagnosis and treatment of chronic diseases, and a rising disease burden due to these conditions (Samb et al., 2010). To assess the disease burden that remains undiagnosed, it is necessary to develop tools that can identify chronic health conditions based on an algorithm of the symptomatic patterns of particular diseases. Apart from the self-reported diagnosed conditions described in the previous chapter on chronic health conditions, in the LASI, an additional set of symptom-based questions were asked to assess the prevalence of angina pectoris, pain, and sleep problems.

#### 8.1.1 *Angina pectoris*

Angina, a risk factor for ischaemic heart disease, refers to chest pain or discomfort, which occurs when the area surrounding the heart muscles does not receive oxygen sufficiently. This arterial blockage interrupts or stops the blood flow to the heart muscles, eventually resulting in the occurrence of angina. Those with symptoms suggestive of angina are at higher risk of ischaemic heart diseases (IHD) and therefore, is considered to be an alarming sign of increased risk of heart attack. In the LASI, the World Health Organisation's Rose Angina Questionnaire (Rose, 1962) was used for the symptom-based assessment of angina pectoris. The Rose questionnaire is a screening tool that has been shown to be predictive of ischaemic heart disease. Details of the questions included in the questionnaire and the algorithm followed in measuring angina are shown in the flowchart below:

**Chart 8.1: The Rose questionnaire algorithm used to calculate the prevalence of symptom-based angina pectoris in the LASI**

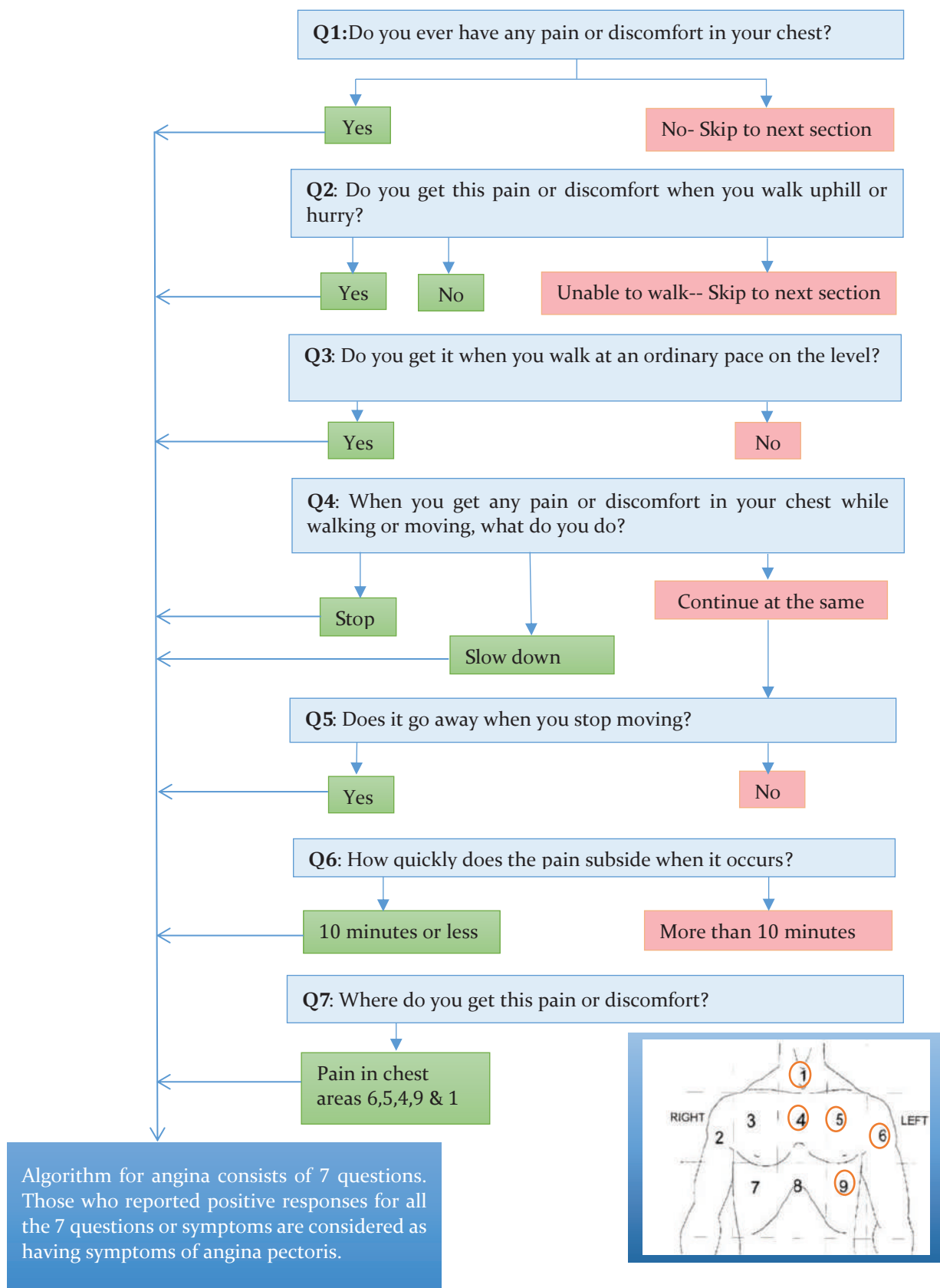
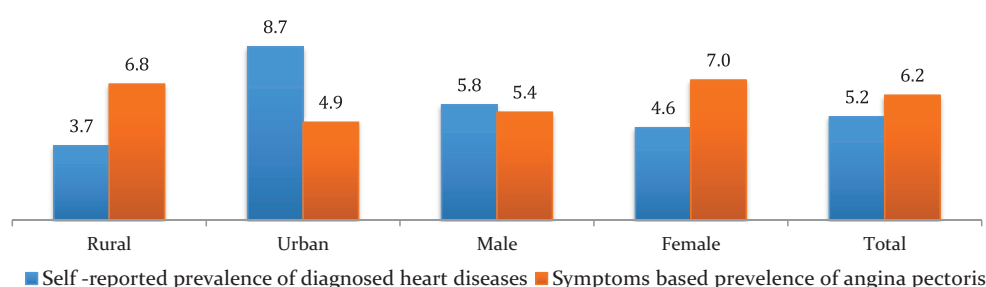




Table 8.1 presents the symptom-based prevalence of angina pectoris in India by background characteristics. The overall prevalence of angina pectoris among older adults age 45 and above is 6%; the prevalence of angina is slightly higher among the elderly age 60 and above (6%) compared to older adults age 45-59 (5%). Among the elderly age 60 and above, the prevalence of angina pectoris is higher in rural (7%) than urban areas (5%); women (7%) have higher prevalence of angina than men (5%). The prevalence of angina among both older adults age 45-59 and elderly age 60 and above decreases as educational attainment increases.

Figure 8.1 shows the comparison of the self-reported diagnosed prevalence of heart disease and prevalence of angina pectoris based on the Rose questionnaire's symptom-based algorithm. The prevalence of angina is much higher than the prevalence of diagnosed heart disease among rural elderly and elderly women. However, the diagnosed prevalence of heart disease is higher than symptom-based prevalence of angina among urban elderly and elderly men. This pattern suggests that the burden of undiagnosed heart diseases in India is much higher among rural elderly and elderly women.

**Figure 8.1 Self-reported diagnosed prevalence of heart diseases and symptom-based prevalence of angina pectoris among elderly age 60 and above by place of residence and sex, India, LASI Wave 1, 2017-18**



Cross-state variations in the prevalence of angina is shown in Table 8.2. The prevalence of angina pectoris among older adults age 45 and above varied from approximately 19% in Himachal Pradesh to 2% in Lakshadweep and Haryana. More than one in ten elderly age 60 and above have symptomatic angina in the states/UTs of Himachal Pradesh (20%), Meghalaya (15%), Uttarakhand (13%), and Maharashtra (10%). However, the prevalence of symptomatic angina is relatively lower among elderly age 60 and above in the southern Indian states/UTs of Karnataka (4%), Tamil Nadu (4%), Telangana (3%), Andhra Pradesh (3%), and Lakshadweep (2%).

### 8.1.2 Sleep problems and pain

Sleep disturbance and the experience of pain are both common among elderly adults (Zimmerman et al., 2015). Natural age-related changes in sleep patterns and the circadian rhythm, which further contribute to insomnia, including advanced sleep related disorders, are characterised by falling asleep early and waking-up early (Koffel et al., 2019).

In the LASI, sleep problem was defined as difficulty in falling or staying asleep or having sleep that is non-restorative and which results in significant daytime impairment. Information related to sleep included questions on quality of sleep in the month prior to the interview, medications or other form of treatment taken to help the respondent sleep, and whether these medications or treatments were recommended by a health professional. Questions on quality of sleep included a total of five domains: trouble falling asleep, waking up at night and having trouble getting back to sleep, waking too early in the morning and not being able to fall asleep, feeling unrested during the day, and taking a nap during the day.

Information on the frequency of each of these, such as rarely (1-2 nights per week), occasionally (3-4 nights per week), and frequently (5 or more nights per week), was also collected. If respondents reported that all problems described in the quality of sleep questions occurred frequently, they are considered as having symptom-based sleep problems.

The symptom-based prevalence of any type of sleep problem among older adults age 45 and above in India is 13% (Table 8.1). This prevalence is higher among elderly age 60 and above (15%) compared to older adults age 45-59 (11%). The prevalence of symptom-based sleep problems among elderly age 60 and above is also higher in rural (16%) than urban area areas (13%), as well as higher among women (16%) than men (14%). The prevalence of symptom-based sleep problems decreases as educational attainment increases.

Table 8.2 presents variations by state in the prevalence of any sleep problem among older adults. In most Indian states/UTs, the prevalence of any sleep problem is higher among elderly age 60 and above compared to that among older adults age 45-59. Among all the states/UTs, the prevalence of sleep problems among older adults age 45 and above is highest in Madhya Pradesh (19%), followed by Puducherry (18%) and Gujarat (18%). Around a fifth of the elderly age 60 and above have sleep problems in the states/UTs of Madhya Pradesh (22%), Punjab (21%), Puducherry (21%), Kerala (20%), and Delhi (20%). In the north-eastern states of Manipur (4%), Mizoram (3%) and Nagaland (2%), less than 5% of the elderly age 60 and above reported sleep problems.

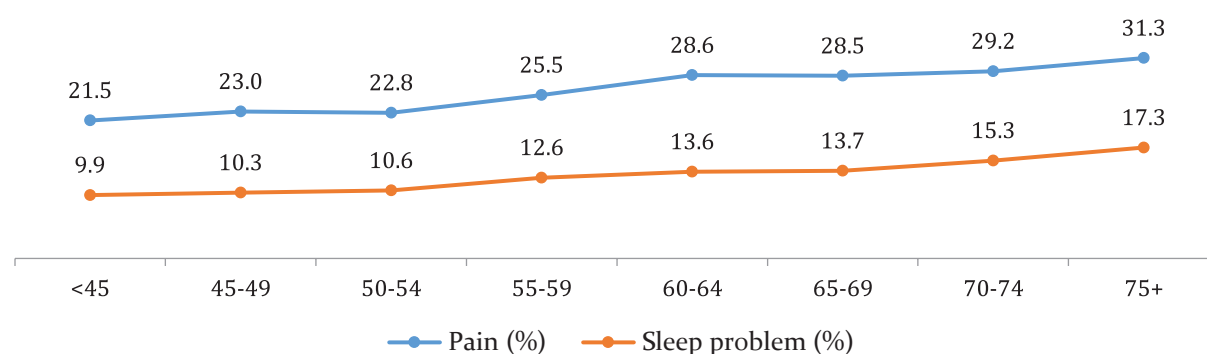
In the LASI, all respondents were asked whether they are often troubled with pain. Those who reported problem of pain were further asked about the frequency of pain, any medication taken to get relief from pain, type of treatment taken for relief, and whether the pain interferes with activities of daily household chores or work. Pain was considered as a problem when the respondent reported that they were troubled by pain and they required some form of medication or treatment for relief of pain.

The symptom-based prevalence of pain among older adults is presented in Tables 8.1 and 8.2 by background characteristics and by states/UTs, respectively. In India, a little more than a quarter of older adults age 45 and above (26%) reported having pain that required treatment. The prevalence of pain is higher among elderly (29%) than among older adults age 45-59 (23%). Among the elderly age 60 and above, the prevalence of pain is higher in rural areas (30%) and among women (33%) than their respective counterparts (27% in urban areas and 25% among men). Approximately one third of the elderly age 60 and above living alone (33%) and Muslim (34%) elderly reported being troubled by pain.

The prevalence of pain among older adults age 45 and above is highest in the states/UTs of Puducherry (48%), followed by Odisha (43%), Jharkhand (41%), Daman & Diu (35%), Himachal Pradesh (35%), and Bihar (33%). Around half of the elderly age 60 and above in the states/UTs of Puducherry (54%), Odisha (49%), and Jharkhand (47%) reported having trouble with pain; however, less than 10% of the elderly age 60 and above in Meghalaya (8%) and Mizoram (1.3%) reported having trouble with pain.

Figure 8.2 shows the prevalence of sleep problems and pain by age. A steady increase in the prevalence of pain as well as the prevalence of any sleep problem is found to correspond with advancing age. In particular, a sharper increase is noted after age 55. For pain, the prevalence varies from 23% among older adults age 45-49 to 31% among oldest old age 75 and above. For any sleep problem, the prevalence varied from 10% among older adults age 45-49 to 17% among the elderly age 75 and above.

**Figure 8.2 Prevalence (%) of sleep problem and pain among older adults by age, India, LASI Wave 1, 2017-18**



### Key findings: angina, sleep, and pain

- Overall, among the elderly age 60 and above, symptom-based prevalence of angina pectoris is 6%. The prevalence of angina is much higher than diagnosed prevalence of heart disease among rural elderly and elderly women age 60 and above. Whereas, the diagnosed prevalence of heart disease is higher compared with symptom-based prevalence among urban elderly and elderly men age 60 and above. This pattern of evidence suggest that burden of undiagnosed heart diseases is much higher among elderly in rural area and elderly women.
- More than one in ten elderly age 60 and above have symptomatic angina in the states/UTs of Himachal Pradesh (20%), Meghalaya (15%), Uttarakhand (13%), and Maharashtra (10%).
- In India, 15% of elderly age 60 and above have sleep problems and around a fifth of elderly age 60 and above have sleep problems in the states/UTs of Madhya Pradesh (22%), Punjab (21%), Puducherry (21%), Kerala (20%), and Delhi (20%).
- More than a quarter of elderly age 60 and above experienced pain (29%) and around half of elderly age 60 and above from Puducherry (54%), Odisha (49%) and Jharkhand (47%) reported trouble with pain.

**Table 8.1 Self-reported prevalence (%) of symptom-based health conditions: angina pectoris, pain and sleep problem among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*                   |                   |                            |        | Age ≥ 60                     |                   |                            |        | Total                        |                   |                            |        |
|------------------------------------------|------------------------------|-------------------|----------------------------|--------|------------------------------|-------------------|----------------------------|--------|------------------------------|-------------------|----------------------------|--------|
|                                          | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number |
| <b>Place of residence</b>                |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Rural                                    | 6.5                          | 25.4              | 11.8                       | 25,740 | 6.8                          | 30.2              | 15.6                       | 20,678 | 6.6                          | 27.7              | 13.6                       | 46,418 |
| Urban                                    | 3.2                          | 19.3              | 9.0                        | 14,908 | 4.9                          | 27.2              | 12.8                       | 10,680 | 3.9                          | 22.6              | 10.6                       | 25,588 |
| <b>Sex</b>                               |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Male                                     | 3.9                          | 17.8              | 9.8                        | 15,413 | 5.4                          | 25.1              | 13.9                       | 15,031 | 4.7                          | 21.6              | 11.9                       | 30,444 |
| Female                                   | 6.3                          | 26.6              | 11.5                       | 25,235 | 7.0                          | 33.0              | 15.6                       | 16,327 | 6.6                          | 29.3              | 13.2                       | 41,562 |
| <b>Marital status</b>                    |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Currently married                        | 5.4                          | 23.2              | 10.4                       | 35,355 | 6.5                          | 28.9              | 13.8                       | 19,852 | 5.8                          | 25.3              | 11.7                       | 55,207 |
| Widowed                                  | 6.5                          | 26.1              | 16.0                       | 3,863  | 6.0                          | 30.4              | 16.5                       | 10,684 | 6.1                          | 29.4              | 16.4                       | 14,547 |
| Divorced/Separated/Deserted/ Others      | 3.8                          | 18.0              | 8.5                        | 1,430  | 4.0                          | 22.0              | 12.2                       | 822    | 3.8                          | 19.5              | 9.8                        | 2,252  |
| <b>Living arrangement</b>                |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Living alone                             | 4.6                          | 26.4              | 14.4                       | 689    | 5.8                          | 32.7              | 18.6                       | 1,618  | 5.6                          | 31.3              | 17.7                       | 2,307  |
| Living with spouse and/or others         | 5.4                          | 23.5              | 10.7                       | 4,504  | 6.7                          | 29.4              | 14.0                       | 6,149  | 6.1                          | 26.9              | 12.7                       | 10,653 |
| Living with spouse and children          | 5.3                          | 23.1              | 10.4                       | 30,198 | 6.4                          | 28.8              | 13.6                       | 13,463 | 5.7                          | 24.9              | 11.4                       | 43,661 |
| Living with children and others          | 6.6                          | 26.0              | 14.7                       | 4,075  | 5.9                          | 30.0              | 16.1                       | 8,415  | 6.1                          | 28.8              | 15.7                       | 12,490 |
| Living with others only                  | 3.8                          | 19.0              | 10.5                       | 1,182  | 5.3                          | 26.5              | 15.1                       | 1,713  | 4.8                          | 23.7              | 13.4                       | 2,895  |
| <b>Religion</b>                          |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Hindu                                    | 5.3                          | 23.3              | 10.8                       | 29,831 | 6.1                          | 28.8              | 14.6                       | 22,960 | 5.6                          | 25.8              | 12.6                       | 52,791 |
| Muslim                                   | 6.8                          | 25.4              | 11.5                       | 4,920  | 7.1                          | 34.2              | 15.6                       | 3,718  | 6.9                          | 29.2              | 13.3                       | 8,638  |
| Christian                                | 3.7                          | 17.0              | 9.9                        | 4,056  | 4.8                          | 29.3              | 11.2                       | 3,139  | 4.2                          | 22.4              | 10.5                       | 7,195  |
| Others                                   | 5.5                          | 23.1              | 11.7                       | 1,841  | 8.6                          | 25.6              | 18.6                       | 1,541  | 7.0                          | 24.3              | 15.1                       | 3,382  |
| <b>Caste/tribe</b>                       |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Scheduled tribe                          | 5.3                          | 22.6              | 10.1                       | 7,325  | 6.3                          | 27.8              | 13.1                       | 5,156  | 5.7                          | 24.9              | 11.4                       | 12,481 |
| Scheduled caste                          | 5.8                          | 25.4              | 13.2                       | 6,884  | 6.2                          | 29.4              | 17.6                       | 5,128  | 6.0                          | 27.2              | 15.2                       | 12,012 |
| Other backward caste                     | 5.0                          | 22.6              | 10.3                       | 15,240 | 6.2                          | 29.0              | 14.2                       | 11,836 | 5.5                          | 25.5              | 12.1                       | 27,076 |
| None of the above                        | 6.0                          | 23.3              | 10.5                       | 11,199 | 6.2                          | 30.3              | 14.2                       | 9,238  | 6.1                          | 26.6              | 12.3                       | 20,437 |
| <b>Education</b>                         |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| No schooling                             | 6.8                          | 25.3              | 12.4                       | 16,275 | 6.7                          | 30.9              | 15.5                       | 16,850 | 6.7                          | 28.2              | 14.0                       | 33,125 |
| Less than 5 years complete               | 5.8                          | 29.2              | 13.1                       | 4,260  | 7.3                          | 33.1              | 15.6                       | 3,772  | 6.5                          | 31.1              | 14.3                       | 8,032  |
| 5-9 years complete                       | 5.0                          | 23.6              | 11.2                       | 10,866 | 6.2                          | 27.3              | 13.7                       | 5,988  | 5.5                          | 25.0              | 12.1                       | 16,854 |
| 10 or more years complete                | 3.0                          | 16.4              | 6.7                        | 9,247  | 3.5                          | 22.3              | 12.3                       | 4,748  | 3.2                          | 18.5              | 8.6                        | 13,995 |
| <b>Work status</b>                       |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |        |
| Currently working                        | 5.2                          | 21.6              | 10.0                       | 23,603 | 6.1                          | 26.5              | 11.8                       | 9,277  | 5.5                          | 23.1              | 10.5                       | 32,880 |
| Worked in past but currently not working | 6.8                          | 29.7              | 16.2                       | 4,563  | 5.7                          | 31.0              | 17.3                       | 13,320 | 6.0                          | 30.7              | 17.0                       | 17,883 |
| Never worked                             | 5.3                          | 24.1              | 10.6                       | 12,482 | 7.3                          | 29.9              | 14.2                       | 8,761  | 6.2                          | 26.7              | 12.2                       | 21,243 |

continued

continued

| Background characteristics | Age 45-59*                   |                   |                            |               |                              | Age ≥ 60          |                            |               |                              |                   | Total                      |               |
|----------------------------|------------------------------|-------------------|----------------------------|---------------|------------------------------|-------------------|----------------------------|---------------|------------------------------|-------------------|----------------------------|---------------|
|                            | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number        | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number        | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number        |
| <b>MPCE quintile</b>       |                              |                   |                            |               |                              |                   |                            |               |                              |                   |                            |               |
| Poorest                    | 4.9                          | 22.4              | 9.9                        | 7,646         | 6.2                          | 28.8              | 14.6                       | 6,460         | 5.5                          | 25.5              | 12.1                       | 14,106        |
| Poorer                     | 5.9                          | 23.3              | 11.2                       | 8,027         | 5.3                          | 29.3              | 15.1                       | 6,452         | 5.6                          | 26.1              | 13.0                       | 14,479        |
| Middle                     | 5.2                          | 23.9              | 11.0                       | 8,096         | 6.8                          | 30.4              | 14.5                       | 6,395         | 5.9                          | 27.0              | 12.6                       | 14,491        |
| Richer                     | 6.2                          | 23.9              | 11.4                       | 8,489         | 6.4                          | 28.3              | 13.9                       | 6,153         | 6.3                          | 25.9              | 12.5                       | 14,642        |
| Richest                    | 4.8                          | 23.0              | 10.9                       | 8,390         | 6.7                          | 29.9              | 15.9                       | 5,898         | 5.6                          | 25.9              | 13.0                       | 14,288        |
| <b>Total</b>               | <b>5.4</b>                   | <b>23.3</b>       | <b>10.9</b>                | <b>40,648</b> | <b>6.2</b>                   | <b>29.3</b>       | <b>14.8</b>                | <b>31,358</b> | <b>5.8</b>                   | <b>26.1</b>       | <b>12.7</b>                | <b>72,006</b> |

Notes

\*Including spouse irrespective of age

<sup>1</sup> Angina pectoris refers to, "a chest pain or discomfort with all the following symptoms: (a) the pain must include either the sternum (any level) or the left arm and left anterior chest (defined as the anterior chest wall between the levels of clavicle and lower end of sternum), (b) pain must be provoked by either hurrying or walking uphill (or by walking on the level, for those who never attempt more), (c) when pain occurs on walking it must make the person either stop or slacken pace, (d) pain must disappear on a majority of occasions in 10 min or less from the time when the person stands still.

<sup>2</sup> Pain refers to those who reported that they were troubled by pain and they required some form of medication or treatment for relief of pain.

<sup>3</sup> Sleep problem refers to difficulty in falling asleep or staying asleep throughout the night and also feeling unrested during the day (anyone or more).

**Table 8.2 Self-reported prevalence (%) of symptom-based health conditions: angina pectoris, pain and sleep problem among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*                   |                   |                            |               | Age ≥ 60                     |                   |                            |               | Total                        |                   |                            |               |
|-----------------------|------------------------------|-------------------|----------------------------|---------------|------------------------------|-------------------|----------------------------|---------------|------------------------------|-------------------|----------------------------|---------------|
|                       | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number        | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number        | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number        |
| <b>India</b>          | <b>5.4</b>                   | <b>23.3</b>       | <b>10.9</b>                | <b>40,648</b> | <b>6.2</b>                   | <b>29.3</b>       | <b>14.8</b>                | <b>31,358</b> | <b>5.8</b>                   | <b>26.1</b>       | <b>12.7</b>                | <b>72,006</b> |
| <b>North</b>          |                              |                   |                            |               |                              |                   |                            |               |                              |                   |                            |               |
| Chandigarh            | 1.9                          | 22.0              | 8.2                        | 624           | 3.5                          | 25.5              | 8.6                        | 387           | 2.5                          | 23.4              | 8.4                        | 1,011         |
| Delhi                 | 3.5                          | 23.7              | 9.3                        | 822           | 7.0                          | 32.9              | 20.3                       | 495           | 4.8                          | 27.2              | 13.5                       | 1,317         |
| Haryana               | 1.8                          | 12.1              | 10.6                       | 1,048         | 2.2                          | 15.2              | 16.5                       | 847           | 2.0                          | 13.6              | 13.4                       | 1,895         |
| Himachal Pradesh      | 17.5                         | 35.6              | 9.9                        | 765           | 19.6                         | 34.2              | 15.7                       | 617           | 18.5                         | 34.9              | 12.6                       | 1,382         |
| Jammu & Kashmir       | 8.7                          | 19.2              | 6.6                        | 881           | 7.6                          | 26.2              | 11.1                       | 730           | 8.1                          | 22.6              | 8.8                        | 1,611         |
| Punjab                | 4.9                          | 23.8              | 14.2                       | 1,110         | 5.5                          | 20.6              | 20.7                       | 1,002         | 5.2                          | 22.2              | 17.3                       | 2,112         |
| Rajasthan             | 4.7                          | 21.2              | 7.9                        | 1,161         | 5.7                          | 24.2              | 10.1                       | 1,077         | 5.2                          | 22.7              | 9.0                        | 2,238         |
| Uttarakhand           | 11.4                         | 23.8              | 10.6                       | 716           | 13.4                         | 32.1              | 16.8                       | 641           | 12.4                         | 27.9              | 13.6                       | 1,357         |
| <b>Central</b>        |                              |                   |                            |               |                              |                   |                            |               |                              |                   |                            |               |
| Chhattisgarh          | 5.1                          | 18.4              | 7.8                        | 1,274         | 5.7                          | 22.3              | 11.5                       | 779           | 5.3                          | 19.9              | 9.2                        | 2,053         |
| Madhya Pradesh        | 8.6                          | 26.7              | 16.0                       | 1,597         | 8.7                          | 33.4              | 21.7                       | 1,312         | 8.6                          | 29.9              | 18.7                       | 2,909         |
| Uttar Pradesh         | 6.5                          | 19.6              | 13.8                       | 2,395         | 6.6                          | 24.8              | 16.7                       | 2,166         | 6.5                          | 22.2              | 15.2                       | 4,561         |
| <b>East</b>           |                              |                   |                            |               |                              |                   |                            |               |                              |                   |                            |               |
| Bihar                 | 8.8                          | 31.5              | 9.4                        | 1,708         | 9.3                          | 34.7              | 13.2                       | 1,806         | 9.1                          | 33.2              | 11.4                       | 3,514         |
| Jharkhand             | 5.3                          | 34.6              | 9.8                        | 1,293         | 5.5                          | 47.2              | 11.7                       | 1,166         | 5.4                          | 40.7              | 10.7                       | 2,459         |
| Odisha                | 2.4                          | 38.2              | 11.0                       | 1,675         | 4.4                          | 49.3              | 11.0                       | 1,233         | 3.3                          | 43.1              | 11.0                       | 2,908         |
| West Bengal           | 4.1                          | 26.5              | 15.3                       | 2,383         | 2.9                          | 31.1              | 16.9                       | 1,541         | 3.7                          | 28.3              | 15.9                       | 3,924         |
| <b>Northeast</b>      |                              |                   |                            |               |                              |                   |                            |               |                              |                   |                            |               |
| Arunachal Pradesh     | 3.6                          | 14.7              | 4.0                        | 897           | 8.4                          | 19.9              | 10.8                       | 318           | 4.8                          | 16.0              | 5.7                        | 1,215         |
| Assam                 | 4.9                          | 24.7              | 3.6                        | 1,547         | 5.4                          | 29.0              | 9.0                        | 814           | 5.1                          | 26.2              | 5.5                        | 2,361         |
| Manipur               | 3.7                          | 23.2              | 4.7                        | 760           | 3.0                          | 33.9              | 4.2                        | 605           | 3.4                          | 28.2              | 4.5                        | 1,365         |
| Meghalaya             | 11.3                         | 4.5               | 2.3                        | 556           | 14.5                         | 7.6               | 6.1                        | 411           | 12.6                         | 5.8               | 3.9                        | 967           |
| Mizoram               | 2.4                          | [0.4]             | 2.3                        | 713           | 3.6                          | 1.3               | 3.1                        | 531           | 2.9                          | 0.8               | 2.7                        | 1,244         |
| Nagaland              | 6.2                          | 18.3              | 2.2                        | 707           | 6.6                          | 21.8              | 1.6                        | 606           | 6.4                          | 20.0              | 1.9                        | 1,313         |
| Tripura               | 6.4                          | 27.4              | 9.3                        | 732           | 9.3                          | 30.6              | 8.2                        | 459           | 7.5                          | 28.7              | 8.9                        | 1,191         |
| <b>West</b>           |                              |                   |                            |               |                              |                   |                            |               |                              |                   |                            |               |
| Dadra & Nagar Haveli  | 4.8                          | 18.9              | 14.2                       | 632           | 5.7                          | 19.1              | 17.2                       | 448           | 5.2                          | 19.0              | 15.4                       | 1,080         |
| Daman & Diu           | 5.7                          | 31.3              | 15.3                       | 557           | 5.7                          | 39.9              | 18.8                       | 428           | 5.7                          | 35.3              | 17.0                       | 985           |
| Goa                   | 5.5                          | 20.9              | 11.8                       | 788           | 7.0                          | 26.5              | 11.6                       | 634           | 6.2                          | 23.4              | 11.7                       | 1,422         |
| Gujarat               | 4.6                          | 25.4              | 17.7                       | 1,338         | 4.8                          | 27.7              | 17.8                       | 979           | 4.7                          | 26.5              | 17.7                       | 2,317         |
| Maharashtra           | 9.2                          | 28.6              | 7.5                        | 2,175         | 10.4                         | 36.7              | 13.6                       | 1,782         | 9.8                          | 32.5              | 10.5                       | 3,957         |

continued

continued

| State/Union Territory     | Age 45-59*                   |                   |                            |        | Age ≥ 60                     |                   |                            |        | Total                        |                   |                            |
|---------------------------|------------------------------|-------------------|----------------------------|--------|------------------------------|-------------------|----------------------------|--------|------------------------------|-------------------|----------------------------|
|                           | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> | Number | Angina pectoris <sup>1</sup> | Pain <sup>2</sup> | Sleep problem <sup>3</sup> |
| <b>South</b>              |                              |                   |                            |        |                              |                   |                            |        |                              |                   |                            |
| Andaman & Nicobar Islands | 4.6                          | 20.7              | 15.5                       | 720    | 8.3                          | 30.9              | 15.7                       | 521    | 6.1                          | 24.8              | 15.6                       |
| Andhra Pradesh            | 4.0                          | 11.6              | 8.7                        | 1,566  | 2.5                          | 12.7              | 12.0                       | 1,100  | 3.4                          | 12.1              | 10.1                       |
| Karnataka                 | 2.5                          | 16.2              | 9.5                        | 1,410  | 3.8                          | 23.8              | 15.2                       | 1,000  | 3.0                          | 19.2              | 11.8                       |
| Kerala                    | 5.6                          | 20.0              | 12.4                       | 1,275  | 6.7                          | 31.0              | 20.4                       | 1,205  | 6.2                          | 25.7              | 16.5                       |
| Lakshadweep               | 1.4                          | 17.9              | 4.0                        | 637    | 1.8                          | 33.9              | 7.0                        | 500    | 1.6                          | 25.5              | 5.4                        |
| Puducherry                | 3.0                          | 43.5              | 14.9                       | 787    | 4.2                          | 53.7              | 21.2                       | 638    | 3.5                          | 48.3              | 17.9                       |
| Tamil Nadu                | 2.9                          | 21.4              | 8.9                        | 1,993  | 3.6                          | 25.3              | 12.8                       | 1,530  | 3.2                          | 23.2              | 10.7                       |
| Telangana                 | 3.8                          | 16.8              | 8.6                        | 1,406  | 3.1                          | 20.3              | 13.6                       | 1,050  | 3.5                          | 18.4              | 10.8                       |

Notes

\*Including spouse irrespective of age

<sup>1</sup> Angina pectoris refers to, "a chest pain or discomfort with all the following symptoms: (a) the pain must include either the sternum (any level) or the left arm and left anterior chest (defined as the anterior chest wall between the levels of clavicle and lower end of sternum), (b) pain must be provoked by either hurrying or walking uphill (or by walking on the level, for those who never attempt more), (c) when pain occurs on walking it must make the person either stop or slacken pace, (d) pain must disappear on a majority of occasions in 10 min or less from the time when the person stands still.

<sup>2</sup> Pain refers to those who reported that they were troubled by pain and they required some form of medication or treatment for relief of pain.

<sup>3</sup> Sleep problem refers to difficulty in falling asleep or staying asleep throughout the night and also feeling unrested during the day (anyone or more).



## 8.2 INJURY, FALLS, AND DISASTERS

### 8.2.1 Injuries and falls

A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor, or other lower level. Globally, falls are a major public health problem. An estimated 646,000 fatal falls occur each year; making falls the second leading cause of unintentional injury-related death after road traffic injuries. In all regions of the world, death rates from falls are highest among adults over the age of 60 years (WHO, 2018c). Older people have the highest risk of death or serious injury arising from a fall; this risk increases with age, which may in part be due to physical, sensory, and cognitive changes associated with ageing, in combination with environments that are not adapted for an ageing population.

In the LASI, detailed information on falls and injury was collected. Respondents were asked whether they sustained any major injury or fall in the past two years. For all those who reported major injuries, further information was collected on cause of injury such as traffic accident, poisoning, struck by person/ object, animal attack/ bite, fire, flame, burn, electric shock, drowning or fall and medical treatment taken. For all cases of falls, related information on number of falls, whether fall was with or without injury, any fracture of bones/joints due to the fall, surgery related to bones/joints, and the bone/ joint for which surgery was done was collected.

Table 8.3 presents the self-reported prevalence of injury and falls by background characteristics. The overall self-reported prevalence of injuries and falls among older adults age 45 and above is 16% and 19%, respectively. In India, a fifth of older adults age 45 and above (21%) reported that they have either sustained any injury or had falls. A higher proportion of the elderly age 60 and above (25%) reported any major injury or falls compared to older adults age 45-59 (18%). Among the elderly age 60 and above, the prevalence of falls (23%) is higher than that of injuries (19%) and that of falls among older adults age 45-59 (17%). Among older adults age 45-59, as well as among the elderly age 60 and above, the self-reported prevalence of either injury or falls is higher in rural (21% and 26%, respectively) than urban areas (14% and 21%, respectively). Among the elderly age 60 and above, a higher proportion of women (27%) than men (22%) reported injury/fall, and the prevalence of injury or fall is higher among widowed (28%) and among those living alone (29%).

Table 8.4 shows substantial cross-state variations in the prevalence of injury and falls. The self-reported prevalence of any injury or fall among older adults age 45 and above is comparatively higher in the east Indian states and lower in the north-eastern states, with a prevalence rate ranging from 31% in Odisha and Bihar to 4% in Mizoram. More than 30% of elderly age 60 and above in Odisha (36%), Bihar (32%), Kerala (31%), Punjab (31%), and Assam (30%) reported any injury or fall. Among the elderly age 60 and above, the prevalence of falls is higher in Odisha (35%), Punjab (31%), Kerala (30%), Assam (29%), and Bihar (29%). The prevalence of falls is lower than 10% in most of the north-eastern states, including Manipur (9%), Nagaland (8%), Meghalaya (6%), and Mizoram (3%). A quarter of elderly age 60 and above reported injuries in Bihar (27%), Assam (25%), and West Bengal (25%).

**Table 8.3 Self-reported prevalence (%) of injury and falls among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*          |             |                        |               | Age ≥ 60            |             |                        |               | Total               |             |                        |               |
|------------------------------------------|---------------------|-------------|------------------------|---------------|---------------------|-------------|------------------------|---------------|---------------------|-------------|------------------------|---------------|
|                                          | Injury <sup>1</sup> | Falls       | Any injury and/or fall | Number        | Injury <sup>1</sup> | Falls       | Any injury and/or fall | Number        | Injury <sup>1</sup> | Falls       | Any injury and/or fall | Number        |
| <b>Place of residence</b>                |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Rural                                    | 15.7                | 18.6        | 20.7                   | 25,743        | 19.6                | 23.9        | 25.7                   | 20,686        | 17.5                | 21.1        | 23.1                   | 46,429        |
| Urban                                    | 10.6                | 12.3        | 13.8                   | 14,919        | 16.7                | 20.5        | 21.4                   | 10,682        | 13.2                | 15.7        | 17.0                   | 25,601        |
| <b>Sex</b>                               |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Male                                     | 14.7                | 15.4        | 18.7                   | 15,419        | 16.7                | 19.9        | 21.9                   | 15,036        | 15.7                | 17.7        | 20.3                   | 30,455        |
| Female                                   | 13.5                | 17.1        | 18.2                   | 25,243        | 20.6                | 25.6        | 26.8                   | 16,332        | 16.5                | 20.7        | 21.8                   | 41,575        |
| <b>Marital status</b>                    |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Currently married                        | 13.9                | 16.3        | 18.2                   | 35,369        | 17.2                | 20.8        | 22.7                   | 19,857        | 15.1                | 18.0        | 19.9                   | 55,226        |
| Widowed                                  | 14.9                | 18.3        | 20.1                   | 3,863         | 21.8                | 26.9        | 27.9                   | 10,689        | 20.2                | 24.9        | 26.1                   | 14,552        |
| Divorced/Separated/Deserted/Others       | 12.0                | 16.4        | 17.9                   | 1,430         | 12.3                | 15.9        | 16.8                   | 822           | 12.1                | 16.2        | 17.5                   | 2,252         |
| <b>Living arrangement</b>                |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Living alone                             | 18.8                | 20.5        | 23.3                   | 689           | 20.9                | 27.2        | 28.5                   | 1,620         | 20.4                | 25.7        | 27.3                   | 2,309         |
| Living with spouse and/or others         | 14.0                | 15.7        | 18.0                   | 4,518         | 18.2                | 21.3        | 23.6                   | 6,155         | 16.4                | 19.0        | 21.3                   | 10,673        |
| Living with spouse and children          | 13.8                | 16.3        | 18.2                   | 30,198        | 16.7                | 20.4        | 22.2                   | 13,463        | 14.7                | 17.6        | 19.4                   | 43,661        |
| Living with children and others          | 14.5                | 18.2        | 19.6                   | 4,075         | 21.9                | 26.6        | 27.6                   | 8,416         | 19.8                | 24.2        | 25.3                   | 12,491        |
| Living with others only                  | 12.5                | 17.6        | 19.6                   | 1,182         | 18.2                | 23.4        | 24.6                   | 1,714         | 16.1                | 21.2        | 22.7                   | 2,896         |
| <b>Religion</b>                          |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Hindu                                    | 14.1                | 16.7        | 18.5                   | 29,841        | 18.9                | 22.9        | 24.5                   | 22,969        | 16.3                | 19.6        | 21.3                   | 52,810        |
| Muslim                                   | 14.1                | 15.0        | 17.7                   | 4,923         | 19.2                | 22.9        | 24.6                   | 3,718         | 16.3                | 18.5        | 20.7                   | 8,641         |
| Christian                                | 6.6                 | 11.1        | 11.7                   | 4,058         | 10.6                | 17.1        | 18.4                   | 3,140         | 8.3                 | 13.8        | 14.7                   | 7,198         |
| Others                                   | 16.0                | 22.3        | 23.5                   | 1,840         | 21.5                | 27.0        | 28.3                   | 1,541         | 18.7                | 24.6        | 25.8                   | 3,381         |
| <b>Caste/tribe</b>                       |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Scheduled tribe                          | 12.3                | 15.5        | 17.1                   | 7,327         | 15.5                | 19.7        | 21.7                   | 5,159         | 13.7                | 17.3        | 19.1                   | 12,486        |
| Scheduled caste                          | 16.3                | 19.4        | 21.4                   | 6,886         | 21.3                | 25.1        | 26.8                   | 5,130         | 18.6                | 22.0        | 23.9                   | 12,016        |
| Other backward caste                     | 12.7                | 15.1        | 16.9                   | 15,246        | 18.1                | 22.0        | 23.6                   | 11,841        | 15.2                | 18.2        | 20.0                   | 27,087        |
| None of the above                        | 15.0                | 17.1        | 19.1                   | 11,203        | 19.0                | 23.7        | 25.1                   | 9,238         | 16.9                | 20.3        | 21.9                   | 20,441        |
| <b>Education</b>                         |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| No schooling                             | 14.5                | 17.5        | 19.1                   | 16,278        | 19.2                | 23.6        | 25.2                   | 16,854        | 17.0                | 20.7        | 22.3                   | 33,132        |
| Less than 5 years complete               | 16.0                | 18.9        | 21.0                   | 4,263         | 21.0                | 27.1        | 28.2                   | 3,774         | 18.4                | 22.9        | 24.5                   | 8,037         |
| 5-9 years complete                       | 16.1                | 18.0        | 20.6                   | 10,870        | 17.9                | 21.0        | 23.2                   | 5,991         | 16.8                | 19.1        | 21.6                   | 16,861        |
| 10 or more years complete                | 9.7                 | 11.8        | 13.4                   | 9,251         | 16.1                | 18.9        | 20.2                   | 4,749         | 11.9                | 14.3        | 15.8                   | 14,000        |
| <b>Work status</b>                       |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Currently working                        | 14.4                | 16.4        | 18.7                   | 23,613        | 17.6                | 21.5        | 23.6                   | 9,281         | 15.4                | 17.9        | 20.2                   | 32,894        |
| Worked in past but currently not working | 15.5                | 18.9        | 20.8                   | 4,565         | 19.1                | 23.2        | 24.9                   | 13,326        | 18.2                | 22.1        | 23.9                   | 17,891        |
| Never worked                             | 12.4                | 15.8        | 16.6                   | 12,484        | 19.5                | 24.0        | 24.8                   | 8,761         | 15.5                | 19.4        | 20.2                   | 21,245        |
| <b>MPCE quintile</b>                     |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Poorest                                  | 12.7                | 14.9        | 16.6                   | 7,649         | 16.6                | 21.3        | 22.5                   | 6,462         | 14.6                | 18.0        | 19.4                   | 14,111        |
| Poorer                                   | 13.8                | 16.4        | 18.5                   | 8,031         | 18.3                | 23.5        | 24.7                   | 6,457         | 15.9                | 19.7        | 21.4                   | 14,488        |
| Middle                                   | 14.2                | 16.9        | 18.5                   | 8,098         | 19.3                | 22.4        | 24.6                   | 6,395         | 16.5                | 19.4        | 21.3                   | 14,493        |
| Richer                                   | 15.2                | 18.0        | 20.1                   | 8,494         | 18.5                | 22.4        | 24.3                   | 6,153         | 16.7                | 20.0        | 22.0                   | 14,647        |
| Richest                                  | 13.9                | 16.3        | 18.3                   | 8,390         | 21.9                | 25.3        | 26.9                   | 5,901         | 17.3                | 20.1        | 21.9                   | 14,291        |
| <b>Total</b>                             | <b>13.9</b>         | <b>16.5</b> | <b>18.4</b>            | <b>40,662</b> | <b>18.8</b>         | <b>22.9</b> | <b>24.5</b>            | <b>31,368</b> | <b>16.1</b>         | <b>19.4</b> | <b>21.2</b>            | <b>72,030</b> |

Notes

\*Including spouse irrespective of age

<sup>1</sup>Injury includes injuries sustained due to any traffic accident, violence, animal attack or fall in the past 2 years (any one or more).

**Table 8.4 Self-reported prevalence (%) of injury and falls among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*          |             |                        |               | Age ≥ 60            |             |                        |               | Total               |             |                        |               |
|---------------------------|---------------------|-------------|------------------------|---------------|---------------------|-------------|------------------------|---------------|---------------------|-------------|------------------------|---------------|
|                           | Injury <sup>1</sup> | Falls       | Any injury and/or fall | Number        | Injury <sup>1</sup> | Falls       | Any injury and/or fall | Number        | Injury <sup>1</sup> | Falls       | Any injury and/or fall | Number        |
| <b>India</b>              | <b>13.9</b>         | <b>16.5</b> | <b>18.4</b>            | <b>40,662</b> | <b>18.8</b>         | <b>22.9</b> | <b>24.5</b>            | <b>31,368</b> | <b>16.1</b>         | <b>19.4</b> | <b>21.2</b>            | <b>72,030</b> |
| <b>North</b>              |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Chandigarh                | 9.8                 | 12.5        | 13.3                   | 624           | 15.8                | 19.5        | 19.9                   | 387           | 12.2                | 15.3        | 15.9                   | 1,011         |
| Delhi                     | 7.2                 | 10.1        | 11.7                   | 822           | 12.2                | 13.2        | 15.4                   | 494           | 9.1                 | 11.3        | 13.1                   | 1,316         |
| Haryana                   | 9.4                 | 10.9        | 12.9                   | 1,048         | 13.0                | 18.1        | 18.8                   | 847           | 11.1                | 14.3        | 15.7                   | 1,895         |
| Himachal Pradesh          | 14.9                | 18.9        | 21.8                   | 765           | 15.1                | 20.6        | 22.5                   | 617           | 15.0                | 19.7        | 22.1                   | 1,382         |
| Jammu & Kashmir           | 10.1                | 9.6         | 11.3                   | 881           | 10.4                | 10.0        | 12.5                   | 730           | 10.2                | 9.8         | 11.9                   | 1,611         |
| Punjab                    | 18.7                | 26.8        | 28.6                   | 1,112         | 21.6                | 30.8        | 31.3                   | 1,004         | 20.1                | 28.7        | 29.9                   | 2,116         |
| Rajasthan                 | 9.4                 | 9.6         | 12.1                   | 1,161         | 11.1                | 12.4        | 13.7                   | 1,077         | 10.2                | 11.0        | 12.9                   | 2,238         |
| Uttarakhand               | 17.2                | 20.9        | 23.3                   | 716           | 12.9                | 19.0        | 20.1                   | 641           | 15.1                | 19.9        | 21.7                   | 1,357         |
| <b>Central</b>            |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Chhattisgarh              | 8.8                 | 13.1        | 14.2                   | 1,274         | 12.3                | 17.6        | 19.3                   | 779           | 10.2                | 14.8        | 16.2                   | 2,053         |
| Madhya Pradesh            | 13.8                | 15.7        | 18.3                   | 1,597         | 17.4                | 18.7        | 22.0                   | 1,312         | 15.6                | 17.1        | 20.0                   | 2,909         |
| Uttar Pradesh             | 17.0                | 20.0        | 22.0                   | 2,395         | 20.7                | 25.9        | 27.9                   | 2,166         | 18.8                | 22.9        | 24.9                   | 4,561         |
| <b>East</b>               |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Bihar                     | 23.4                | 27.0        | 29.3                   | 1,707         | 26.9                | 28.7        | 32.4                   | 1,807         | 25.3                | 27.9        | 31.0                   | 3,514         |
| Jharkhand                 | 18.7                | 24.1        | 26.0                   | 1,293         | 19.9                | 26.6        | 28.0                   | 1,166         | 19.3                | 25.3        | 27.0                   | 2,459         |
| Odisha                    | 17.7                | 26.1        | 27.4                   | 1,675         | 23.3                | 34.5        | 35.9                   | 1,233         | 20.2                | 29.8        | 31.1                   | 2,908         |
| West Bengal               | 18.9                | 19.4        | 22.2                   | 2,384         | 24.8                | 27.5        | 28.8                   | 1,541         | 21.3                | 22.7        | 24.9                   | 3,925         |
| <b>Northeast</b>          |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Arunachal Pradesh         | 6.1                 | 10.2        | 10.9                   | 896           | 9.2                 | 17.0        | 17.0                   | 317           | 6.9                 | 11.8        | 12.4                   | 1,213         |
| Assam                     | 19.0                | 20.9        | 22.7                   | 1,548         | 25.4                | 28.9        | 30.0                   | 814           | 21.3                | 23.8        | 25.3                   | 2,362         |
| Manipur                   | 5.9                 | 5.8         | 8.0                    | 761           | 9.5                 | 8.6         | 11.5                   | 605           | 7.6                 | 7.1         | 9.6                    | 1,366         |
| Meghalaya                 | 2.7                 | 4.3         | 4.8                    | 556           | 3.6                 | 5.8         | 5.8                    | 411           | 3.1                 | 4.9         | 5.2                    | 967           |
| Mizoram                   | 2.4                 | 2.1         | 2.6                    | 714           | 3.9                 | 2.9         | 4.7                    | 531           | 3.1                 | 2.5         | 3.6                    | 1,245         |
| Nagaland                  | 3.6                 | 9.9         | 10.6                   | 708           | 4.2                 | 7.7         | 7.8                    | 607           | 3.9                 | 8.9         | 9.3                    | 1,315         |
| Tripura                   | 13.7                | 16.2        | 18.0                   | 732           | 15.7                | 19.5        | 21.6                   | 459           | 14.5                | 17.5        | 19.4                   | 1,191         |
| <b>West</b>               |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Dadra & Nagar Haveli      | 9.3                 | 13.4        | 15.1                   | 634           | 16.4                | 23.4        | 25.1                   | 449           | 12.1                | 17.3        | 19.0                   | 1,083         |
| Daman & Diu               | 13.3                | 16.6        | 17.9                   | 557           | 20.5                | 24.5        | 25.7                   | 429           | 16.7                | 20.3        | 21.6                   | 986           |
| Goa                       | 9.4                 | 9.8         | 13.7                   | 788           | 11.1                | 15.2        | 17.5                   | 634           | 10.2                | 12.3        | 15.4                   | 1,422         |
| Gujarat                   | 14.7                | 18.1        | 20.5                   | 1,341         | 17.3                | 23.3        | 24.7                   | 981           | 15.9                | 20.5        | 22.4                   | 2,322         |
| Maharashtra               | 13.7                | 17.2        | 18.0                   | 2,176         | 18.6                | 23.5        | 24.1                   | 1,783         | 16.1                | 20.3        | 21.0                   | 3,959         |
| <b>South</b>              |                     |             |                        |               |                     |             |                        |               |                     |             |                        |               |
| Andaman & Nicobar Islands | 10.0                | 10.3        | 10.9                   | 720           | 13.5                | 13.2        | 14.8                   | 521           | 11.4                | 11.5        | 12.5                   | 1,241         |
| Andhra Pradesh            | 9.9                 | 10.6        | 11.6                   | 1,567         | 14.1                | 15.3        | 16.4                   | 1,100         | 11.7                | 12.5        | 13.6                   | 2,667         |
| Karnataka                 | 7.8                 | 9.3         | 10.9                   | 1,410         | 18.3                | 21.2        | 22.0                   | 1,001         | 12.0                | 14.0        | 15.3                   | 2,411         |
| Kerala                    | 11.7                | 20.4        | 22.0                   | 1,276         | 15.7                | 29.5        | 30.5                   | 1,206         | 13.8                | 25.1        | 26.4                   | 2,482         |
| Lakshadweep               | 4.1                 | 6.8         | 7.6                    | 637           | 9.6                 | 10.7        | 10.9                   | 500           | 6.8                 | 8.7         | 9.2                    | 1,137         |
| Puducherry                | 11.9                | 14.0        | 14.3                   | 787           | 15.4                | 18.2        | 18.5                   | 638           | 13.6                | 16.0        | 16.3                   | 1,425         |
| Tamil Nadu                | 8.6                 | 11.2        | 12.6                   | 1,994         | 10.9                | 15.9        | 16.6                   | 1,530         | 9.6                 | 13.4        | 14.5                   | 3,524         |
| Telangana                 | 7.9                 | 8.4         | 10.3                   | 1,406         | 10.4                | 11.3        | 12.6                   | 1,051         | 9.0                 | 9.7         | 11.3                   | 2,457         |

Notes

\*Including spouse irrespective of age

<sup>1</sup> Injury includes injuries sustained due to any traffic accident, violence, animal attack or fall in the past 2 years (any one or more).

## 8.2.2 Health conditions due to natural and man-made disasters

A disaster is a natural or man-made event that negatively affects life, health, property, livelihood, or industry. Disasters are highly disruptive events that cause suffering, deprivation, hardship, injury, and even death as a result of direct injury and disease conditions. Disasters can be caused by naturally occurring events, which are called natural disasters, such as landslides, droughts, earthquakes, hurricane/cyclone, flooding, or tornadoes/tsunami, or they can be due to man-made events, either accidental (such as an accidental toxic spill, nuclear power plant event, building collapse, fire, or traffic accident) or deliberately caused (such as a terrorist bombing, poisoning, riot, or stampede).

In the LASI, information was collected on health consequences of either man-made or natural disaster in the last 5 years preceding the survey, such as permanent physical disability, psychological trauma and mental health problems, and chronic illness.

Table 8.5 presents health conditions due to natural and man-made disasters by background characteristics. The overall prevalence of any health problem due to natural and man-made disasters is 4% among older adults age 45 and above. Overall, the prevalence of psychological problems due to disaster is 2%, whereas the prevalence of chronic illness and permanent physical disabilities is less than 1% (0.6% and 0.3%, respectively). Older adults age 45-59 and the elderly age 60 and above are found to be equally affected by health problems due to disaster. The prevalence of health problems due to natural and man-made disasters among older adults age 45 and above in rural areas (4.4%) is more than twice than that in urban areas (1.7%). Among older adults age 45-59, the prevalence of health problems due to disaster is higher in men (4.4%) than in women (3%).

Table 8.6 presents health conditions due to natural and man-made disasters by states/UTs. The prevalence of health problems among older adults age 45-59, as well as that among elderly age 60 and above due to disaster, are higher in the states/UTs of Bihar, Uttar Pradesh, Madhya Pradesh, and Jammu & Kashmir. Around 1% of the elderly age 60 and above reported permanent physical disability in Madhya Pradesh and Assam; 3% reported chronic illness in Mizoram and Nagaland and more than 5% of the elderly age 60 and above reported psychological problems due to either man-made or natural disaster in the states of Bihar (6.3%) and Madhya Pradesh (5.8%).

### Key findings: health events: injuries, falls, and disaster

- The self-reported prevalence of injuries and falls among older adults age 45 and above is 16% and 19% respectively; one in four elderly age 60 and above have experienced any injury and/or falls. Among elderly age 60 and above, women, widowed and elderly living alone are more prone to injuries and/or falls.
- The prevalence of falls among the elderly age 60 and above is higher in Odisha (35%), Punjab (31%), Kerala (30%), Assam (29%) and Bihar (29%).
- Elderly age 60 and above are more likely to have psychological problems (2.3%) than permanent physical disability (0.4%) and chronic illness (0.6%) due to natural and man-made disaster.

**Table 8.5 Self-reported health conditions due to natural and man-made disasters among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Health problems due to natural and man-made disaster <sup>1</sup> |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
|------------------------------------------|-------------------------------------------------------------------|-------------------------|-----------------|--------------------|--------|-------------------------------|-------------------------|-----------------|--------------------|--------|-------------------------------|-------------------------|
|                                          | Age 45-59*                                                        |                         |                 |                    |        |                               | Age ≥ 60                |                 |                    |        |                               |                         |
|                                          | Permanent physical disability                                     | Psycho-logical problems | Chronic illness | Any health problem | Number | Permanent physical disability | Psycho-logical problems | Chronic illness | Any health problem | Number | Permanent physical disability | Psycho-logical problems |
| <b>Place of residence</b>                |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Rural                                    | 0.4                                                               | 3.0                     | 0.8             | 4.6                | 25,739 | 0.4                           | 2.7                     | 0.7             | 4.3                | 20,684 | 0.4                           | 2.9                     |
| Urban                                    | 0.1                                                               | 0.9                     | 0.4             | 1.5                | 14,916 | 0.3                           | 1.1                     | 0.4             | 1.9                | 10,683 | 0.2                           | 1.0                     |
| <b>Sex</b>                               |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Male                                     | 0.4                                                               | 2.6                     | 1.0             | 4.4                | 15,419 | 0.4                           | 2.3                     | 0.7             | 3.7                | 15,037 | 0.4                           | 2.5                     |
| Female                                   | 0.2                                                               | 2.1                     | 0.5             | 3.0                | 25,236 | 0.4                           | 2.2                     | 0.6             | 3.4                | 16,330 | 0.2                           | 2.2                     |
| <b>Marital status</b>                    |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Currently married                        | 0.3                                                               | 2.3                     | 0.7             | 3.5                | 35,361 | 0.3                           | 2.3                     | 0.7             | 3.6                | 19,856 | 0.3                           | 2.3                     |
| Widowed                                  | 0.1                                                               | 2.0                     | 0.6             | 3.3                | 3,864  | 0.5                           | 2.1                     | 0.5             | 3.5                | 10,689 | 0.4                           | 2.1                     |
| Divorced/Separated/ Deserted/ Others     | 0.2                                                               | 3.1                     | 0.1             | 4.1                | 1,430  | [0.2]                         | 2.3                     | 0.5             | 3.7                | 822    | 0.2                           | 2.8                     |
| <b>Living arrangement</b>                |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Living alone                             | -                                                                 | 1.7                     | 0.6             | 2.8                | 689    | 0.5                           | 1.8                     | 0.6             | 3.4                | 1,620  | 0.4                           | 1.7                     |
| Living with spouse and/or others         | 0.5                                                               | 1.8                     | 0.7             | 3.3                | 4,513  | 0.4                           | 2.1                     | 0.9             | 3.5                | 6,153  | 0.4                           | 2.0                     |
| Living with spouse and children          | 0.3                                                               | 2.3                     | 0.7             | 3.5                | 30,195 | 0.3                           | 2.5                     | 0.6             | 3.7                | 13,463 | 0.3                           | 2.4                     |
| Living with children and others          | 0.2                                                               | 2.5                     | 0.5             | 3.9                | 4,076  | 0.4                           | 2.2                     | 0.5             | 3.5                | 8,416  | 0.3                           | 2.3                     |
| Living with others only                  | [0.2]                                                             | 3.0                     | 0.3             | 3.8                | 1,182  | [0.8]                         | 2.1                     | 0.3             | 3.4                | 1,715  | 0.6                           | 2.4                     |
| <b>Religion</b>                          |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Hindu                                    | 0.3                                                               | 2.2                     | 0.6             | 3.5                | 29,836 | 0.4                           | 2.3                     | 0.7             | 3.6                | 22,966 | 0.3                           | 2.2                     |
| Muslim                                   | 0.2                                                               | 3.4                     | 0.7             | 4.6                | 4,921  | 0.4                           | 2.6                     | 0.5             | 3.8                | 3,718  | 0.3                           | 3.1                     |
| Christian                                | -                                                                 | 2.8                     | 0.7             | 3.7                | 4,058  | [0.1]                         | 2.7                     | 0.9             | 4.0                | 3,141  | 0.1                           | 2.8                     |
| Others                                   | [0.1]                                                             | 0.5                     | 0.8             | 1.6                | 1,840  | [0.1]                         | 0.5                     | 0.1             | 1.0                | 1,542  | 0.1                           | 0.5                     |
| <b>Caste/tribe</b>                       |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Scheduled tribe                          | 0.3                                                               | 2.0                     | 0.4             | 2.8                | 7,327  | 0.2                           | 2.9                     | 0.8             | 3.9                | 5,159  | 0.3                           | 2.4                     |
| Scheduled caste                          | 0.3                                                               | 2.8                     | 0.8             | 4.2                | 6,886  | 0.5                           | 2.1                     | 0.6             | 3.6                | 5,130  | 0.4                           | 2.5                     |
| Other backward caste                     | 0.3                                                               | 2.4                     | 0.6             | 3.7                | 15,243 | 0.4                           | 2.7                     | 0.7             | 4.2                | 11,839 | 0.3                           | 2.5                     |
| None of the above                        | 0.2                                                               | 1.9                     | 0.7             | 2.9                | 11,199 | 0.3                           | 1.5                     | 0.5             | 2.3                | 9,239  | 0.2                           | 1.7                     |
| <b>Education</b>                         |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| No schooling                             | 0.4                                                               | 2.9                     | 0.6             | 4.3                | 16,274 | 0.4                           | 2.7                     | 0.6             | 4.1                | 16,853 | 0.4                           | 2.8                     |
| Less than 5 years complete               | 0.1                                                               | 1.7                     | 0.6             | 2.7                | 4,261  | 0.5                           | 1.8                     | 1.2             | 3.6                | 3,774  | 0.3                           | 1.8                     |
| 5-9 years complete                       | 0.3                                                               | 2.3                     | 0.8             | 3.7                | 10,870 | 0.3                           | 1.6                     | 0.3             | 2.6                | 5,990  | 0.3                           | 2.1                     |
| 10 or more years complete                | 0.1                                                               | 1.4                     | 0.6             | 2.3                | 9,250  | 0.2                           | 1.7                     | 0.7             | 2.7                | 4,750  | 0.1                           | 1.5                     |
| <b>Work status</b>                       |                                                                   |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |
| Currently working                        | 0.3                                                               | 2.5                     | 0.7             | 3.8                | 23,611 | 0.3                           | 2.9                     | 0.8             | 4.3                | 9,280  | 0.3                           | 2.6                     |
| Worked in past but currently not working | 0.4                                                               | 1.8                     | 1.1             | 3.3                | 4,564  | 0.6                           | 2.1                     | 0.7             | 3.6                | 13,326 | 0.5                           | 2.0                     |
| Never worked                             | 0.2                                                               | 2.1                     | 0.4             | 3.1                | 12,480 | 0.2                           | 1.7                     | 0.3             | 2.6                | 8,761  | 0.2                           | 1.9                     |

continued

continued

| Health problems due to natural and man-made disaster <sup>1</sup> |                               |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |                 |                    |
|-------------------------------------------------------------------|-------------------------------|-------------------------|-----------------|--------------------|--------|-------------------------------|-------------------------|-----------------|--------------------|--------|-------------------------------|-------------------------|-----------------|--------------------|
| Background characteristics                                        | Age 45-59*                    |                         |                 |                    |        | Age ≥ 60                      |                         |                 |                    |        | Total                         |                         |                 |                    |
|                                                                   | Permanent physical disability | Psycho-logical problems | Chronic illness | Any health problem | Number | Permanent physical disability | Psycho-logical problems | Chronic illness | Any health problem | Number | Permanent physical disability | Psycho-logical problems | Chronic illness | Any health problem |
| MPCE quintile                                                     |                               |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |                 |                    |
| Poorest                                                           | 0.2                           | 1.8                     | 0.4             | 2.6                | 7,648  | 0.5                           | 2.3                     | 0.6             | 3.6                | 6,462  | 0.3                           | 2.0                     | 0.5             | 3.1                |
| Poorer                                                            | 0.2                           | 2.5                     | 0.5             | 3.6                | 8,030  | 0.5                           | 2.3                     | 0.7             | 3.7                | 6,455  | 0.3                           | 2.4                     | 0.6             | 3.6                |
| Middle                                                            | 0.5                           | 3.3                     | 0.7             | 4.8                | 8,097  | 0.3                           | 2.5                     | 0.4             | 3.4                | 6,395  | 0.4                           | 2.9                     | 0.6             | 4.1                |
| Richer                                                            | 0.3                           | 2.2                     | 0.5             | 3.3                | 8,491  | 0.1                           | 2.0                     | 0.7             | 3.1                | 6,154  | 0.2                           | 2.1                     | 0.6             | 3.2                |
| Richest                                                           | 0.2                           | 1.7                     | 1.1             | 3.4                | 8,389  | 0.5                           | 2.2                     | 0.8             | 4.2                | 5,901  | 0.4                           |                         | 1.0             | 3.7                |
| Total                                                             | 0.3                           | 2.3                     | 0.7             | 3.5                | 40,655 | 0.4                           | 2.3                     | 0.6             | 3.6                | 31,367 | 0.3                           |                         | 0.6             | 3.5                |
|                                                                   |                               |                         |                 |                    |        |                               |                         |                 |                    |        |                               |                         |                 | 72,022             |

Notes

\*Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

<sup>1</sup> Reference period for natural and man-made disaster is past 5 years preceding the survey.

**Table 8.6 Self-reported health conditions due to natural and man-made disasters among older adults, states/UTs, LASI Wave 1, 2017-18**

| Health problems due to natural and man-made disaster1 |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |
|-------------------------------------------------------|-------------------------------|------------------------------------------|-----------------|--------------------|--------|-------------------------------|------------------------------------------|-----------------|--------------------|--------|-------------------------------|------------------------------------------|-----------------|--------------------|--------|
| State/Union Territory                                 | Age 45-59*                    |                                          |                 |                    |        | Age ≥ 60                      |                                          |                 |                    |        | Total                         |                                          |                 |                    |        |
|                                                       | Permanent physical disability | Psychological and mental health problems | Chronic illness | Any health problem | Number | Permanent physical disability | Psychological and mental health problems | Chronic illness | Any health problem | Number | Permanent physical disability | Psychological and mental health problems | Chronic illness | Any health problem | Number |
| India                                                 | 0.3                           | 2.3                                      | 0.7             | 3.5                | 40,655 | 0.4                           | 2.3                                      | 0.6             | 3.6                | 31,367 | 0.3                           | 2.3                                      | 0.6             | 3.5                | 72,022 |
| North                                                 |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |
| Chandigarh                                            | [0.6]                         | -                                        | [0.4]           | 1.0                | 624    | [0.3]                         | [0.4]                                    | [1.2]           | [2.0]              | 387    | [0.5]                         | [0.2]                                    | [0.8]           | 1.4                | 1,011  |
| Delhi                                                 | [0.1]                         | -                                        | [0.3]           | 0.5                | 822    | -                             | -                                        | -               | [0.2]              | 495    | [0.1]                         | -                                        | [0.2]           | 0.4                | 1,317  |
| Haryana                                               | -                             | 0.4                                      | 0.6             | 1.0                | 1,048  | [0.1]                         | [0.2]                                    | [0.3]           | 0.6                | 847    | [0.1]                         | 0.3                                      | 0.5             | 0.8                | 1,895  |
| Himachal Pradesh                                      | [0.7]                         | 3.0                                      | 1.4             | 5.1                | 765    | [0.2]                         | 2.9                                      | [0.2]           | 3.1                | 617    | [0.5]                         | 2.9                                      | 0.8             | 4.1                | 1,382  |
| Jammu & Kashmir                                       | [0.1]                         | 2.8                                      | 0.7             | 5.4                | 881    | [0.1]                         | 3.8                                      | 1.3             | 7.2                | 730    | [0.1]                         | 3.3                                      | 1.0             | 6.3                | 1,611  |
| Punjab                                                | [0.2]                         | 0.5                                      | [0.1]           | 0.8                | 1,112  | [0.3]                         | 0.6                                      | [0.2]           | 1.1                | 1,004  | 0.3                           | 0.6                                      | [0.1]           | 0.9                | 2,116  |
| Rajasthan                                             | 0.3                           | 0.4                                      | 0.3             | 1.3                | 1,161  | [0.4]                         | 0.9                                      | 0.8             | 2.3                | 1,077  | 0.4                           | 0.7                                      | 0.6             | 1.8                | 2,238  |
| Uttarakhand                                           | [0.2]                         | 1.2                                      | [0.3]           | 1.8                | 716    | [0.4]                         | 1.4                                      | [0.1]           | 1.9                | 641    | 0.3                           | 1.3                                      | [0.2]           | 1.9                | 1,357  |
| Central                                               |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |
| Chhattisgarh                                          | [0.2]                         | 1.8                                      | [0.4]           | 2.7                | 1,274  | [0.4]                         | 2.5                                      | [0.2]           | 3.5                | 779    | 0.3                           | 2.1                                      | 0.3             | 3.0                | 2,053  |
| Madhya Pradesh                                        | 0.7                           | 5.2                                      | 0.6             | 6.5                | 1,597  | 1.4                           | 5.8                                      | 0.5             | 7.9                | 1,312  | 1.1                           | 5.5                                      | 0.6             | 7.2                | 2,909  |
| Uttar Pradesh                                         | 0.4                           | 6.1                                      | 0.4             | 9.1                | 2,394  | 0.5                           | 4.4                                      | 0.3             | 6.6                | 2,165  | 0.4                           | 5.3                                      | 0.4             | 7.9                | 4,559  |
| East                                                  |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |
| Bihar                                                 | [0.2]                         | 8.1                                      | 0.5             | 8.8                | 1,708  | 0.3                           | 6.3                                      | 0.5             | 7.2                | 1,806  | 0.2                           | 7.2                                      | 0.5             | 7.9                | 3,514  |
| Jharkhand                                             | [0.1]                         | 5.8                                      | [0.1]           | 5.9                | 1,293  | -                             | 4.9                                      | [0.1]           | 5.0                | 1,166  | [0.1]                         | 5.4                                      | [0.1]           | 5.5                | 2,459  |
| Odisha                                                | 0.9                           | 2.6                                      | 0.4             | 4.0                | 1,675  | 0.7                           | 2.7                                      | 0.3             | 4.1                | 1,233  | 0.8                           | 2.6                                      | 0.4             | 4.0                | 2,908  |
| West Bengal                                           | [0.2]                         | 0.6                                      | 1.0             | 1.8                | 2,383  | [0.2]                         | 0.4                                      | 0.8             | 1.3                | 1,541  | 0.2                           | 0.5                                      | 0.9             | 1.6                | 3,924  |
| Northeast                                             |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |
| Arunachal Pradesh                                     | [0.2]                         | 0.9                                      | [0.3]           | 1.4                | 896    | -                             | 1.1                                      | [1.3]           | 2.4                | 318    | [0.2]                         | 1.0                                      | 0.6             | 1.7                | 1,214  |
| Assam                                                 | 0.4                           | [0.1]                                    | 1.2             | 1.7                | 1,548  | 1.1                           | [0.1]                                    | 1.0             | 2.2                | 814    | 0.7                           | [0.1]                                    | 1.1             | 1.9                | 2,362  |
| Manipur                                               | [0.1]                         | [0.2]                                    | 2.6             | 3.7                | 760    | [0.1]                         | [0.1]                                    | 2.0             | 2.5                | 605    | 0.1                           | [0.1]                                    | 2.3             | 3.1                | 1,365  |
| Meghalaya                                             | [0.2]                         | -                                        | [0.4]           | 0.9                | 556    | -                             | [0.1]                                    | [0.1]           | [0.3]              | 411    | [0.1]                         | [0.1]                                    | [0.3]           | 0.6                | 967    |
| Mizoram                                               | [0.1]                         | [0.4]                                    | 1.2             | 1.9                | 714    | -                             | [0.1]                                    | 2.8             | 3.2                | 531    | 0.1                           | [0.3]                                    | 1.9             | 2.5                | 1,245  |
| Nagaland                                              | -                             | [0.3]                                    | 2.0             | 2.7                | 708    | -                             | -                                        | 2.5             | 2.8                | 607    | -                             | [0.2]                                    | 2.2             | 2.8                | 1,315  |
| Tripura                                               | -                             | 1.3                                      | [0.2]           | 1.3                | 732    | [0.4]                         | [0.8]                                    | [0.8]           | 2.0                | 459    | [0.2]                         | 1.1                                      | 0.4             | 1.6                | 1,191  |
| West                                                  |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |                               |                                          |                 |                    |        |
| Dadra & Nagar Haveli                                  | [0.5]                         | 0.6                                      | 2.1             | 3.3                | 633    | [0.7]                         | [0.2]                                    | [1.0]           | 2.0                | 449    | [0.6]                         | 0.4                                      | 1.7             | 2.8                | 1,082  |
| Daman & Diu                                           | [0.2]                         | [0.4]                                    | 2.7             | 3.5                | 557    | [0.1]                         | [1.5]                                    | [0.3]           | 1.9                | 429    | [0.2]                         | 0.9                                      | 1.6             | 2.7                | 986    |
| Goa                                                   | [0.1]                         | [0.5]                                    | -               | 0.8                | 788    | [0.1]                         | -                                        | [0.1]           | [0.1]              | 634    | -                             | [0.1]                                    | [0.3]           | 0.5                | 1,422  |
| Gujarat                                               | [0.2]                         | 1.0                                      | 0.6             | 1.8                | 1,340  | [0.2]                         | [0.3]                                    | 1.1             | 1.6                | 980    | 0.2                           | 0.7                                      | 0.8             | 1.7                | 2,320  |
| Maharashtra                                           | -                             | 0.2                                      | 0.7             | 0.9                | 2,176  | [0.1]                         | 0.4                                      | 1.0             | 1.3                | 1,783  | 0.1                           | 0.3                                      | 0.8             | 1.1                | 3,959  |

continued



## Health problems due to natural and man-made disaster1

## Notes

<sup>1</sup> Reference period for natural and man-made disaster is past 5 years.<sup>1</sup> Reference period for natural and man-made disaster is past 5 years.

### 8.3 SELF-REPORTED DIAGNOSED ENDEMIC DISEASES

An endemic disease is one that is always present in certain population or region. In the LASI, information was collected on the following three categories of endemic diseases in two years prior to the interview:

- Water-borne diseases - jaundice/hepatitis, typhoid, diarrhoea/gastroenteritis
- Vector-borne diseases - malaria, dengue, chikungunya
- Other infectious diseases - tuberculosis, urinary tract infection

The proportion of older adults age 45 and above who suffered from any endemic disease in the two years prior to the survey is presented in Tables 8.7 and 8.8 by background characteristics and states/UTs, respectively. One in every four older adults age 45 and above reported at least one of these endemic diseases (26%). A higher proportion of older adults age 45 and above in rural (30%) than in urban (19%) areas reported having experienced at least one endemic disease in the two years prior to the interview. The proportion of older adults age 45 and above reporting any endemic disease does not vary much by age, sex, or MPCE quintile; however, this proportion shows a declining trend with an increase in educational attainment.

Cross-state variations (Table 8.8) show that almost half of older adults age 45 and above reported having any endemic disease in Chhattisgarh (49%), followed by Rajasthan (47%), Dadra & Nagar Haveli (46%), and Haryana (45%) while about 5% of older adults in Nagaland and Lakshadweep reported that they were diagnosed with any endemic disease. Among elderly age 60 and above, the prevalence of self-reported diagnosed endemic disease is comparatively lower in the demographically advanced south Indian states/UTs, such as Kerala (11%), Tamil Nadu (11%), Puducherry (8%), and Lakshadweep (5%) besides Goa (8%) and Nagaland (5%); however, a large proportion of elderly age 60 and above reported any endemic disease in Chhattisgarh (49%), Dadra & Nagar Haveli (49%), Rajasthan (48%), Haryana (46%), and Madhya Pradesh (44%).

**Table 8.7 Self-reported prevalence (%) of endemic diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics         | Age 45-59*                        |                                    |                                        |                     |        |                                   | Age ≥ 60                           |                                        |                     |        |                                   |                                    | Total                                  |                     |        |
|------------------------------------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|--------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|--------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|--------|
|                                    | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number |
|                                    |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| <b>Place of residence</b>          |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Rural                              | 20.9                              | 11.8                               | 2.9                                    | 28.8                | 25,744 | 22.5                              | 12.3                               | 3.5                                    | 30.4                | 20,679 | 21.7                              | 12.0                               | 3.2                                    | 29.6                | 46,423 |
| Urban                              | 12.3                              | 7.6                                | 2.5                                    | 18.9                | 14,915 | 12.4                              | 7.4                                | 3.4                                    | 19.1                | 10,681 | 12.3                              | 7.5                                | 2.8                                    | 19.0                | 25,596 |
| <b>Sex</b>                         |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Male                               | 18.3                              | 10.7                               | 2.9                                    | 25.9                | 15,419 | 19.2                              | 10.4                               | 4.2                                    | 26.9                | 15,031 | 18.7                              | 10.5                               | 3.6                                    | 26.4                | 30,450 |
| Female                             | 17.8                              | 10.3                               | 2.6                                    | 25.3                | 25,240 | 19.9                              | 11.2                               | 2.8                                    | 27.3                | 16,329 | 18.7                              | 10.7                               | 2.7                                    | 26.1                | 41,569 |
| <b>Marital status</b>              |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Currently married                  | 18.3                              | 10.5                               | 2.8                                    | 25.9                | 35,364 | 19.6                              | 11.5                               | 3.7                                    | 27.7                | 19,853 | 18.8                              | 10.9                               | 3.1                                    | 26.6                | 55,217 |
| Widowed                            | 16.8                              | 10.6                               | 2.2                                    | 24.1                | 3,864  | 19.8                              | 9.6                                | 3.2                                    | 26.5                | 10,686 | 19.1                              | 9.9                                | 2.9                                    | 25.9                | 14,550 |
| Divorced/Separated/Deserted/Others | 12.4                              | 7.6                                | 1.8                                    | 17.4                | 1,431  | 15.6                              | 11.6                               | 1.6                                    | 23.4                | 821    | 13.6                              | 9.0                                | 1.8                                    | 19.6                | 2,252  |
| <b>Living arrangement</b>          |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Living alone                       | 16.8                              | 10.0                               | 1.7                                    | 23.0                | 689    | 20.2                              | 10.3                               | 2.8                                    | 27.3                | 1,616  | 19.4                              | 10.2                               | 2.5                                    | 26.4                | 2,305  |
| Living with spouse and/or others   | 18.5                              | 9.4                                | 2.6                                    | 25.9                | 4,513  | 17.2                              | 11.3                               | 3.7                                    | 25.5                | 6,150  | 17.7                              | 10.5                               | 3.2                                    | 25.7                | 10,663 |
| Living with spouse and children    | 18.2                              | 10.7                               | 2.9                                    | 25.9                | 30,198 | 20.7                              | 11.7                               | 3.7                                    | 28.8                | 13,463 | 19.0                              | 11.0                               | 3.1                                    | 26.8                | 43,661 |
| Living with children and others    | 16.8                              | 10.7                               | 2.3                                    | 24.1                | 4,076  | 19.2                              | 9.8                                | 3.1                                    | 26.0                | 8,417  | 18.5                              | 10.1                               | 2.8                                    | 25.5                | 12,493 |
| Living with others only            | 14.7                              | 7.1                                | 2.1                                    | 19.6                | 1,183  | 20.9                              | 8.5                                | 3.3                                    | 26.3                | 1,714  | 18.6                              | 8.0                                | 2.9                                    | 23.7                | 2,897  |
| <b>Religion</b>                    |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Hindu                              | 18.3                              | 10.9                               | 2.7                                    | 26.0                | 29,838 | 19.7                              | 11.2                               | 3.4                                    | 27.5                | 22,962 | 18.9                              | 11.0                               | 3.1                                    | 26.7                | 52,800 |
| Muslim                             | 18.0                              | 7.8                                | 2.7                                    | 23.8                | 4,922  | 21.1                              | 9.3                                | 3.9                                    | 27.1                | 3,718  | 19.4                              | 8.5                                | 3.2                                    | 25.2                | 8,640  |
| Christian                          | 10.3                              | 9.9                                | 2.4                                    | 18.2                | 4,058  | 11.9                              | 8.9                                | 2.8                                    | 19.3                | 3,139  | 11.0                              | 9.4                                | 2.6                                    | 18.7                | 7,197  |
| Others                             | 18.4                              | 8.7                                | 2.8                                    | 25.0                | 1,841  | 18.6                              | 8.7                                | 3.1                                    | 25.3                | 1,541  | 18.5                              | 8.7                                | 2.9                                    | 25.1                | 3,382  |
| <b>Caste/tribe</b>                 |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Scheduled tribe                    | 20.8                              | 16.8                               | 3.1                                    | 31.3                | 7,327  | 22.8                              | 16.0                               | 3.5                                    | 31.4                | 5,156  | 21.7                              | 16.5                               | 3.2                                    | 31.4                | 12,483 |
| Scheduled caste                    | 18.8                              | 11.6                               | 3.2                                    | 26.6                | 6,886  | 22.0                              | 11.3                               | 3.6                                    | 30.1                | 5,128  | 20.2                              | 11.4                               | 3.3                                    | 28.2                | 12,014 |
| Other backward caste               | 17.8                              | 9.4                                | 2.5                                    | 24.8                | 15,245 | 19.2                              | 10.6                               | 3.2                                    | 26.6                | 11,838 | 18.4                              | 9.9                                | 2.8                                    | 25.6                | 27,083 |
| None of the above                  | 16.8                              | 9.2                                | 2.7                                    | 23.8                | 11,201 | 17.7                              | 9.4                                | 3.8                                    | 24.8                | 9,238  | 17.2                              | 9.3                                | 3.2                                    | 24.3                | 20,439 |
| <b>Education</b>                   |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| No schooling                       | 20.2                              | 12.7                               | 3.0                                    | 29.1                | 16,279 | 22.3                              | 12.5                               | 3.1                                    | 30.4                | 16,850 | 21.3                              | 12.6                               | 3.1                                    | 29.8                | 33,129 |
| Less than 5 years complete         | 18.7                              | 10.4                               | 3.2                                    | 26.2                | 4,261  | 18.7                              | 9.2                                | 4.2                                    | 25.4                | 3,773  | 18.7                              | 9.8                                | 3.7                                    | 25.8                | 8,034  |
| 5-9 years complete                 | 17.2                              | 9.7                                | 2.5                                    | 24.0                | 10,869 | 16.8                              | 9.7                                | 3.9                                    | 24.0                | 5,989  | 17.0                              | 9.7                                | 3.0                                    | 24.0                | 16,858 |
| 10 or more years complete          | 14.2                              | 6.6                                | 2.1                                    | 19.6                | 9,250  | 12.6                              | 7.0                                | 3.6                                    | 19.2                | 4,748  | 13.6                              | 6.8                                | 2.7                                    | 19.5                | 13,998 |

continued

continued

| Background characteristics               | Age 45-59*                        |                                    |                                        |                     |               | Age ≥ 60                          |                                    |                                        |                     |               | Total                             |                                    |                                        |
|------------------------------------------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|---------------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|---------------|-----------------------------------|------------------------------------|----------------------------------------|
|                                          | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number        | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number        | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> |
| <b>Work status</b>                       |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |
| Currently working                        | 18.4                              | 11.0                               | 2.5                                    | 25.9                | 23,612        | 20.8                              | 11.9                               | 3.3                                    | 28.6                | 9,278         | 19.1                              | 11.3                               | 2.8                                    |
| Worked in past but currently not working | 19.3                              | 11.6                               | 4.2                                    | 28.5                | 4,564         | 19.2                              | 10.5                               | 4.0                                    | 27.1                | 13,320        | 19.2                              | 10.8                               | 4.1                                    |
| Never worked                             | 16.7                              | 8.8                                | 2.6                                    | 23.5                | 12,483        | 18.7                              | 10.2                               | 2.7                                    | 25.6                | 8,762         | 17.6                              | 9.4                                | 2.6                                    |
| <b>MPCE quintile</b>                     |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |
| Poorest                                  | 18.2                              | 11.7                               | 2.4                                    | 25.9                | 7,648         | 21.0                              | 11.4                               | 3.4                                    | 27.9                | 6,460         | 19.5                              | 11.6                               | 2.9                                    |
| Poorer                                   | 19.6                              | 10.4                               | 2.1                                    | 26.5                | 8,030         | 21.7                              | 11.9                               | 2.8                                    | 29.2                | 6,453         | 20.6                              | 11.1                               | 2.4                                    |
| Middle                                   | 18.2                              | 10.8                               | 3.6                                    | 26.3                | 8,098         | 18.5                              | 9.5                                | 2.9                                    | 25.7                | 6,395         | 18.4                              | 10.2                               | 3.2                                    |
| Richer                                   | 16.7                              | 10.6                               | 2.8                                    | 24.8                | 8,492         | 18.6                              | 9.7                                | 3.1                                    | 25.5                | 6,154         | 17.6                              | 10.2                               | 2.9                                    |
| Richest                                  | 17.2                              | 8.4                                | 2.8                                    | 23.9                | 8,391         | 17.3                              | 11.8                               | 5.5                                    | 27.3                | 5,898         | 17.2                              | 9.8                                | 4.0                                    |
| <b>Total</b>                             | <b>18.0</b>                       | <b>10.4</b>                        | <b>2.7</b>                             | <b>25.5</b>         | <b>40,659</b> | <b>19.6</b>                       | <b>10.8</b>                        | <b>3.5</b>                             | <b>27.1</b>         | <b>31,360</b> | <b>18.7</b>                       | <b>10.6</b>                        | <b>3.1</b>                             |
| <b>26.3</b>                              |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |
| <b>72,019</b>                            |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |                     |               |                                   |                                    |                                        |

Notes

\*Including spouse irrespective of age

Reference period for any endemic disease is the 2 years prior to the survey.

<sup>1</sup> Water-borne diseases include diarrhea/gastroenteritis, typhoid, jaundice or hepatitis (any one or more).

<sup>2</sup> Vector-borne diseases include malaria, dengue or chikungunya (any one or more).

<sup>3</sup> Other infectious diseases include tuberculosis and urinary tract infection (any one or both).

**Table 8.8 Self-reported prevalence (%) of endemic diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*            |                        |                            |                     |        | Age ≥ 60              |                        |                            |                     |        | Total                 |                        |                            |                     |        |
|-----------------------|-----------------------|------------------------|----------------------------|---------------------|--------|-----------------------|------------------------|----------------------------|---------------------|--------|-----------------------|------------------------|----------------------------|---------------------|--------|
|                       | Water-borne diseases¹ | Vector-borne diseases² | Other infectious diseases³ | Any endemic disease | Number | Water-borne diseases¹ | Vector-borne diseases² | Other infectious diseases³ | Any endemic disease | Number | Water-borne diseases¹ | Vector-borne diseases² | Other infectious diseases³ | Any endemic disease | Number |
| India                 | 18.0                  | 10.4                   | 2.7                        | 25.5                | 40,659 | 19.6                  | 10.8                   | 3.5                        | 27.1                | 31,360 | 18.7                  | 10.6                   | 3.1                        | 26.3                | 72,019 |
| North                 |                       |                        |                            |                     |        |                       |                        |                            |                     |        |                       |                        |                            |                     |        |
| Chandigarh            | 12.8                  | 9.1                    | 2.3                        | 21.2                | 624    | 11.7                  | 9.8                    | 3.7                        | 22.7                | 387    | 12.4                  | 9.4                    | 2.8                        | 21.8                | 1,011  |
| Delhi                 | 19.1                  | 19.8                   | 3.1                        | 35.7                | 822    | 17.2                  | 19.3                   | 3.0                        | 34.4                | 495    | 18.4                  | 19.6                   | 3.0                        | 35.2                | 1,317  |
| Haryana               | 29.6                  | 22.4                   | 1.3                        | 43.8                | 1,048  | 34.3                  | 20.1                   | 3.2                        | 46.3                | 847    | 31.9                  | 21.3                   | 2.2                        | 45.0                | 1,895  |
| Himachal Pradesh      | 26.5                  | 1.3                    | 4.3                        | 28.9                | 765    | 29.1                  | 1.8                    | 3.7                        | 31.8                | 617    | 27.7                  | 1.5                    | 4.0                        | 30.3                | 1,382  |
| Jammu & Kashmir       | 9.6                   | 0.8                    | 6.3                        | 14.3                | 881    | 9.3                   | [0.1]                  | 4.7                        | 12.9                | 730    | 9.5                   | 0.4                    | 5.5                        | 13.6                | 1,611  |
| Punjab                | 24.4                  | 6.7                    | 4.1                        | 29.7                | 1,112  | 22.7                  | 5.7                    | 3.5                        | 27.5                | 1,003  | 23.6                  | 6.2                    | 3.8                        | 28.6                | 2,115  |
| Rajasthan             | 32.3                  | 27.4                   | 2.5                        | 46.6                | 1,161  | 32.7                  | 29.3                   | 3.2                        | 47.7                | 1,077  | 32.5                  | 28.3                   | 2.9                        | 47.1                | 2,238  |
| Uttarakhand           | 19.8                  | 8.4                    | 1.4                        | 26.0                | 716    | 12.2                  | 4.1                    | 1.6                        | 16.8                | 641    | 16.0                  | 6.2                    | 1.5                        | 21.4                | 1,357  |
| Central               |                       |                        |                            |                     |        |                       |                        |                            |                     |        |                       |                        |                            |                     |        |
| Chhattisgarh          | 35.7                  | 23.3                   | 1.8                        | 49.1                | 1,274  | 36.9                  | 20.0                   | 1.6                        | 48.5                | 779    | 36.1                  | 22.0                   | 1.7                        | 48.9                | 2,053  |
| Madhya Pradesh        | 28.0                  | 22.6                   | 3.6                        | 39.3                | 1,597  | 33.6                  | 22.7                   | 4.8                        | 43.5                | 1,312  | 30.7                  | 22.6                   | 4.2                        | 41.3                | 2,909  |
| Uttar Pradesh         | 28.9                  | 17.7                   | 2.9                        | 41.0                | 2,395  | 32.3                  | 15.5                   | 3.4                        | 41.3                | 2,166  | 30.6                  | 16.6                   | 3.2                        | 41.2                | 4,561  |
| East                  |                       |                        |                            |                     |        |                       |                        |                            |                     |        |                       |                        |                            |                     |        |
| Bihar                 | 35.6                  | 9.5                    | 4.0                        | 41.8                | 1,708  | 34.1                  | 10.3                   | 6.2                        | 40.6                | 1,806  | 34.8                  | 9.9                    | 5.2                        | 41.1                | 3,514  |
| Jharkhand             | 16.1                  | 16.0                   | 1.6                        | 27.3                | 1,293  | 16.7                  | 17.4                   | 3.1                        | 29.1                | 1,166  | 16.4                  | 16.7                   | 2.3                        | 28.2                | 2,459  |
| Odisha                | 11.5                  | 12.5                   | 3.0                        | 21.4                | 1,675  | 10.7                  | 11.4                   | 3.1                        | 20.3                | 1,233  | 11.2                  | 12.0                   | 3.0                        | 21.0                | 2,908  |
| West Bengal           | 12.1                  | 2.6                    | 1.9                        | 15.8                | 2,383  | 13.1                  | 2.4                    | 3.5                        | 16.7                | 1,541  | 12.5                  | 2.5                    | 2.6                        | 16.1                | 3,924  |
| Northeast             |                       |                        |                            |                     |        |                       |                        |                            |                     |        |                       |                        |                            |                     |        |
| Arunachal Pradesh     | 16.8                  | 12.4                   | 4.9                        | 26.2                | 897    | 23.1                  | 14.9                   | 5.4                        | 33.3                | 318    | 18.3                  | 13.0                   | 5.0                        | 27.9                | 1,215  |
| Assam                 | 11.8                  | 1.7                    | 2.7                        | 14.7                | 1,548  | 11.6                  | 1.6                    | 3.0                        | 14.3                | 814    | 11.7                  | 1.7                    | 2.8                        | 14.5                | 2,362  |
| Manipur               | 19.7                  | [0.4]                  | 4.8                        | 23.1                | 760    | 21.5                  | 1.1                    | 4.3                        | 25.9                | 605    | 20.5                  | 0.7                    | 4.6                        | 24.4                | 1,365  |
| Meghalaya             | 9.6                   | 6.8                    | 1.7                        | 14.5                | 556    | 8.7                   | 7.9                    | 1.6                        | 14.7                | 411    | 9.2                   | 7.3                    | 1.7                        | 14.6                | 967    |
| Mizoram               | 32.3                  | 3.6                    | 14.2                       | 41.2                | 714    | 35.3                  | 1.6                    | 13.6                       | 41.5                | 531    | 33.6                  | 2.7                    | 13.9                       | 41.3                | 1,245  |
| Nagaland              | 5.7                   | 1.3                    | 1.0                        | 6.8                 | 708    | 1.6                   | 1.2                    | 2.8                        | 4.8                 | 605    | 3.7                   | 1.2                    | 1.9                        | 5.8                 | 1,313  |
| Tripura               | 10.3                  | 3.8                    | 2.7                        | 15.1                | 732    | 12.2                  | 3.9                    | 3.1                        | 17.3                | 459    | 11.1                  | 3.8                    | 2.8                        | 15.9                | 1,191  |
| West                  |                       |                        |                            |                     |        |                       |                        |                            |                     |        |                       |                        |                            |                     |        |
| Dadra & Nagar Haveli  | 37.6                  | 17.8                   | 3.2                        | 44.1                | 633    | 43.7                  | 16.8                   | 1.3                        | 48.6                | 448    | 40.0                  | 17.4                   | 2.5                        | 45.9                | 1,081  |
| Daman & Diu           | 23.8                  | 10.7                   | 1.4                        | 30.7                | 557    | 14.4                  | 8.3                    | 2.4                        | 21.5                | 428    | 19.4                  | 9.6                    | 1.8                        | 26.4                | 985    |
| Goa                   | 4.0                   | [0.1]                  | 1.4                        | 5.3                 | 788    | 5.6                   | [0.9]                  | 2.6                        | 7.9                 | 634    | 4.7                   | [0.5]                  | 1.9                        | 6.5                 | 1,422  |
| Gujarat               | 19.1                  | 20.4                   | 7.0                        | 32.2                | 1,340  | 19.1                  | 20.7                   | 6.4                        | 31.1                | 980    | 19.1                  | 20.5                   | 6.7                        | 31.7                | 2,320  |
| Maharashtra           | 11.7                  | 4.9                    | 1.6                        | 15.7                | 2,176  | 9.6                   | 6.4                    | 2.4                        | 16.1                | 1,782  | 10.7                  | 5.6                    | 2.0                        | 15.9                | 3,958  |

continued

continued

| State/Union Territory     | Age 45-59*                        |                                    |                                        |                     |        | Age ≥ 60                          |                                    |                                        |                     |        | Total                             |                                    |                                        |                     |        |
|---------------------------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|--------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|--------|-----------------------------------|------------------------------------|----------------------------------------|---------------------|--------|
|                           | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number | Water-borne diseases <sup>1</sup> | Vector-borne diseases <sup>2</sup> | Other infectious diseases <sup>3</sup> | Any endemic disease | Number |
| <b>South</b>              |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |                                   |                                    |                                        |                     |        |
| Andaman & Nicobar Islands | 26.3                              | 9.9                                | 7.4                                    | 35.6                | 720    | 23.2                              | 6.2                                | 3.8                                    | 29.6                | 521    | 25.0                              | 8.4                                | 5.9                                    | 33.2                | 1,241  |
| Andhra Pradesh            | 9.0                               | 7.5                                | 2.0                                    | 14.9                | 1,566  | 7.8                               | 5.4                                | 2.1                                    | 13.1                | 1,099  | 8.5                               | 6.6                                | 2.0                                    | 14.2                | 2,665  |
| Karnataka                 | 10.0                              | 4.1                                | 2.0                                    | 14.1                | 1,410  | 11.2                              | 4.1                                | 2.2                                    | 15.2                | 1,001  | 10.5                              | 4.1                                | 2.1                                    | 14.6                | 2,411  |
| Kerala                    | 1.4                               | 1.9                                | 3.3                                    | 7.2                 | 1,276  | 3.7                               | 1.3                                | 5.0                                    | 10.8                | 1,206  | 2.6                               | 1.6                                | 4.2                                    | 9.1                 | 2,482  |
| Lakshadweep               | 2.1                               | 0.8                                | 2.3                                    | 5.4                 | 637    | 2.0                               | [0.2]                              | 2.4                                    | 5.2                 | 500    | 2.0                               | 0.5                                | 2.3                                    | 5.3                 | 1,137  |
| Puducherry                | 6.0                               | 2.1                                | 0.8                                    | 8.6                 | 787    | 3.6                               | 1.7                                | 2.3                                    | 7.9                 | 638    | 4.9                               | 1.9                                | 1.5                                    | 8.2                 | 1,425  |
| Tamil Nadu                | 6.3                               | 3.0                                | 1.0                                    | 9.9                 | 1,994  | 6.4                               | 3.4                                | 1.7                                    | 11.0                | 1,530  | 6.4                               | 3.2                                | 1.4                                    | 10.4                | 3,524  |
| Telangana                 | 8.3                               | 5.2                                | 1.6                                    | 16.0                | 1,406  | 8.8                               | 6.4                                | 2.3                                    | 18.9                | 1,050  | 8.5                               | 5.8                                | 1.9                                    | 17.3                | 2,456  |

Notes

\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

Reference period for any endemic disease is the 2 years prior to the survey.

<sup>1</sup> Water borne diseases include diarrhea/gastroenteritis, typhoid, jaundice or hepatitis (any one or more).

<sup>2</sup> Vector borne diseases include malaria, dengue or chikungunya (any one or more).

<sup>3</sup> Other infectious diseases include tuberculosis and urinary tract infection (any one or both).

### 8.3.1 Water-borne diseases

Water-borne diseases are those that are transmitted by drinking water contaminated with pathogenic microorganisms, such as protozoa, viruses, bacteria, and intestinal parasites. Most water-borne diseases are characterised by diarrhoea and can result in dehydration and, in very serious cases, even death. In the LASI, water-borne diseases included jaundice/hepatitis, typhoid, and diarrhoea/gastroenteritis diagnosed by a health professional in the past two years.

Tables 8.7 and 8.8 present self-reported prevalence of water-borne diseases by background characteristics and states/UTs. Overall, the prevalence of water-borne disease among older adults age 45 and above is 19%; among elderly age 60 and above, this rate is slightly higher (20%) than among older adults age 45-59 (18%). The prevalence of water-borne diseases among older adults age 45 and above residing in rural areas is almost twice (22%) the rate among those in urban areas (12%). By religion and caste, Hindu and Muslims (19% each) and Scheduled tribe (22%) have higher prevalence rates of water-borne diseases. The prevalence of water-borne disease is lower among older adults age 45 and above with a higher level of education and in higher MPCE quintiles.

The self-reported prevalence of water-borne diseases among older adults age 45 and above is higher in the demographically less advanced states of India and much lower in the demographically advanced states, ranging from more than 35% in Dadra & Nagar Haveli (40%) and Chhattisgarh (36%) to 2% in Lakshadweep. More than a third of elderly age 60 and above reported at least one water-borne disease in Dadra & Nagar Haveli (44%), Chhattisgarh (37%), Mizoram (35%), Madhya Pradesh (34%), Bihar (34%), Haryana (34%), Rajasthan (33%), and Uttar Pradesh (32%).

Table 8.9 presents the self-reported prevalence of jaundice/hepatitis, diarrhoea, and typhoid by background characteristics. Overall, the prevalence of jaundice/hepatitis, diarrhoea, and typhoid is 3%, 13%, and 6%, respectively. The prevalence of diarrhoea is higher among elderly age 60 and above (15%) compared to older adults age 45-59 (12%); the prevalence of jaundice/hepatitis and typhoid does not show much variation by age. Among the elderly age 60 and above, the prevalence of jaundice/hepatitis and typhoid is higher among the elderly belonging to a religion other than Hindu, Muslim, or Christian (4% and 8%, respectively) while that of diarrhoeal diseases is higher among Muslims (16%). Educational attainment of older adults age 45 and above is negatively related with the prevalence of water-borne diseases, with prevalence rate among those with no schooling that was nearly double that of those with 10 or more years of schooling.

Cross-state variations in self-reported prevalence of jaundice/hepatitis, diarrhoea, and typhoid are presented in Table 8.10. The self-reported prevalence of diagnosed jaundice/hepatitis is higher in Dadra & Nagar Haveli (29%) and Andaman & Nicobar (10%), and at least one in ten older adults age 45 and above reported typhoid in Haryana (14%), Punjab (14%), Himachal Pradesh (11%), and Madhya Pradesh (10%). The prevalence of diarrhoea varies from around 30% in Mizoram (31%), Bihar (31%), and Chhattisgarh (30%) to less than 1% in Nagaland (0.4%).



**Table 8.9 Self-reported prevalence (%) of diagnosed water-borne diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59*             |             |            |               | Age ≥ 60               |             |            |               | Total                  |             |            |               |
|---------------------------------------------|------------------------|-------------|------------|---------------|------------------------|-------------|------------|---------------|------------------------|-------------|------------|---------------|
|                                             | Jaundice/<br>hepatitis | Diarrhea    | Typhoid    | Number        | Jaundice/<br>hepatitis | Diarrhea    | Typhoid    | Number        | Jaundice/<br>hepatitis | Diarrhea    | Typhoid    | Number        |
| <b>Place of residence</b>                   |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Rural                                       | 3.6                    | 13.8        | 7.3        | 25,744        | 2.7                    | 17.1        | 6.5        | 20,679        | 3.2                    | 15.3        | 6.9        | 46,423        |
| Urban                                       | 2.0                    | 8.4         | 3.6        | 14,915        | 1.9                    | 9.4         | 3.2        | 10,681        | 2.0                    | 8.8         | 3.4        | 25,596        |
| <b>Sex</b>                                  |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Male                                        | 3.3                    | 12.4        | 5.8        | 15,419        | 2.7                    | 14.8        | 4.8        | 15,031        | 3.0                    | 13.6        | 5.3        | 30,450        |
| Female                                      | 3.0                    | 11.7        | 6.2        | 25,240        | 2.4                    | 14.9        | 6.1        | 16,329        | 2.7                    | 13.0        | 6.2        | 41,569        |
| <b>Marital status</b>                       |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Currently married                           | 3.1                    | 12.3        | 6.1        | 35,364        | 2.7                    | 14.5        | 5.6        | 19,853        | 2.9                    | 13.1        | 5.9        | 55,217        |
| Widowed                                     | 3.3                    | 10.5        | 6.3        | 3,864         | 2.2                    | 15.4        | 5.5        | 10,686        | 2.5                    | 14.3        | 5.6        | 14,550        |
| Divorced/Separated/Deserted/<br>Others      | 2.8                    | 8.2         | 4.2        | 1,431         | 2.6                    | 13.1        | 2.8        | 821           | 2.7                    | 10.0        | 3.7        | 2,252         |
| <b>Living arrangement</b>                   |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Living alone                                | 2.9                    | 10.6        | 5.8        | 689           | 2.8                    | 15.5        | 4.1        | 1,616         | 2.8                    | 14.4        | 4.4        | 2,305         |
| Living with spouse and/or others            | 2.8                    | 13.6        | 4.1        | 4,513         | 2.5                    | 13.0        | 4.6        | 6,150         | 2.6                    | 13.2        | 4.4        | 10,663        |
| Living with spouse and children             | 3.1                    | 12.0        | 6.4        | 30,198        | 2.8                    | 15.3        | 6.1        | 13,463        | 3.0                    | 13.0        | 6.3        | 43,661        |
| Living with children and others             | 3.4                    | 10.9        | 6.6        | 4,076         | 2.1                    | 14.9        | 5.5        | 8,417         | 2.5                    | 13.8        | 5.8        | 12,493        |
| Living with others only                     | 2.7                    | 10.3        | 3.6        | 1,183         | 2.4                    | 16.4        | 5.6        | 1,714         | 2.6                    | 14.1        | 4.8        | 2,897         |
| <b>Religion</b>                             |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Hindu                                       | 3.0                    | 12.5        | 5.9        | 29,838        | 2.4                    | 15.1        | 5.5        | 22,962        | 2.7                    | 13.7        | 5.7        | 52,800        |
| Muslim                                      | 4.1                    | 11.5        | 6.7        | 4,922         | 3.0                    | 16.3        | 5.2        | 3,718         | 3.6                    | 13.6        | 6.1        | 8,640         |
| Christian                                   | 1.9                    | 5.8         | 4.0        | 4,058         | 1.2                    | 7.3         | 4.8        | 3,139         | 1.6                    | 6.5         | 4.4        | 7,197         |
| Others                                      | 2.8                    | 7.7         | 10.6       | 1,841         | 3.7                    | 9.2         | 7.9        | 1,541         | 3.3                    | 8.4         | 9.3        | 3,382         |
| <b>Caste/tribe</b>                          |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Scheduled tribe                             | 4.6                    | 14.3        | 5.7        | 7,327         | 4.8                    | 16.2        | 6.1        | 5,156         | 4.7                    | 15.1        | 5.9        | 12,483        |
| Scheduled caste                             | 3.2                    | 11.7        | 7.0        | 6,886         | 2.9                    | 15.8        | 7.3        | 5,128         | 3.0                    | 13.5        | 7.1        | 12,014        |
| Other backward caste                        | 2.6                    | 12.3        | 5.9        | 15,245        | 2.0                    | 15.0        | 4.9        | 11,838        | 2.3                    | 13.5        | 5.4        | 27,083        |
| None of the above                           | 3.5                    | 10.8        | 5.8        | 11,201        | 2.4                    | 13.6        | 5.2        | 9,238         | 2.9                    | 12.1        | 5.5        | 20,439        |
| <b>Education</b>                            |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| No schooling                                | 3.4                    | 13.7        | 6.7        | 16,279        | 2.7                    | 16.8        | 6.2        | 16,850        | 3.0                    | 15.3        | 6.5        | 33,129        |
| Less than 5 years complete                  | 4.4                    | 11.2        | 6.9        | 4,261         | 3.1                    | 13.9        | 5.0        | 3,773         | 3.8                    | 12.5        | 6.0        | 8,034         |
| 5-9 years complete                          | 3.0                    | 11.0        | 6.2        | 10,869        | 2.2                    | 13.4        | 5.0        | 5,989         | 2.7                    | 11.9        | 5.7        | 16,858        |
| 10 or more years complete                   | 2.0                    | 10.1        | 4.2        | 9,250         | 1.7                    | 9.3         | 3.6        | 4,748         | 1.9                    | 9.8         | 4.0        | 13,998        |
| <b>Work status</b>                          |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Currently working                           | 3.0                    | 12.3        | 6.2        | 23,612        | 2.9                    | 15.6        | 5.8        | 9,278         | 2.9                    | 13.3        | 6.1        | 32,890        |
| Worked in past but currently not<br>working | 3.8                    | 12.5        | 6.9        | 4,564         | 2.4                    | 14.8        | 5.1        | 13,320        | 2.8                    | 14.2        | 5.6        | 17,884        |
| Never worked                                | 3.1                    | 11.1        | 5.4        | 12,483        | 2.2                    | 13.9        | 5.8        | 8,762         | 2.7                    | 12.3        | 5.5        | 21,245        |
| <b>MPCE quintile</b>                        |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Poorest                                     | 3.5                    | 12.7        | 5.6        | 7,648         | 2.6                    | 15.8        | 5.9        | 6,460         | 3.0                    | 14.2        | 5.7        | 14,108        |
| Poorer                                      | 3.2                    | 13.5        | 6.1        | 8,030         | 2.6                    | 17.0        | 5.5        | 6,453         | 2.9                    | 15.1        | 5.8        | 14,483        |
| Middle                                      | 3.6                    | 11.5        | 6.3        | 8,098         | 2.1                    | 14.1        | 4.9        | 6,395         | 2.9                    | 12.7        | 5.7        | 14,493        |
| Richer                                      | 2.8                    | 10.6        | 6.1        | 8,492         | 2.8                    | 13.6        | 5.9        | 6,154         | 2.8                    | 12.0        | 6.0        | 14,646        |
| Richest                                     | 2.4                    | 11.6        | 6.1        | 8,391         | 2.4                    | 12.9        | 5.3        | 5,898         | 2.4                    | 12.2        | 5.8        | 14,289        |
| <b>Total</b>                                | <b>3.1</b>             | <b>12.0</b> | <b>6.1</b> | <b>40,659</b> | <b>2.5</b>             | <b>14.8</b> | <b>5.5</b> | <b>31,360</b> | <b>2.8</b>             | <b>13.3</b> | <b>5.8</b> | <b>72,019</b> |

Note

\*Including spouse irrespective of age

**Table 8.10 Self-reported prevalence (%) of diagnosed water-borne diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*             |             |            |               | Age ≥ 60               |             |            |               | Total                  |             |            |               |
|---------------------------|------------------------|-------------|------------|---------------|------------------------|-------------|------------|---------------|------------------------|-------------|------------|---------------|
|                           | Jaundice/<br>hepatitis | Diarrhea    | Typhoid    | Number        | Jaundice/<br>hepatitis | Diarrhea    | Typhoid    | Number        | Jaundice/<br>hepatitis | Diarrhea    | Typhoid    | Number        |
| <b>India</b>              | <b>3.1</b>             | <b>12.0</b> | <b>6.1</b> | <b>40,659</b> | <b>2.5</b>             | <b>14.8</b> | <b>5.5</b> | <b>31,360</b> | <b>2.8</b>             | <b>13.3</b> | <b>5.8</b> | <b>72,019</b> |
| <b>North</b>              |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Chandigarh                | 1.7                    | 5.5         | 6.1        | 624           | 0.7                    | 8.6         | 3.2        | 387           | [1.3]                  | 6.7         | 4.9        | 1,011         |
| Delhi                     | 1.1                    | 14.4        | 5.3        | 822           | 0.2                    | 12.7        | 5.0        | 495           | [0.8]                  | 13.8        | 5.2        | 1,317         |
| Haryana                   | 2.7                    | 18.4        | 14.4       | 1,048         | 1.7                    | 24.7        | 13.8       | 847           | 2.2                    | 21.4        | 14.1       | 1,895         |
| Himachal Pradesh          | 2.5                    | 15.4        | 11.8       | 765           | 3.6                    | 20.3        | 9.6        | 617           | 3.0                    | 17.7        | 10.8       | 1,382         |
| Jammu & Kashmir           | 1.7                    | 6.8         | 3.7        | 881           | 1.0                    | 7.4         | 1.8        | 730           | 1.4                    | 7.1         | 2.8        | 1,611         |
| Punjab                    | 2.6                    | 10.1        | 15.7       | 1,112         | 1.4                    | 11.8        | 12.1       | 1,003         | 2.1                    | 10.9        | 14.0       | 2,115         |
| Rajasthan                 | 2.9                    | 28.3        | 5.3        | 1,161         | 1.2                    | 30.0        | 3.8        | 1,077         | 2.0                    | 29.1        | 4.5        | 2,238         |
| Uttarakhand               | 1.5                    | 11.6        | 9.8        | 716           | 1.0                    | 7.9         | 5.2        | 641           | 1.3                    | 9.7         | 7.5        | 1,357         |
| <b>Central</b>            |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Chhattisgarh              | 2.1                    | 30.1        | 7.5        | 1,274         | 1.6                    | 30.6        | 9.6        | 779           | 1.9                    | 30.3        | 8.3        | 2,053         |
| Madhya Pradesh            | 6.2                    | 21.0        | 9.2        | 1,597         | 5.7                    | 28.7        | 10.6       | 1,312         | 6.0                    | 24.7        | 9.9        | 2,909         |
| Uttar Pradesh             | 3.2                    | 20.7        | 10.0       | 2,395         | 2.1                    | 26.4        | 8.9        | 2,166         | 2.6                    | 23.5        | 9.4        | 4,561         |
| <b>East</b>               |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Bihar                     | 3.9                    | 32.0        | 7.4        | 1,708         | 3.2                    | 30.2        | 6.0        | 1,806         | 3.5                    | 31.1        | 6.6        | 3,514         |
| Jharkhand                 | 1.1                    | 10.2        | 6.7        | 1,293         | 1.4                    | 11.1        | 6.2        | 1,166         | 1.3                    | 10.6        | 6.5        | 2,459         |
| Odisha                    | 1.9                    | 5.0         | 6.1        | 1,675         | 0.9                    | 6.1         | 4.6        | 1,233         | 1.5                    | 5.5         | 5.4        | 2,908         |
| West Bengal               | 4.8                    | 5.5         | 2.9        | 2,383         | 4.3                    | 7.5         | 3.3        | 1,541         | 4.6                    | 6.3         | 3.1        | 3,924         |
| <b>Northeast</b>          |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Arunachal Pradesh         | 4.0                    | 9.1         | 6.5        | 897           | 8.4                    | 15.3        | 4.1        | 318           | 5.1                    | 10.6        | 5.9        | 1,215         |
| Assam                     | 6.6                    | 5.4         | 1.0        | 1,548         | 6.2                    | 6.4         | 1.2        | 814           | 6.4                    | 5.8         | 1.1        | 2,362         |
| Manipur                   | 1.6                    | 17.2        | 2.1        | 760           | 0.9                    | 19.8        | 1.5        | 605           | 1.3                    | 18.4        | 1.8        | 1,365         |
| Meghalaya                 | [0.2]                  | 7.6         | 2.8        | 556           | [0.9]                  | 6.1         | 3.2        | 411           | 0.5                    | 7.0         | 3.0        | 967           |
| Mizoram                   | 1.1                    | 29.4        | 2.9        | 714           | [0.5]                  | 33.6        | 3.1        | 531           | 0.8                    | 31.3        | 3.0        | 1,245         |
| Nagaland                  | 0.8                    | 0.8         | 4.3        | 708           | [0.4]                  | [0.1]       | 1.3        | 605           | 0.6                    | 0.4         | 2.8        | 1,313         |
| Tripura                   | 4.7                    | 4.1         | 2.5        | 732           | 5.5                    | 5.8         | 2.2        | 459           | 5.0                    | 4.7         | 2.4        | 1,191         |
| <b>West</b>               |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Dadra & Nagar Haveli      | 27.1                   | 15.0        | 3.9        | 633           | 30.8                   | 21.9        | 1.8        | 448           | 28.6                   | 17.7        | 3.1        | 1,081         |
| Daman & Diu               | 12.0                   | 13.1        | 1.9        | 557           | 5.7                    | 7.5         | 1.8        | 428           | 9.0                    | 10.4        | 1.8        | 985           |
| Goa                       | 1.0                    | 1.8         | 1.2        | 788           | 2.6                    | 2.5         | 1.4        | 634           | 1.7                    | 2.1         | 1.3        | 1,422         |
| Gujarat                   | 7.9                    | 12.7        | 6.9        | 1,340         | 6.4                    | 15.5        | 4.9        | 980           | 7.2                    | 14.0        | 6.0        | 2,320         |
| Maharashtra               | 3.6                    | 3.8         | 6.1        | 2,176         | 2.1                    | 4.2         | 4.5        | 1,782         | 2.9                    | 4.0         | 5.4        | 3,958         |
| <b>South</b>              |                        |             |            |               |                        |             |            |               |                        |             |            |               |
| Andaman & Nicobar Islands | 12.1                   | 16.7        | 4.3        | 720           | 7.8                    | 18.7        | 1.6        | 521           | 10.3                   | 17.5        | 3.2        | 1,241         |
| Andhra Pradesh            | 1.0                    | 0.7         | 7.8        | 1,566         | 1.0                    | 1.4         | 5.6        | 1,099         | 1.0                    | 1.0         | 6.9        | 2,665         |
| Karnataka                 | 0.7                    | 7.1         | 3.0        | 1,410         | 1.2                    | 8.8         | 1.8        | 1,001         | 0.9                    | 7.8         | 2.5        | 2,411         |
| Kerala                    | [0.2]                  | 1.1         | [0.2]      | 1,276         | [0.4]                  | 3.2         | [0.1]      | 1,206         | 0.3                    | 2.2         | 0.1        | 2,482         |
| Lakshadweep               | [0.2]                  | 1.7         | [0.2]      | 637           | [0.4]                  | 1.3         | [0.2]      | 500           | 0.3                    | 1.5         | [0.2]      | 1,137         |
| Puducherry                | 3.6                    | 1.7         | 1.0        | 787           | 0.9                    | 1.7         | 1.1        | 638           | 2.3                    | 1.7         | 1.0        | 1,425         |
| Tamil Nadu                | 0.6                    | 4.3         | 2.0        | 1,994         | 0.8                    | 4.9         | 1.0        | 1,530         | 0.7                    | 4.6         | 1.5        | 3,524         |
| Telangana                 | 0.7                    | 1.1         | 6.6        | 1,406         | 1.1                    | 0.9         | 7.1        | 1,050         | 0.9                    | 1.0         | 6.8        | 2,456         |

Note

\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

### 8.3.2 Vector-borne diseases

Vector-borne diseases are human illnesses caused by parasites, viruses, and bacteria that are transmitted by mosquitoes, sand-flies, blackflies, ticks, tsetse flies, mites, snails and lice. Together, the major vector-borne diseases account for nearly 17% of all infectious diseases globally. The burden of these diseases is highest in tropical and subtropical areas, and disproportionately affects the poorest populations (WHO, 2017c). Around 95% of the Indian population lives in areas with a high risk of malaria. Dengue is mostly an urban public health problem; however, outbreaks are also being increasingly documented in rural areas (WHO, 2014a).

In the LASI, information was collected on the reported prevalence of vector-borne diseases malaria, dengue, and chikungunya in the two years prior to the survey.

Tables 8.7 and 8.8 present the prevalence of vector-borne diseases (at least one) among older adults in India. The prevalence of any vector-borne disease among older adults age 45 and above in India is 11%. The prevalence of vector-borne disease is higher in rural (12%) than urban areas (8%); this rate is also higher among Hindu (11%) and Scheduled tribe (17%) compared to their respective counterparts. The prevalence rate is higher among currently working older adults age 45-59 and elderly age 60 and above compared to those currently not working. The prevalence of vector-borne diseases does not show much variation by age or sex; however, the prevalence rate shows a declining trend with increase in educational attainment and MPCE quintile.

The prevalence of vector-borne disease ranges from 28% in Rajasthan to less than 1% in Goa, Manipur, Jammu & Kashmir, and Lakshadweep. More than a fifth of elderly age 60 and above in Rajasthan (29%), Madhya Pradesh (23%), Gujarat (21%), Chhattisgarh (20%), and Haryana (20%) have been diagnosed with at least one vector-borne disease in the two years prior to the survey.

Table 8.11 presents the self-reported prevalence of malaria, dengue, and chikungunya by background characteristics. The overall prevalence of malaria, dengue, and chikungunya among older adults age 45 and above in India is 8.1%, 1.1%, and 2.4% respectively. The prevalence of malaria among older adults age 45 and above is higher in rural areas (10%) than in urban areas (4.1%), whereas the prevalence of dengue and chikungunya is slightly higher in urban (1.3% and 3.1%, respectively) than rural areas (0.9% and 2.2%, respectively). Older adults age 45 and above belonging to Scheduled tribe (16%) have much higher prevalence of malaria than most of the sub-groups of older adults by different characteristics. The prevalence of malaria decreases with increasing levels of education and MPCE quintile of households; however, the prevalence of dengue and chikungunya does not show any consistent variation with education and MPCE quintile.

Cross-state variations (Table 8.12) show that the self-reported prevalence of malaria among older adults age 45 and above is comparatively lower in southern Indian states than in northern Indian states. One in five older adults age 45 and above from Rajasthan (24%), Chhattisgarh (21%), and Madhya Pradesh (21%) reported having had malaria. The reported prevalence of dengue is relatively higher in Delhi (5.6%), Gujarat (4.1%), Chandigarh (3.1%), and Dadra & Nagar Haveli (3.1%), whereas the prevalence of chikungunya is reportedly higher among older adults age 45 and above in the states/UTs of Delhi (14%) and Haryana (7%).

**Table 8.11 Self-reported prevalence (%) of diagnosed vector-borne diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59* |            |               |               | Age ≥ 60   |            |               |               | Total      |            |               |               |
|---------------------------------------------|------------|------------|---------------|---------------|------------|------------|---------------|---------------|------------|------------|---------------|---------------|
|                                             | Malaria    | Dengue     | Chickun-gunya | Number        | Malaria    | Dengue     | Chickun-gunya | Number        | Malaria    | Dengue     | Chickun-gunya | Number        |
| <b>Place of residence</b>                   |            |            |               |               |            |            |               |               |            |            |               |               |
| Rural                                       | 9.6        | 0.9        | 2.4           | 25,744        | 10.3       | 0.9        | 1.9           | 20,679        | 10.0       | 0.9        | 2.2           | 46,423        |
| Urban                                       | 3.9        | 1.3        | 3.3           | 14,915        | 4.6        | 1.4        | 2.7           | 10,681        | 4.1        | 1.3        | 3.1           | 25,596        |
| <b>Sex</b>                                  |            |            |               |               |            |            |               |               |            |            |               |               |
| Male                                        | 8.3        | 1.1        | 2.3           | 15,419        | 8.4        | 0.8        | 2.1           | 15,031        | 8.4        | 0.9        | 2.2           | 30,450        |
| Female                                      | 7.3        | 1.1        | 2.9           | 25,240        | 8.8        | 1.3        | 2.2           | 16,329        | 7.9        | 1.2        | 2.6           | 41,569        |
| <b>Marital status</b>                       |            |            |               |               |            |            |               |               |            |            |               |               |
| Currently married                           | 7.8        | 1.1        | 2.7           | 35,364        | 9.2        | 1.0        | 2.4           | 19,853        | 8.3        | 1.0        | 2.6           | 55,217        |
| Widowed                                     | 8.0        | 0.9        | 2.7           | 3,864         | 7.7        | 1.2        | 1.7           | 10,686        | 7.8        | 1.1        | 2.0           | 14,550        |
| Divorced/Separated/<br>Deserted/Others      | 4.7        | 1.1        | 2.9           | 1,431         | 6.9        | 1.0        | 4.1           | 821           | 5.5        | 1.0        | 3.3           | 2,252         |
| <b>Living arrangement</b>                   |            |            |               |               |            |            |               |               |            |            |               |               |
| Living alone                                | 8.0        | 0.9        | 2.0           | 689           | 8.5        | 0.4        | 1.9           | 1,616         | 8.4        | 0.5        | 1.9           | 2,305         |
| Living with spouse and/or<br>others         | 6.8        | 1.1        | 2.4           | 4,513         | 9.0        | 1.0        | 2.6           | 6,150         | 8.1        | 1.0        | 2.5           | 10,663        |
| Living with spouse and<br>children          | 7.9        | 1.1        | 2.7           | 30,198        | 9.4        | 1.0        | 2.2           | 13,463        | 8.4        | 1.1        | 2.6           | 43,661        |
| Living with children and<br>others          | 7.8        | 1.1        | 2.8           | 4,076         | 7.8        | 1.2        | 1.8           | 8,417         | 7.8        | 1.1        | 2.1           | 12,493        |
| Living with others only                     | 4.9        | 0.5        | 2.4           | 1,183         | 6.2        | 1.7        | 2.3           | 1,714         | 5.7        | 1.2        | 2.3           | 2,897         |
| <b>Religion</b>                             |            |            |               |               |            |            |               |               |            |            |               |               |
| Hindu                                       | 8.0        | 1.1        | 2.9           | 29,838        | 9.0        | 1.0        | 2.3           | 22,962        | 8.5        | 1.1        | 2.6           | 52,800        |
| Muslim                                      | 5.5        | 1.1        | 1.9           | 4,922         | 7.2        | 1.2        | 1.8           | 3,718         | 6.2        | 1.1        | 1.9           | 8,640         |
| Christian                                   | 8.8        | 0.4        | 0.9           | 4,058         | 7.3        | 1.3        | 0.6           | 3,139         | 8.1        | 0.8        | 0.8           | 7,197         |
| Others                                      | 5.6        | 1.4        | 2.0           | 1,841         | 6.0        | 0.6        | 2.2           | 1,541         | 5.8        | 1.0        | 2.1           | 3,382         |
| <b>Caste/tribe</b>                          |            |            |               |               |            |            |               |               |            |            |               |               |
| Scheduled tribe                             | 16.1       | 0.8        | 1.3           | 7,327         | 14.9       | 0.8        | 1.8           | 5,156         | 15.6       | 0.8        | 1.5           | 12,483        |
| Scheduled caste                             | 8.2        | 1.5        | 3.4           | 6,886         | 9.0        | 1.1        | 2.2           | 5,128         | 8.5        | 1.3        | 2.9           | 12,014        |
| Other backward caste                        | 7.1        | 0.7        | 2.2           | 15,245        | 8.2        | 0.9        | 2.0           | 11,838        | 7.6        | 0.8        | 2.1           | 27,083        |
| None of the above                           | 5.5        | 1.4        | 3.6           | 11,201        | 7.3        | 1.3        | 2.4           | 9,238         | 6.3        | 1.4        | 3.0           | 20,439        |
| <b>Education</b>                            |            |            |               |               |            |            |               |               |            |            |               |               |
| No schooling                                | 9.7        | 1.2        | 3.0           | 16,279        | 10.0       | 1.0        | 2.1           | 16,850        | 9.9        | 1.1        | 2.5           | 33,129        |
| Less than 5 years complete                  | 8.2        | 0.8        | 2.4           | 4,261         | 7.9        | 1.2        | 1.4           | 3,773         | 8.1        | 1.0        | 1.9           | 8,034         |
| 5-9 years complete                          | 7.3        | 1.0        | 2.4           | 10,869        | 7.6        | 1.2        | 2.5           | 5,989         | 7.4        | 1.1        | 2.4           | 16,858        |
| 10 or more years complete                   | 3.9        | 1.1        | 2.6           | 9,250         | 4.8        | 1.0        | 2.6           | 4,748         | 4.2        | 1.1        | 2.6           | 13,998        |
| <b>Work status</b>                          |            |            |               |               |            |            |               |               |            |            |               |               |
| Currently working                           | 8.2        | 1.0        | 2.7           | 23,612        | 9.9        | 0.8        | 2.3           | 9,278         | 8.7        | 0.9        | 2.6           | 32,890        |
| Worked in past but<br>currently not working | 9.0        | 1.4        | 2.9           | 4,564         | 8.4        | 0.9        | 2.1           | 13,320        | 8.6        | 1.0        | 2.3           | 17,884        |
| Never worked                                | 6.0        | 1.1        | 2.6           | 12,483        | 7.5        | 1.6        | 2.2           | 8,762         | 6.7        | 1.3        | 2.4           | 21,245        |
| <b>MPCE quintile</b>                        |            |            |               |               |            |            |               |               |            |            |               |               |
| Poorest                                     | 9.5        | 1.3        | 2.3           | 7,648         | 9.6        | 0.7        | 1.9           | 6,460         | 9.6        | 1.0        | 2.1           | 14,108        |
| Poorer                                      | 8.2        | 0.8        | 2.1           | 8,030         | 9.6        | 1.1        | 2.2           | 6,453         | 8.9        | 0.9        | 2.1           | 14,483        |
| Middle                                      | 7.5        | 0.9        | 3.4           | 8,098         | 7.7        | 0.9        | 1.7           | 6,395         | 7.6        | 0.9        | 2.6           | 14,493        |
| Richer                                      | 7.3        | 1.3        | 3.3           | 8,492         | 7.2        | 1.1        | 2.0           | 6,154         | 7.3        | 1.2        | 2.7           | 14,646        |
| Richest                                     | 5.8        | 1.1        | 2.4           | 8,391         | 8.9        | 1.5        | 3.2           | 5,898         | 7.1        | 1.3        | 2.7           | 14,289        |
| <b>Total</b>                                | <b>7.7</b> | <b>1.1</b> | <b>2.7</b>    | <b>40,659</b> | <b>8.6</b> | <b>1.0</b> | <b>2.2</b>    | <b>31,360</b> | <b>8.1</b> | <b>1.1</b> | <b>2.4</b>    | <b>72,019</b> |

Note

\*Including spouse irrespective of age

**Table 8.12 Self-reported prevalence (%) of diagnosed vector-borne diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59* |            |               |               | Age ≥ 60   |            |               |               | Total      |            |               |               |
|---------------------------|------------|------------|---------------|---------------|------------|------------|---------------|---------------|------------|------------|---------------|---------------|
|                           | Malaria    | Dengue     | Chickun-gunya | Number        | Malaria    | Dengue     | Chickun-gunya | Number        | Malaria    | Dengue     | Chickun-gunya | Number        |
| <b>India</b>              | <b>7.7</b> | <b>1.1</b> | <b>2.7</b>    | <b>40,659</b> | <b>8.6</b> | <b>1.0</b> | <b>2.2</b>    | <b>31,360</b> | <b>8.1</b> | <b>1.1</b> | <b>2.4</b>    | <b>72,019</b> |
| <b>North</b>              |            |            |               |               |            |            |               |               |            |            |               |               |
| Chandigarh                | 3.2        | 3.6        | 2.8           | 624           | 4.0        | 2.5        | 3.4           | 387           | 3.6        | 3.1        | 3.1           | 1,011         |
| Delhi                     | 2.2        | 4.5        | 14.6          | 822           | 2.0        | 7.5        | 13.9          | 495           | 2.1        | 5.6        | 14.3          | 1,317         |
| Haryana                   | 13.1       | 2.1        | 9.5           | 1,048         | 13.3       | 2.8        | 5.1           | 847           | 13.2       | 2.4        | 7.4           | 1,895         |
| Himachal Pradesh          | 1.0        | [0.2]      | [0.3]         | 765           | 1.5        | -          | [0.2]         | 617           | 1.2        | [0.1]      | 0.2           | 1,382         |
| Jammu & Kashmir           | 0.6        | [0.1]      | [0.1]         | 881           | [0.1]      | -          | -             | 730           | 0.4        | [0.1]      | -             | 1,611         |
| Punjab                    | 3.0        | 2.7        | 1.3           | 1,112         | 3.2        | 2.0        | 0.8           | 1,003         | 3.1        | 2.4        | 1.0           | 2,115         |
| Rajasthan                 | 21.7       | 1.2        | 6.1           | 1,161         | 25.2       | 1.3        | 4.0           | 1,077         | 23.5       | 1.2        | 5.1           | 2,238         |
| Uttarakhand               | 3.3        | 2.4        | 3.5           | 716           | 2.0        | 1.2        | 1.6           | 641           | 2.6        | 1.8        | 2.6           | 1,357         |
| <b>Central</b>            |            |            |               |               |            |            |               |               |            |            |               |               |
| Chhattisgarh              | 22.6       | 0.7        | 0.5           | 1,274         | 18.9       | [0.3]      | 1.3           | 779           | 21.2       | 0.5        | 0.8           | 2,053         |
| Madhya Pradesh            | 20.6       | 0.7        | 3.4           | 1,597         | 21.8       | 1.5        | 2.6           | 1,312         | 21.2       | 1.1        | 3.0           | 2,909         |
| Uttar Pradesh             | 10.8       | 2.2        | 6.6           | 2,395         | 11.1       | 1.7        | 3.9           | 2,166         | 10.9       | 2.0        | 5.3           | 4,561         |
| <b>East</b>               |            |            |               |               |            |            |               |               |            |            |               |               |
| Bihar                     | 9.0        | 0.4        | [0.2]         | 1,708         | 9.6        | 0.6        | 0.3           | 1,806         | 9.3        | 0.5        | 0.3           | 3,514         |
| Jharkhand                 | 15.4       | [0.2]      | [0.3]         | 1,293         | 17.3       | [0.2]      | [0.2]         | 1,166         | 16.3       | 0.2        | 0.3           | 2,459         |
| Odisha                    | 12.1       | [0.3]      | 0.4           | 1,675         | 11.1       | [0.3]      | [0.1]         | 1,233         | 11.7       | 0.3        | 0.3           | 2,908         |
| West Bengal               | 1.1        | 1.4        | 0.3           | 2,383         | 1.8        | 0.6        | [0.1]         | 1,541         | 1.4        | 1.1        | 0.2           | 3,924         |
| <b>Northeast</b>          |            |            |               |               |            |            |               |               |            |            |               |               |
| Arunachal Pradesh         | 12.4       | -          | -             | 897           | 14.9       | -          | -             | 318           | 13.0       | -          | -             | 1,215         |
| Assam                     | 1.7        | -          | -             | 1,548         | 1.5        | -          | [0.1]         | 814           | 1.6        | -          | -             | 2,362         |
| Manipur                   | [0.4]      | -          | -             | 760           | 0.9        | [0.3]      | [0.1]         | 605           | 0.6        | [0.1]      | -             | 1,365         |
| Meghalaya                 | 6.8        | -          | -             | 556           | 7.9        | -          | -             | 411           | 7.3        | -          | -             | 967           |
| Mizoram                   | 3.3        | [0.2]      | -             | 714           | 1.6        | -          | -             | 531           | 2.6        | [0.1]      | -             | 1,245         |
| Nagaland                  | 1.2        | -          | -             | 708           | 1.2        | -          | -             | 605           | 1.2        | -          | -             | 1,313         |
| Tripura                   | 3.8        | -          | -             | 732           | 3.9        | -          | -             | 459           | 3.8        | -          | -             | 1,191         |
| <b>West</b>               |            |            |               |               |            |            |               |               |            |            |               |               |
| Dadra & Nagar Haveli      | 14.8       | 3.9        | [0.2]         | 633           | 15.1       | 2.0        | [0.1]         | 448           | 14.9       | 3.1        | [0.2]         | 1,081         |
| Daman & Diu               | 9.4        | [0.4]      | 1.2           | 557           | 7.3        | [0.4]      | 0.7           | 428           | 8.4        | 0.4        | 0.9           | 985           |
| Goa                       | -          | -          | [0.1]         | 788           | [0.8]      | [0.1]      | -             | 634           | [0.4]      | -          | [0.1]         | 1,422         |
| Gujarat                   | 18.2       | 4.3        | 5.9           | 1,340         | 19.1       | 3.9        | 5.1           | 980           | 18.6       | 4.1        | 5.5           | 2,320         |
| Maharashtra               | 2.6        | 0.5        | 1.9           | 2,176         | 3.6        | 0.3        | 2.7           | 1,782         | 3.1        | 0.4        | 2.3           | 3,958         |
| <b>South</b>              |            |            |               |               |            |            |               |               |            |            |               |               |
| Andaman & Nicobar Islands | 7.1        | 1.6        | 2.0           | 720           | 5.0        | [0.5]      | 1.4           | 521           | 6.2        | 1.2        | 1.8           | 1,241         |
| Andhra Pradesh            | 6.0        | 0.4        | 1.3           | 1,566         | 4.5        | [0.1]      | 0.9           | 1,099         | 5.4        | 0.3        | 1.1           | 2,665         |
| Karnataka                 | 1.2        | 0.4        | 2.8           | 1,410         | 1.0        | 0.5        | 2.7           | 1,001         | 1.1        | 0.4        | 2.8           | 2,411         |
| Kerala                    | -          | 1.2        | 0.7           | 1,276         | -          | 0.9        | 0.4           | 1,206         | -          | 1.0        | 0.5           | 2,482         |
| Lakshadweep               | -          | [0.4]      | [0.4]         | 637           | [0.2]      | -          | -             | 500           | [0.1]      | [0.2]      | [0.2]         | 1,137         |
| Puducherry                | -          | 1.8        | 0.3           | 787           | [0.4]      | [0.4]      | 0.8           | 638           | [0.2]      | 1.2        | 0.5           | 1,425         |
| Tamil Nadu                | -          | 0.5        | 2.6           | 1,994         | [0.1]      | 0.8        | 2.6           | 1,530         | 0.1        | 0.7        | 2.6           | 3,524         |
| Telangana                 | 3.6        | 0.4        | 1.7           | 1,406         | 5.1        | 0.6        | 0.8           | 1,050         | 4.3        | 0.5        | 1.3           | 2,456         |

Note

\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

### 8.3.3 Other infectious diseases

The self-reported prevalence of other infectious diseases, which include tuberculosis and urinary tract infections, in the past two years are presented in Tables 8.7 and 8.8. The overall prevalence of other infectious diseases in India is 3%, which is slightly higher among elderly age 60 and above (3.5%) than among older adults age 45-59 (2.7%). The prevalence rate is higher among older men (3.6%) than older women (2.7%). A higher proportion of older adults age 45-59 and elderly age 60 and above who worked in the past but are currently not working reported infectious disease (4%). The prevalence of other infectious diseases among elderly age 60 and above is highest in Mizoram (14%), followed by Gujarat (6%) and Bihar (6%).

Table 8.13 presents the prevalence of tuberculosis by background characteristics. The prevalence of tuberculosis among older adults age 45 and above in India is 1%. Among elderly age 60 and above, tuberculosis prevalence is higher among men (1.3%) than women (0.9%), and is higher in Scheduled tribe (1.6%). Table 8.14 presents cross-state variations in the reported prevalence for tuberculosis. More than 2% of older adults age 45 and above reported having had tuberculosis in the states of Gujarat (4.8%), Arunachal Pradesh (3.1%), Andaman & Nicobar (2.3%), and Bihar (2%).

Around 2% of older adults age 45 and above reported having had urinary tract infection (2.3%) (Table 8.13); this rate is slightly higher among elderly age 60 and above (2.5%) than among older adults age 45-59 (2.0%). Among older adults age 45-59, women (2.2%) have a higher prevalence of urinary tract infection than men (1.8%), while among elderly age 60 and above, men (3.1%) have a higher prevalence than women (2.1%). The prevalence of urinary tract infection among older adults age 45 and above is highest in Mizoram (13%), followed by Jammu & Kashmir (5%) and Gujarat (4.8%) (Table 8.14).

#### Key findings: endemic diseases

- The overall prevalence of water-borne diseases in India among elderly age 60 and above is 20%, the prevalence of vector-borne diseases is 11% and that of other infectious diseases is 4%.
- Elderly age 60 and above residing in rural area, women, living with spouse and children, Scheduled tribe and those currently working are more prone to endemic diseases.
- Among the elderly age 60 and above, the self-reported prevalence of endemic diseases is lower in the demographically advanced south Indian states/UTs of Kerala (11%), Tamil Nadu (11%), Puducherry (8%), and Lakshadweep (5%) besides Goa (8%) and Nagaland (5%); vector-borne diseases are more prevalent in the states of Rajasthan (29%), Madhya Pradesh (23%), Gujarat (21%), Chhattisgarh (20%) and Haryana (20%); whereas, water-borne diseases are more common in the demographically less advanced states/UTs of Dadra & Nagar Haveli (44%), Chhattisgarh (37%), Mizoram (35%), Madhya Pradesh (34%), Bihar (34%), Rajasthan (33%), and Uttar Pradesh (32%) besides Haryana (34%).
- By caste, the prevalence of water-borne and vector-borne diseases are pronounced among Scheduled tribe indicating vulnerable environmental, water and sanitation conditions among tribal communities.

**Table 8.13 Self-reported prevalence (%) of diagnosed other infectious diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59*        |                               |               | Age ≥ 60          |                               |               | Total             |                               |               |
|---------------------------------------------|-------------------|-------------------------------|---------------|-------------------|-------------------------------|---------------|-------------------|-------------------------------|---------------|
|                                             | Tubercu-<br>losis | Urinary<br>tract<br>infection | Number        | Tubercu-<br>losis | Urinary<br>tract<br>infection | Number        | Tubercu-<br>losis | Urinary<br>tract<br>infection | Number        |
| <b>Place of residence</b>                   |                   |                               |               |                   |                               |               |                   |                               |               |
| Rural                                       | 0.9               | 2.1                           | 25,744        | 1.1               | 2.5                           | 20,679        | 1.0               | 2.3                           | 46,423        |
| Urban                                       | 0.8               | 1.9                           | 14,915        | 1.0               | 2.7                           | 10,681        | 0.9               | 2.2                           | 25,596        |
| <b>Sex</b>                                  |                   |                               |               |                   |                               |               |                   |                               |               |
| Male                                        | 1.4               | 1.8                           | 15,419        | 1.3               | 3.1                           | 15,031        | 1.3               | 2.4                           | 30,450        |
| Female                                      | 0.6               | 2.2                           | 25,240        | 0.9               | 2.1                           | 16,329        | 0.7               | 2.2                           | 41,569        |
| <b>Marital status</b>                       |                   |                               |               |                   |                               |               |                   |                               |               |
| Currently married                           | 0.9               | 2.1                           | 35,364        | 1.2               | 2.7                           | 19,853        | 1.0               | 2.3                           | 55,217        |
| Widowed                                     | 1.0               | 1.4                           | 3,864         | 0.9               | 2.4                           | 10,686        | 0.9               | 2.2                           | 14,550        |
| Divorced/Separated/Deserted/<br>Others      | 0.8               | 1.2                           | 1,431         | 0.6               | 1.0                           | 821           | 0.7               | 1.1                           | 2,252         |
| <b>Living arrangement</b>                   |                   |                               |               |                   |                               |               |                   |                               |               |
| Living alone                                | [0.1]             | 1.6                           | 689           | 1.2               | 1.6                           | 1,616         | 0.9               | 1.6                           | 2,305         |
| Living with spouse and/or others            | 0.9               | 1.8                           | 4,513         | 1.0               | 2.7                           | 6,150         | 1.0               | 2.3                           | 10,663        |
| Living with spouse and children             | 0.9               | 2.2                           | 30,198        | 1.4               | 2.7                           | 13,463        | 1.0               | 2.4                           | 43,661        |
| Living with children and others             | 1.0               | 1.4                           | 4,076         | 0.8               | 2.3                           | 8,417         | 0.9               | 2.1                           | 12,493        |
| Living with others only                     | 0.9               | 1.6                           | 1,183         | 0.8               | 2.9                           | 1,714         | 0.8               | 2.4                           | 2,897         |
| <b>Religion</b>                             |                   |                               |               |                   |                               |               |                   |                               |               |
| Hindu                                       | 0.9               | 2.0                           | 29,838        | 1.1               | 2.5                           | 22,962        | 1.0               | 2.3                           | 52,800        |
| Muslim                                      | 0.7               | 2.2                           | 4,922         | 0.9               | 2.9                           | 3,718         | 0.8               | 2.5                           | 8,640         |
| Christian                                   | 0.6               | 1.9                           | 4,058         | 0.9               | 1.9                           | 3,139         | 0.7               | 1.9                           | 7,197         |
| Others                                      | 0.3               | 2.4                           | 1,841         | 1.6               | 2.1                           | 1,541         | 0.9               | 2.3                           | 3,382         |
| <b>Caste/tribe</b>                          |                   |                               |               |                   |                               |               |                   |                               |               |
| Scheduled tribe                             | 1.1               | 2.1                           | 7,327         | 1.6               | 2.2                           | 5,156         | 1.4               | 2.1                           | 12,483        |
| Scheduled caste                             | 1.0               | 2.5                           | 6,886         | 1.1               | 2.6                           | 5,128         | 1.0               | 2.5                           | 12,014        |
| Other backward caste                        | 0.8               | 1.7                           | 15,245        | 1.0               | 2.2                           | 11,838        | 0.9               | 2.0                           | 27,083        |
| None of the above                           | 0.8               | 2.3                           | 11,201        | 1.0               | 3.1                           | 9,238         | 0.9               | 2.7                           | 20,439        |
| <b>Education</b>                            |                   |                               |               |                   |                               |               |                   |                               |               |
| No schooling                                | 1.1               | 2.1                           | 16,279        | 1.1               | 2.1                           | 16,850        | 1.1               | 2.1                           | 33,129        |
| Less than 5 years complete                  | 1.0               | 2.5                           | 4,261         | 1.0               | 3.5                           | 3,773         | 1.0               | 3.0                           | 8,034         |
| 5-9 years complete                          | 0.7               | 2.0                           | 10,869        | 1.2               | 3.1                           | 5,989         | 0.9               | 2.4                           | 16,858        |
| 10 or more years complete                   | 0.5               | 1.8                           | 9,250         | 1.0               | 3.0                           | 4,748         | 0.7               | 2.2                           | 13,998        |
| <b>Work status</b>                          |                   |                               |               |                   |                               |               |                   |                               |               |
| Currently working                           | 0.7               | 2.0                           | 23,612        | 1.1               | 2.5                           | 9,278         | 0.8               | 2.2                           | 32,890        |
| Worked in past but currently not<br>working | 2.4               | 2.1                           | 4,564         | 1.2               | 2.9                           | 13,320        | 1.5               | 2.7                           | 17,884        |
| Never worked                                | 0.7               | 2.0                           | 12,483        | 0.9               | 2.0                           | 8,762         | 0.8               | 2.0                           | 21,245        |
| <b>MPCE quintile</b>                        |                   |                               |               |                   |                               |               |                   |                               |               |
| Poorest                                     | 0.8               | 1.9                           | 7,648         | 1.5               | 2.2                           | 6,460         | 1.2               | 2.1                           | 14,108        |
| Poorer                                      | 0.7               | 1.5                           | 8,030         | 0.9               | 2.0                           | 6,453         | 0.8               | 1.8                           | 14,483        |
| Middle                                      | 1.4               | 2.4                           | 8,098         | 0.7               | 2.3                           | 6,395         | 1.1               | 2.4                           | 14,493        |
| Richer                                      | 0.9               | 2.0                           | 8,492         | 0.6               | 2.5                           | 6,154         | 0.8               | 2.2                           | 14,646        |
| Richest                                     | 0.6               | 2.3                           | 8,391         | 1.7               | 4.0                           | 5,898         | 1.1               | 3.0                           | 14,289        |
| <b>Total</b>                                | <b>0.9</b>        | <b>2.0</b>                    | <b>40,659</b> | <b>1.1</b>        | <b>2.5</b>                    | <b>31,360</b> | <b>1.0</b>        | <b>2.3</b>                    | <b>72,019</b> |

Note

\*Including spouse irrespective of age



**Table 8.14 Self-reported prevalence (%) of diagnosed other infectious diseases among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*        |                               |               | Age ≥ 60          |                               |               | Total             |                               |               |
|---------------------------|-------------------|-------------------------------|---------------|-------------------|-------------------------------|---------------|-------------------|-------------------------------|---------------|
|                           | Tubercu-<br>losis | Urinary<br>tract<br>infection | Number        | Tubercu-<br>losis | Urinary<br>tract<br>infection | Number        | Tubercu-<br>losis | Urinary<br>tract<br>infection | Number        |
| <b>India</b>              | <b>0.9</b>        | <b>2.0</b>                    | <b>40,659</b> | <b>1.1</b>        | <b>2.5</b>                    | <b>31,360</b> | <b>1.0</b>        | <b>2.3</b>                    | <b>72,019</b> |
| <b>North</b>              |                   |                               |               |                   |                               |               |                   |                               |               |
| Chandigarh                | [0.7]             | 1.6                           | 624           | 1.7               | 2.0                           | 387           | 1.1               | 1.8                           | 1,011         |
| Delhi                     | [0.5]             | 2.6                           | 822           | 1.2               | 1.8                           | 495           | 0.8               | 2.3                           | 1,317         |
| Haryana                   | 0.4               | 1.0                           | 1,048         | 0.8               | 2.4                           | 847           | 0.6               | 1.7                           | 1,895         |
| Himachal Pradesh          | 1.0               | 3.4                           | 765           | 0.9               | 2.9                           | 617           | 0.9               | 3.1                           | 1,382         |
| Jammu & Kashmir           | [0.3]             | 6.0                           | 881           | 0.8               | 4.0                           | 730           | 0.5               | 5.0                           | 1,611         |
| Punjab                    | 0.5               | 3.6                           | 1,112         | 1.4               | 2.2                           | 1,003         | 0.9               | 2.9                           | 2,115         |
| Rajasthan                 | 0.9               | 1.6                           | 1,161         | 0.6               | 2.7                           | 1,077         | 0.8               | 2.1                           | 2,238         |
| Uttarakhand               | 0.9               | 0.7                           | 716           | [0.4]             | 1.2                           | 641           | 0.6               | 1.0                           | 1,357         |
| <b>Central</b>            |                   |                               |               |                   |                               |               |                   |                               |               |
| Chhattisgarh              | 0.7               | 1.1                           | 1,274         | [0.5]             | 1.1                           | 779           | 0.6               | 1.1                           | 2,053         |
| Madhya Pradesh            | 1.0               | 2.7                           | 1,597         | 0.6               | 4.2                           | 1,312         | 0.8               | 3.4                           | 2,909         |
| Uttar Pradesh             | 0.9               | 2.1                           | 2,395         | 1.0               | 2.5                           | 2,166         | 0.9               | 2.3                           | 4,561         |
| <b>East</b>               |                   |                               |               |                   |                               |               |                   |                               |               |
| Bihar                     | 1.1               | 3.0                           | 1,708         | 2.8               | 3.6                           | 1,806         | 2.0               | 3.3                           | 3,514         |
| Jharkhand                 | 0.3               | 1.2                           | 1,293         | 1.4               | 1.7                           | 1,166         | 0.9               | 1.5                           | 2,459         |
| Odisha                    | 0.6               | 2.4                           | 1,675         | 0.7               | 2.5                           | 1,233         | 0.7               | 2.4                           | 2,908         |
| West Bengal               | 0.3               | 1.7                           | 2,383         | 0.5               | 3.3                           | 1,541         | 0.4               | 2.3                           | 3,924         |
| <b>Northeast</b>          |                   |                               |               |                   |                               |               |                   |                               |               |
| Arunachal Pradesh         | 3.2               | 1.7                           | 897           | 2.9               | 2.5                           | 318           | 3.1               | 1.9                           | 1,215         |
| Assam                     | 0.5               | 2.3                           | 1,548         | 0.7               | 2.3                           | 814           | 0.6               | 2.3                           | 2,362         |
| Manipur                   | 1.4               | 3.5                           | 760           | 2.1               | 2.3                           | 605           | 1.7               | 2.9                           | 1,365         |
| Meghalaya                 | [0.2]             | 1.5                           | 556           | [0.5]             | 1.1                           | 411           | [0.4]             | 1.3                           | 967           |
| Mizoram                   | 0.8               | 13.4                          | 714           | [0.6]             | 13.0                          | 531           | 0.7               | 13.2                          | 1,245         |
| Nagaland                  | 0.6               | [0.5]                         | 708           | 2.0               | [0.8]                         | 605           | 1.3               | 0.6                           | 1,313         |
| Tripura                   | [0.5]             | 2.2                           | 732           | [0.1]             | 3.0                           | 459           | 0.3               | 2.5                           | 1,191         |
| <b>West</b>               |                   |                               |               |                   |                               |               |                   |                               |               |
| Dadra & Nagar Haveli      | [0.4]             | 2.9                           | 633           | 1.2               | [0.2]                         | 448           | 0.7               | 1.8                           | 1,081         |
| Daman & Diu               | [0.5]             | 0.8                           | 557           | 1.7               | [0.7]                         | 428           | 1.0               | 0.8                           | 985           |
| Goa                       | [0.3]             | 1.1                           | 788           | [0.6]             | 2.3                           | 634           | [0.4]             | 1.7                           | 1,422         |
| Gujarat                   | 5.2               | 5.2                           | 1,340         | 4.3               | 4.3                           | 980           | 4.8               | 4.8                           | 2,320         |
| Maharashtra               | [0.2]             | 1.5                           | 2,176         | 0.4               | 2.0                           | 1,782         | 0.3               | 1.7                           | 3,958         |
| <b>South</b>              |                   |                               |               |                   |                               |               |                   |                               |               |
| Andaman & Nicobar Islands | 3.2               | 4.1                           | 720           | 1.0               | 2.8                           | 521           | 2.3               | 3.6                           | 1,241         |
| Andhra Pradesh            | 0.4               | 1.5                           | 1,566         | 0.6               | 1.6                           | 1,099         | 0.5               | 1.6                           | 2,665         |
| Karnataka                 | 0.8               | 1.2                           | 1,410         | 1.1               | 1.2                           | 1,001         | 0.9               | 1.2                           | 2,411         |
| Kerala                    | [0.3]             | 3.1                           | 1,276         | 0.9               | 4.0                           | 1,206         | 0.6               | 3.6                           | 2,482         |
| Lakshadweep               | [0.1]             | 2.2                           | 637           | [0.1]             | 2.3                           | 500           | [0.1]             | 2.2                           | 1,137         |
| Puducherry                | [0.4]             | 0.4                           | 787           | 1.0               | 1.3                           | 638           | 0.7               | 0.8                           | 1,425         |
| Tamil Nadu                | [0.3]             | 0.7                           | 1,994         | 0.5               | 1.2                           | 1,530         | 0.4               | 1.0                           | 3,524         |
| Telangana                 | 0.7               | 0.9                           | 1,406         | [0.2]             | 2.1                           | 1,050         | 0.5               | 1.4                           | 2,456         |

Note

\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

## 8.4 WOMEN'S HEALTH

Women's health in middle and later life undergoes several changes related to the reproductive system; changes such as menopause (hot flashes, moodiness, headaches, and trouble sleeping), vaginal dryness, urinary tract changes osteoporosis etc. can have significant health implications (NIH, 2018). In India, the prevalence of hysterectomy, premature menopause, and cervical cancer is rising (Pallikadavath et al., 2016; Jungari and Chauhan, 2017; Prusty et al., 2018).

In the LASI, female participants age 45-59 were asked about their reproductive health conditions, including menstrual, menopausal, or gynaecological health concerns. These questions covered menstrual bleeding and reproductive health problems in the last 12 months, and whether treatment was taken for these problems. Information on hysterectomy and reason for hysterectomy was also collected. Additionally, information was collected on screening tests, such as pap smear for cervical cancer and mammography for breast cancer, in the past two years prior to the survey.

### 8.4.1 Reproductive health problems

Results about reproductive health problems among older women, including hot flashes, irregular vaginal discharge, genital prolapse, fibroids, cysts, and vaginal dryness in the past 12 months, are presented in this section.

Table 8.15 presents the self-reported prevalence of diagnosed reproductive health problems by background characteristics. In India, about 16% of older women age 45-59 reported having at least one reproductive health problem. Older women age 45-59 in rural areas (17%) reported higher prevalence of any reproductive health problem than older adult women in urban areas (14%). Currently married women (17%) and those living with a spouse and children (17%) have a higher prevalence of any reproductive health problems. By religion and caste, Muslim (21%) and Scheduled caste (17%) reported higher prevalence of any reproductive health problem.

State variations (Table 8.16) show that half of the older women age 45-59 from Mizoram (52%) and about a third of women in Himachal Pradesh (32%) reported having any reproductive health problem. The prevalence of any reproductive health problem is less than 5% in the states of Tripura (5%) and Andhra Pradesh (4%).

Genital prolapse occurs when the uterus sags or slips from its normal position and into the vagina. Fibroids are the most frequent tumours of the female reproductive system. Fibroids, also known as uterine myomas, leiomyomas, or fibromas, are firm, compact tumours that are made of smooth muscle cells and fibrous connective tissue that develop in the uterus.

The self-reported prevalence of genital prolapse and uterine fibroid/cyst by background characteristics and states/UTs is presented in Tables 8.15 and 8.16, respectively. Overall, the prevalence of genital prolapse and uterine fibroids/cysts among older adult women age 45-59 in India is 3% and 1%, respectively. The prevalence of genital prolapse is higher among older women age 45-59 who are currently married (2.9%) and those living with spouse and children (3%). By religion and caste, Muslim women (5.9%) and women from other backward caste (3.4%) reported relatively higher prevalence rates of genital prolapse. The reported prevalence of uterine fibroids/cysts is slightly higher among rural women (1.4%) than urban women (1.1%).

Table 8.16 presents cross-state variations in the prevalence of genital prolapse and uterine fibroids/cyst. The prevalence of genital prolapse is higher in the states/UTs of Uttar Pradesh (4.6%) and Bihar (4.2%). The prevalence of uterine fibroids/cysts in most states is lower than 2%, however a relatively larger proportion of older adult women age 45-59 reported having uterine fibroid/cyst in Punjab (6.7%), Goa (3.8%), and Kerala (3.8%).

**Table 8.15 Self-reported prevalence (%) of diagnosed reproductive health problems among older adult women age < 60 years by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age < 60 years*  |                            |                                                 | Number        |
|------------------------------------------|------------------|----------------------------|-------------------------------------------------|---------------|
|                                          | Genital prolapse | Uterine fibroids/<br>cysts | Any reproductive<br>health problem <sup>1</sup> |               |
| <b>Place of residence</b>                |                  |                            |                                                 |               |
| Rural                                    | 2.7              | 1.4                        | 17.1                                            | 15,829        |
| Urban                                    | 2.7              | 1.1                        | 13.5                                            | 9,307         |
| <b>Marital status</b>                    |                  |                            |                                                 |               |
| Currently married                        | 2.9              | 1.3                        | 16.7                                            | 20,954        |
| Widowed                                  | 1.6              | 1.2                        | 11.4                                            | 3,363         |
| Divorced/Separated/Deserted/Others       | [0.7]            | 1.2                        | 10.0                                            | 819           |
| <b>Living arrangement</b>                |                  |                            |                                                 |               |
| Living alone                             | 1.4              | 0.4                        | 11.4                                            | 462           |
| Living with spouse and/or others         | 2.5              | 1.3                        | 13.8                                            | 2,853         |
| Living with spouse and children          | 3.0              | 1.4                        | 17.2                                            | 17,682        |
| Living with children and others          | 1.3              | 1.1                        | 11.5                                            | 3,451         |
| Living with others only                  | 1.8              | 1.9                        | 11.5                                            | 688           |
| <b>Religion</b>                          |                  |                            |                                                 |               |
| Hindu                                    | 2.3              | 1.2                        | 15.3                                            | 18,406        |
| Muslim                                   | 5.9              | 1.2                        | 20.9                                            | 3,154         |
| Christian                                | 0.5              | 1.5                        | 9.1                                             | 2,476         |
| Others                                   | 1.7              | 3.5                        | 17.6                                            | 1,100         |
| <b>Caste/tribe</b>                       |                  |                            |                                                 |               |
| Scheduled tribe                          | 1.3              | 0.8                        | 12.5                                            | 4,440         |
| Scheduled caste                          | 2.5              | 1.5                        | 17.0                                            | 4,275         |
| Other backward caste                     | 3.4              | 1.3                        | 14.8                                            | 9,476         |
| None of the above                        | 2.0              | 1.4                        | 17.8                                            | 6,945         |
| <b>Education</b>                         |                  |                            |                                                 |               |
| No schooling                             | 2.4              | 1.5                        | 15.2                                            | 12,211        |
| Less than 5 years complete               | 2.1              | 0.9                        | 18.2                                            | 2,368         |
| 5-9 years complete                       | 2.3              | 1.4                        | 16.9                                            | 6,099         |
| 10 or more years complete                | 4.3              | 1.0                        | 15.1                                            | 4,458         |
| <b>Work status</b>                       |                  |                            |                                                 |               |
| Currently working                        | 3.2              | 1.4                        | 17.1                                            | 10,103        |
| Worked in past but currently not working | 1.9              | 1.4                        | 17.2                                            | 3,113         |
| Never worked                             | 2.4              | 1.2                        | 14.2                                            | 11,920        |
| <b>MPCE quintile</b>                     |                  |                            |                                                 |               |
| Poorest                                  | 1.9              | 0.9                        | 13.2                                            | 4,698         |
| Poorer                                   | 2.5              | 1.5                        | 15.8                                            | 4,982         |
| Middle                                   | 1.9              | 0.9                        | 15.5                                            | 5,028         |
| Richer                                   | 2.1              | 1.6                        | 15.4                                            | 5,238         |
| Richest                                  | 5.2              | 1.7                        | 19.5                                            | 5,190         |
| <b>Total</b>                             | <b>2.7</b>       | <b>1.3</b>                 | <b>15.8</b>                                     | <b>25,136</b> |

Notes

\* “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

# These questions are asked only to women of age < 60 years. This also includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

<sup>1</sup>Reproductive health problems include hot flashes, irregular vaginal discharge, uterine prolapse, fibroids, cysts, and vaginal dryness in the past 12 months (any one or more)

**Table 8.16 Self-reported prevalence (%) of diagnosed reproductive health problems among older adult women age < 60 years, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age < 60 years*  |                            |                                                 | Number        |
|---------------------------|------------------|----------------------------|-------------------------------------------------|---------------|
|                           | Genital prolapse | Uterine fibroids/<br>cysts | Any reproductive<br>health problem <sup>1</sup> |               |
| <b>India</b>              | <b>2.7</b>       | <b>1.3</b>                 | <b>15.8</b>                                     | <b>25,136</b> |
| <b>North</b>              |                  |                            |                                                 |               |
| Chandigarh                | 1.3              | 3.2                        | 13.4                                            | 366           |
| Delhi                     | -                | 1.0                        | 16.9                                            | 475           |
| Haryana                   | 2.6              | 2.6                        | 22.5                                            | 616           |
| Himachal Pradesh          | 1.7              | 1.7                        | 31.5                                            | 507           |
| Jammu & Kashmir           | 2.8              | 1.0                        | 16.4                                            | 551           |
| Punjab                    | 3.9              | 6.7                        | 23.8                                            | 690           |
| Rajasthan                 | 1.8              | 1.0                        | 9.2                                             | 699           |
| Uttarakhand               | 3.9              | [0.7]                      | 22.7                                            | 464           |
| <b>Central</b>            |                  |                            |                                                 |               |
| Chhattisgarh              | 0.6              | 0.8                        | 15.8                                            | 756           |
| Madhya Pradesh            | 3.3              | 2.9                        | 22.6                                            | 915           |
| Uttar Pradesh             | 4.6              | 1.6                        | 20.4                                            | 1,426         |
| <b>East</b>               |                  |                            |                                                 |               |
| Bihar                     | 4.2              | 1.5                        | 19.6                                            | 1,075         |
| Jharkhand                 | 3.0              | 0.9                        | 21.3                                            | 834           |
| Odisha                    | 1.5              | [0.2]                      | 8.5                                             | 1,019         |
| West Bengal               | 2.3              | 0.3                        | 20.0                                            | 1,514         |
| <b>Northeast</b>          |                  |                            |                                                 |               |
| Arunachal Pradesh         | [1.9]            | [1.0]                      | 22.8                                            | 521           |
| Assam                     | 0.5              | [0.1]                      | 9.3                                             | 956           |
| Manipur                   | [1.4]            | [0.7]                      | 14.6                                            | 438           |
| Meghalaya                 | -                | [0.4]                      | 11.8                                            | 348           |
| Mizoram                   | [0.7]            | [1.6]                      | 52.2                                            | 414           |
| Nagaland                  | [0.8]            | [0.4]                      | 10.8                                            | 418           |
| Tripura                   | [0.8]            | [0.2]                      | 4.7                                             | 468           |
| <b>West</b>               |                  |                            |                                                 |               |
| Dadra & Nagar Haveli      | [1.2]            | 2.7                        | 15.3                                            | 358           |
| Daman & Diu               | 1.7              | [0.3]                      | 11.0                                            | 330           |
| Goa                       | [0.5]            | 3.8                        | 9.9                                             | 507           |
| Gujarat                   | 0.8              | 1.2                        | 12.8                                            | 804           |
| Maharashtra               | 0.9              | 0.5                        | 14.3                                            | 1,393         |
| <b>South</b>              |                  |                            |                                                 |               |
| Andaman & Nicobar Islands | 3.8              | 1.0                        | 7.3                                             | 426           |
| Andhra Pradesh            | 1.3              | 0.9                        | 3.8                                             | 991           |
| Karnataka                 | 3.9              | 1.4                        | 18.5                                            | 918           |
| Kerala                    | 1.1              | 3.8                        | 20.3                                            | 824           |
| Lakshadweep               | -                | 1.6                        | 18.9                                            | 423           |
| Puducherry                | 1.1              | 2.9                        | 14.3                                            | 510           |
| Tamil Nadu                | 3.0              | 1.6                        | 10.2                                            | 1,280         |
| Telangana                 | 1.0              | 2.7                        | 5.6                                             | 902           |

**Notes**

\*"[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

# These questions are asked only to women of age < 60 years. This also Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

<sup>1</sup>Reproductive health problems include hot flashes, irregular vaginal discharge, uterine prolapse, fibroids, cysts, and vaginal dryness in the past 12 months (any one or more)

### 8.4.2 Hysterectomy

Hysterectomy, the surgical removal of uterus, is the second most frequently performed non-obstetric surgery after caesarean section in many parts of the world (Prusty et al., 2018). Knowledge regarding hysterectomies in India is limited, partly due to lack of information from large-scale national representative surveys (Shekhar et al., 2019). In the LASI, information about hysterectomy and the reason for undergoing hysterectomy was collected.

Table 8.17 presents the percentage of older adult women who had undergone hysterectomy by background characteristics. Overall, 11% of older adult women age 45 and above in India reported having undergone hysterectomy. The proportion is higher among older adult women age 45-59 (13%) compared to elderly women age 60 and above (10%). The proportion of older adult women age 45 and above who had undergone hysterectomy is higher in urban areas (15%) than rural areas (10%), and is found to increase with educational attainment as well as with MPCE quintile. Across MPCE quintiles, the percentage of older adult woman age 45 and above who had undergone hysterectomy is more than twice as high in the richest quintile (18%) than the poorest MPCE quintile (8%).

Table 8.18 presents the percentage of older adult women who had undergone hysterectomy by states/UTs. In Daman & Diu (24%), Andhra Pradesh (23%), and Punjab (21%), at least one in five older adult women age 45 and above reported having undergone hysterectomy. The proportion of older women who had undergone hysterectomy is lower in the north-eastern states of Assam (3%), Arunachal Pradesh (3%), Nagaland (2%), and Meghalaya (0.9%).

**Table 8.17 Percentage of women who had undergone hysterectomy among older adult women by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Hysterectomy |               |            |               |             |               |
|------------------------------------------|--------------|---------------|------------|---------------|-------------|---------------|
|                                          | Age 45-59*   | Number        | Age ≥ 60   | Number        | Total       | Number        |
| <b>Place of residence</b>                |              |               |            |               |             |               |
| Rural                                    | 10.9         | 15,874        | 7.9        | 10,609        | 9.6         | 26,483        |
| Urban                                    | 15.6         | 9,324         | 14.4       | 5,687         | 15.1        | 15,011        |
| <b>Marital status</b>                    |              |               |            |               |             |               |
| Currently married                        | 12.8         | 20,985        | 10.7       | 7,503         | 12.2        | 28,488        |
| Widowed                                  | 11.9         | 3,375         | 9.3        | 8,380         | 9.9         | 11,755        |
| Divorced/Separated/Deserted/Others       | 8.2          | 838           | 6.7        | 413           | 7.8         | 1,251         |
| <b>Living arrangement</b>                |              |               |            |               |             |               |
| Living alone                             | 11.9         | 463           | 8.0        | 1,250         | 8.8         | 1,713         |
| Living with spouse and/or others         | 13.1         | 2,859         | 11.3       | 2,459         | 12.2        | 5,318         |
| Living with spouse and children          | 12.8         | 17,705        | 10.4       | 4,935         | 12.3        | 22,640        |
| Living with children and others          | 12.3         | 3,464         | 10.2       | 6,476         | 10.9        | 9,940         |
| Living with others only                  | 5.9          | 707           | 4.9        | 1,176         | 5.3         | 1,883         |
| <b>Religion</b>                          |              |               |            |               |             |               |
| Hindu                                    | 12.9         | 18,448        | 10.2       | 11,909        | 11.8        | 30,357        |
| Muslim                                   | 10.6         | 3,167         | 5.4        | 1,916         | 8.6         | 5,083         |
| Christian                                | 8.7          | 2,482         | 8.3        | 1,676         | 8.5         | 4,158         |
| Others                                   | 13.7         | 1,101         | 15.7       | 795           | 14.6        | 1,896         |
| <b>Caste/tribe</b>                       |              |               |            |               |             |               |
| Scheduled tribe                          | 6.1          | 4,451         | 4.9        | 2,725         | 5.6         | 7,176         |
| Scheduled caste                          | 11.8         | 4,278         | 7.5        | 2,685         | 10.0        | 6,963         |
| Other backward caste                     | 15.0         | 9,498         | 11.6       | 6,074         | 13.6        | 15,572        |
| None of the above                        | 10.8         | 6,971         | 10.3       | 4,812         | 10.6        | 11,783        |
| <b>Education</b>                         |              |               |            |               |             |               |
| No schooling                             | 12.4         | 12,256        | 8.0        | 11,369        | 10.2        | 23,625        |
| Less than 5 years complete               | 11.1         | 2,372         | 11.6       | 1,594         | 11.3        | 3,966         |
| 5-9 years complete                       | 11.1         | 6,106         | 19.5       | 2,146         | 13.5        | 8,252         |
| 10 or more years complete                | 15.6         | 4,464         | 10.0       | 1,187         | 14.4        | 5,651         |
| <b>Work status</b>                       |              |               |            |               |             |               |
| Currently working                        | 14.2         | 10,118        | 7.7        | 2,966         | 12.6        | 13,084        |
| Worked in past but currently not working | 15.2         | 3,129         | 9.7        | 5,339         | 11.6        | 8,468         |
| Never worked                             | 10.1         | 11,951        | 10.9       | 7,991         | 10.5        | 19,942        |
| <b>MPCE quintile</b>                     |              |               |            |               |             |               |
| Poorest                                  | 8.4          | 4,711         | 7.2        | 3,432         | 7.8         | 8,143         |
| Poorer                                   | 9.4          | 5,002         | 7.4        | 3,392         | 8.6         | 8,394         |
| Middle                                   | 11.8         | 5,042         | 8.6        | 3,341         | 10.5        | 8,383         |
| Richer                                   | 12.7         | 5,247         | 14.2       | 3,169         | 13.3        | 8,416         |
| Richest                                  | 20.9         | 5,196         | 13.4       | 2,962         | 18.1        | 8,158         |
| <b>Total</b>                             | <b>12.5</b>  | <b>25,198</b> | <b>9.9</b> | <b>16,296</b> | <b>11.4</b> | <b>41,494</b> |

Notes

\*[" "] based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

\*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

**Table 8.18 Percentage of women who had undergone hysterectomy among older adult women, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Hysterectomy |               |            |               |             |               |
|---------------------------|--------------|---------------|------------|---------------|-------------|---------------|
|                           | Age 45-59*   | Number        | Age ≥ 60   | Number        | Total       | Number        |
| <b>India</b>              | <b>12.5</b>  | <b>25,198</b> | <b>9.9</b> | <b>16,296</b> | <b>11.4</b> | <b>41,494</b> |
| <b>North</b>              |              |               |            |               |             |               |
| Chandigarh                | 16.7         | 366           | 18.6       | 203           | 17.4        | 569           |
| Delhi                     | 11.2         | 475           | 18.8       | 243           | 13.8        | 718           |
| Haryana                   | 6.1          | 618           | 6.2        | 484           | 6.1         | 1,102         |
| Himachal Pradesh          | 12.2         | 508           | 14.3       | 316           | 13.1        | 824           |
| Jammu & Kashmir           | 9.0          | 552           | 7.5        | 349           | 8.4         | 901           |
| Punjab                    | 19.7         | 690           | 23.1       | 502           | 21.2        | 1,192         |
| Rajasthan                 | 7.3          | 700           | 5.9        | 572           | 6.7         | 1,272         |
| Uttarakhand               | 6.8          | 464           | 3.9        | 338           | 5.5         | 802           |
| <b>Central</b>            |              |               |            |               |             |               |
| Chhattisgarh              | 10.1         | 760           | 13.8       | 386           | 11.3        | 1,146         |
| Madhya Pradesh            | 9.6          | 917           | 9.6        | 668           | 9.6         | 1,585         |
| Uttar Pradesh             | 7.2          | 1,435         | 3.8        | 1,048         | 5.7         | 2,483         |
| <b>East</b>               |              |               |            |               |             |               |
| Bihar                     | 13.0         | 1,078         | 10.2       | 883           | 11.7        | 1,961         |
| Jharkhand                 | 7.0          | 834           | 5.1        | 581           | 6.2         | 1,415         |
| Odisha                    | 5.8          | 1,021         | 5.4        | 633           | 5.7         | 1,654         |
| West Bengal               | 7.8          | 1,512         | 5.4        | 785           | 6.9         | 2,297         |
| <b>Northeast</b>          |              |               |            |               |             |               |
| Arunachal Pradesh         | 3.9          | 521           | -          | 142           | 3.1         | 663           |
| Assam                     | 3.4          | 962           | 3.1        | 425           | 3.3         | 1,387         |
| Manipur                   | 7.8          | 440           | 4.2        | 344           | 6.1         | 784           |
| Meghalaya                 | [1.6]        | 348           | -          | 247           | [0.9]       | 595           |
| Mizoram                   | 4.3          | 415           | 4.2        | 266           | 4.3         | 681           |
| Nagaland                  | 2.4          | 420           | [0.7]      | 306           | 1.7         | 726           |
| Tripura                   | 4.7          | 468           | 5.1        | 232           | 4.9         | 700           |
| <b>West</b>               |              |               |            |               |             |               |
| Dadra & Nagar Haveli      | 13.9         | 358           | 9.2        | 251           | 12.0        | 609           |
| Daman & Diu               | 22.8         | 330           | 24.3       | 245           | 23.5        | 575           |
| Goa                       | 12.7         | 508           | 17.4       | 348           | 14.7        | 856           |
| Gujarat                   | 16.1         | 807           | 16.0       | 527           | 16.1        | 1,334         |
| Maharashtra               | 10.7         | 1,398         | 8.5        | 957           | 9.7         | 2,355         |
| <b>South</b>              |              |               |            |               |             |               |
| Andaman & Nicobar Islands | 20.1         | 429           | 15.2       | 246           | 18.4        | 675           |
| Andhra Pradesh            | 24.7         | 996           | 20.3       | 552           | 23.1        | 1,548         |
| Karnataka                 | 20.8         | 920           | 14.4       | 525           | 18.5        | 1,445         |
| Kerala                    | 9.0          | 824           | 15.5       | 668           | 12.1        | 1,492         |
| Lakshadweep               | 2.4          | 426           | 6.6        | 261           | 4.1         | 687           |
| Puducherry                | 9.1          | 511           | 8.2        | 363           | 8.7         | 874           |
| Tamil Nadu                | 12.5         | 1,285         | 9.9        | 846           | 11.4        | 2,131         |
| Telangana                 | 19.0         | 902           | 13.3       | 554           | 16.8        | 1,456         |

Notes

\*"[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

\*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

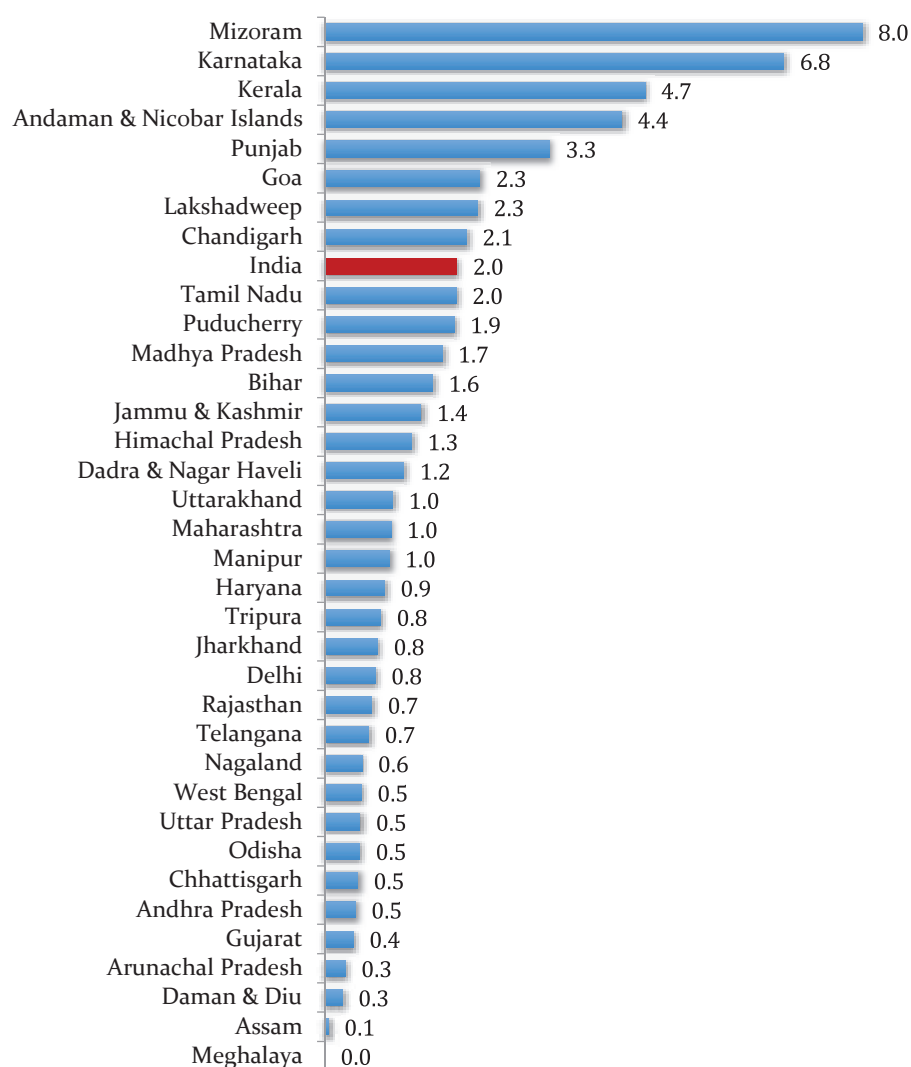


### 8.4.3 Pap smear test and mammogram

A medical professional uses a swab or stick to wipe cells from the cervix, the opening of the womb (uterus) to perform a pap smear test. These cells are then sent to a laboratory and evaluated to determine if the cells are abnormal. The test is used to screen for cervical cancer at an early stage, but can detect other gynaecologic problems as well. A mammography is a special X-ray of the breasts. It involves standing in front of a machine and having each breast placed between two plastic plates. The plates come together, pressing on the breast to make it as flat as possible. This procedure allows for lumps to be detected by the X-ray, which can help detect breast cancer at an early stage.

Figure 8.3 presents the percentage of older adult women age 45 and above who underwent a pap smear test by states/UTs. Overall, 2% of older adult women age 45 and above in India reported having undergone pap smear test. The percentage of older adult women age 45 and above who had undergone a pap smear test is higher in the states of Mizoram (8%), followed by Karnataka (7%) and Kerala (5%).

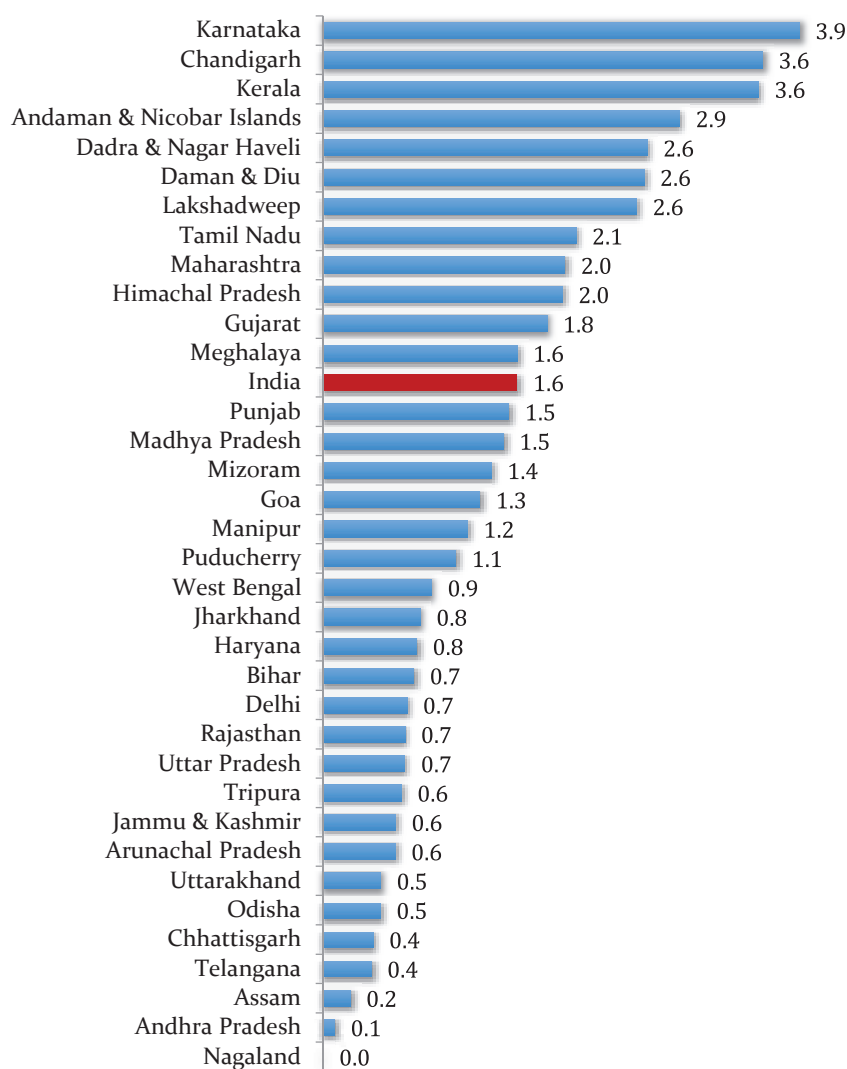
**Figure 8.3 Percentage of older adult women age 45 and above\* who have undergone a pap smear test, states/UTs, India, LASI Wave 1, 2017-18**



\*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

Figure 8.4 shows the percentage of older women age 45 and above who had undergone mammography by states/UTs. Overall, 1.6% of older adult women age 45 and above have undergone mammography in India. A higher percentage of older adult women age 45 and above in Karnataka (3.9%), Chandigarh (3.6%), and Kerala (3.6%) have undergone mammography.

**Figure 8.4 Percentage of older adult women age 45 and above\* who have undergone mammography, states/UTs, India, LASI Wave 1, 2017-18**



Note

\*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

### Key findings: women's health

- In India, about 16% of older women age 45-59 reported having reproductive health problems such as hot flashes, irregular vaginal discharge, uterine prolapse, fibroids, cysts, and vaginal dryness in the past 12 months prior to the survey.
- Older adult women age 45-59 who are currently married, those living with spouse and children, residing in rural area and belonging to Muslim religion are more likely to report with any reproductive health problem.
- A higher proportion of older adult women age 45 and above who have undergone pap smear for cervical cancer screening in Mizoram (8%), Karnataka (7%), and Kerala (5%); whereas, higher proportion of older adult women age 45 and above had undergone mammography for breast cancer screening in demographically advanced states/UTs such as Karnataka (3.9%), Chandigarh (3.6%), Kerala (3.6%).

## 9. Direct Health Examinations: Biomarkers

In the absence of objective measures of health, researchers in India relied on self-reported morbidity data from cross-sectional surveys. However, it is well recognised that several potential biases affect self-reported morbidity data. In recent times, the limitations of self-reported health data have encouraged researchers to use biological markers (biomarkers) in large-scale population health surveys. The inclusion of biomarkers in large-scale surveys represents an important innovation in the Longitudinal Ageing Study in India (LASI). This is particularly crucial for India in view of the lower prevalence rates of self-reported morbidity attributed to the low awareness of symptoms of many health conditions, limited access to health care services, and inadequate diagnoses (Sen, 2002; Arokiasamy et al., 2016a). Biomarkers serve as important diagnostic tools to identify diseases in early stages, track changes in disease patterns, and evaluate the effect of health intervention programmes over time. Compared to self-reported health data, biomarker data allow for a more accurate assessment of disease burden and better analysis of the risk factors underlying chronic diseases; they can also be used to study the effectiveness of various health interventions and to measure the long-term effects of policies and programmes. To better assess the physical health of the study population, the LASI included both self-reported health questions and biomarker module. Furthermore, the repeated collection of biomarkers from the same individuals can offer an improved understanding of how physiological processes change with age, the conditions associated with ageing, and the ageing process itself (Arokiasamy et al., 2016a).

The LASI included several internationally validated, relatively inexpensive, and logistically feasible biomarker tests. The full range of the LASI biomarkers included in the LASI are: measures of functional health (physiology), performance-based markers, anthropometric measures, and dried blood spot (DBS)-based markers for assessing non-communicable diseases/risk factors. The prevalence rates of chronic health conditions based on direct health examinations include hypertension, visual impairment, overweight/obesity or undernutrition, chronic respiratory diseases, anaemia, and diabetes. Furthermore, biomarkers, together with information on self-reported diagnosed conditions, provide crucial information for estimating undiagnosed, untreated, and undertreated rates of health conditions. The following chart provides descriptions of biomarkers included in the LASI and the health risks associated with it.

**Chart 9.1: Description of biomarkers and their associated health risks, LASI Wave 1, 2017–18**

| Biomarker                                         | Description                                                                                                | Health risks                                                                        |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Functional health (Physiology)<sup>1</sup></b> |                                                                                                            |                                                                                     |
| <b>Blood pressure</b>                             |                                                                                                            |                                                                                     |
| Systolic blood pressure                           | Measure of cardiovascular activity: maximum pressure in an artery when the heart contracts and pumps blood | Cardiovascular diseases (CVDs) (stroke, coronary heart disease [CHD]) and mortality |
| Diastolic blood pressure                          | Measure of cardiovascular activity: minimum pressure in an artery when the heart is resting                |                                                                                     |
| Resting pulse rate                                | Measure of heart function and measures overall fitness                                                     |                                                                                     |

Continued

Continued

| Biomarker                                                         | Description                                                                                                                | Health risks                                                                                                                                                  |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lung function test (Spirometry) <sup>1</sup>                      |                                                                                                                            |                                                                                                                                                               |
| (a) Forced vital capacity (FVC)                                   | The total volume of air that a person can forcibly exhale in one breath                                                    | Chronic obstructive pulmonary disease, restrictive lung disease                                                                                               |
| (b) Forced expired volume in 1 second (FEV1)                      | The volume of air that a person can exhale in the first second of forced expiration                                        |                                                                                                                                                               |
| (c) FEV1/FVC                                                      | The ratio of FEV1 to FVC expressed as a percentage                                                                         |                                                                                                                                                               |
| Visual acuity                                                     |                                                                                                                            |                                                                                                                                                               |
|                                                                   | Measure of impairment of visual functioning                                                                                | Refractive errors, blindness due to different causes                                                                                                          |
| Performance-based markers <sup>1</sup>                            |                                                                                                                            |                                                                                                                                                               |
| Grip strength                                                     | Measure of upper body muscle strength measured in kilograms                                                                | Frailty, falls, and functional limitations.                                                                                                                   |
| Balance tests (semi-tandem, full tandem, side-by-side)            | Indicator of static balance, measured progressively from semi-tandem to either side-by-side or full tandem                 | Disability, risk of falls, and neurological conditions.                                                                                                       |
| Timed walk                                                        | Measure of functional capacity                                                                                             | Self-reported health, functional disability, and risk of recurrent falls                                                                                      |
| Anthropometry <sup>1</sup>                                        |                                                                                                                            |                                                                                                                                                               |
| Body mass index (BMI)                                             | Indicator of obesity and the balance between energy intake and energy expenditure                                          | CVDs, diabetes mellitus, mortality, certain cancers, and osteoarthritis.                                                                                      |
| High-risk waist circumference<br>High-risk waist- hip ratio (WHR) | Indicator of abdominal obesity                                                                                             | Hypertension, CHD,non-insulin-dependent diabetes, and stroke                                                                                                  |
| Dried blood spot (DBS) markers*                                   |                                                                                                                            |                                                                                                                                                               |
| Haemoglobin (Hb)                                                  | Hb is a marker of anaemia                                                                                                  | Fatigue, weakness, dizziness, and drowsiness.<br>Iron deficiency is the most common cause of anaemia. <sup>1</sup>                                            |
| Glycosylated haemoglobin (HbA1c)                                  | Integrated measure of glucose metabolism over the previous 30–90 days                                                      | Diabetes mellitus.<br>Elevated HbA1c is regarded as an independent risk factor for CHD and stroke in individuals. <sup>1</sup>                                |
| High sensitivity-C-reactive protein (hs-CRP)                      | hs-CRP is a marker of inflammation.<br>hs-CRP levels rise in response to inflammation<br>hs-CRP is produced by liver cells | Inflammation, infection, trauma, necrosis, malignancy, and allergic reaction. <sup>1</sup><br>The hs-CRP level also increases with age and CVDs. <sup>2</sup> |
| Cytomegalovirus (CMV) antibody titre                              | CMV antibodies are markers of immune function. Antibodies for CMV indicate current, recent, or previous infection          | Cancer, CVDs, cognitive impairment such as dementia, and functional impairment. <sup>4</sup>                                                                  |

Note:

\* DBS-based tests are currently in progress and the results of DBS-based markers will be disseminated separately in due course.

(Sources: <sup>1</sup>Arokiasamy et al., 2016a, <sup>2</sup>Seo, 2012, <sup>3</sup>De Paschale and Clerici, 2012, <sup>4</sup>Roberts et al., 2010, <sup>5</sup>Gabay, 2006, <sup>6</sup>Tanaka et al., 2014,

## BIOMARKER MEASUREMENT PROTOCOLS

For each survey participant, the study protocol was described and the steps of each biomarker test were demonstrated by the trained health investigators. Participant's consent (signed/oral) was obtained both for the interviews and the biomarker tests and signed consent was obtained additionally for the collection of Dried Blood Spot (DBS) samples. A detailed description of the biomarker protocol and instruments is provided in Appendix 3A.

### 9.1 MEASURED BLOOD PRESSURE

Blood pressure was measured to determine whether the survey participants had raised blood pressure. Blood pressure does not remain constant; rather, it tends to change. However, raised blood pressure is a potential risk factor for a number of chronic non-communicable diseases such as coronary heart disease, strokes, etc. In the LASI, blood pressure was measured using an Omron HEM 7121 BP monitor, adopting internationally comparable protocols. Additional information on smoking, exercise, and consumption of alcohol or food 30 minutes prior to the blood pressure measurement was also collected. In addition to blood pressure, the pulse rate (unit beats per minute, bpm) was also measured for all consenting respondents.

Table 9.1 presents the mean systolic and diastolic blood pressure and pulse rate by background characteristics and states/UTs. Among older adults age 45 and above in India, the mean systolic blood pressure is 127 mmHg, diastolic pressure is 81 mmHg, and pulse rate is 81 bpm. The mean systolic blood pressure is 9 mmHg points higher among elderly age 60 and above (132 mmHg) than among older adults age 45-59 (123 mmHg), whereas the mean diastolic blood pressure is lower among elderly age 60 and above (80 mmHg) than among older adults age 45-59 (82 mmHg). Among elderly age 60 and above, the mean systolic blood pressure is higher in those residing in urban areas (134 mmHg) than in those residing in rural areas (131 mmHg), higher among women (133 mmHg) than among men (130 mmHg), and higher among those who are widowed (134 mmHg) than among those who are currently married (130 mmHg). The mean systolic blood pressure is consistently higher across all states/UTs among elderly age 60 and above than among older adults age 45-59 (Table 9.2).

Figures 9.1 and 9.2 show the mean systolic and diastolic blood pressure by age and by sex and age and place of residence, respectively. Overall, the mean systolic blood pressure increases and the mean diastolic blood pressure decreases with advancing age. Among older adults age below 55, the mean systolic blood pressure is higher among men than among women, whereas among those age 55 and above, the mean systolic blood pressure is higher among women than among men. The mean systolic and diastolic blood pressures are higher across all age groups in those residing in urban areas than in those residing in rural areas.

**Figure 9.1 Mean systolic and diastolic measured blood pressure (mmHg) among older adults by age and sex, LASI Wave 1, 2017-18**

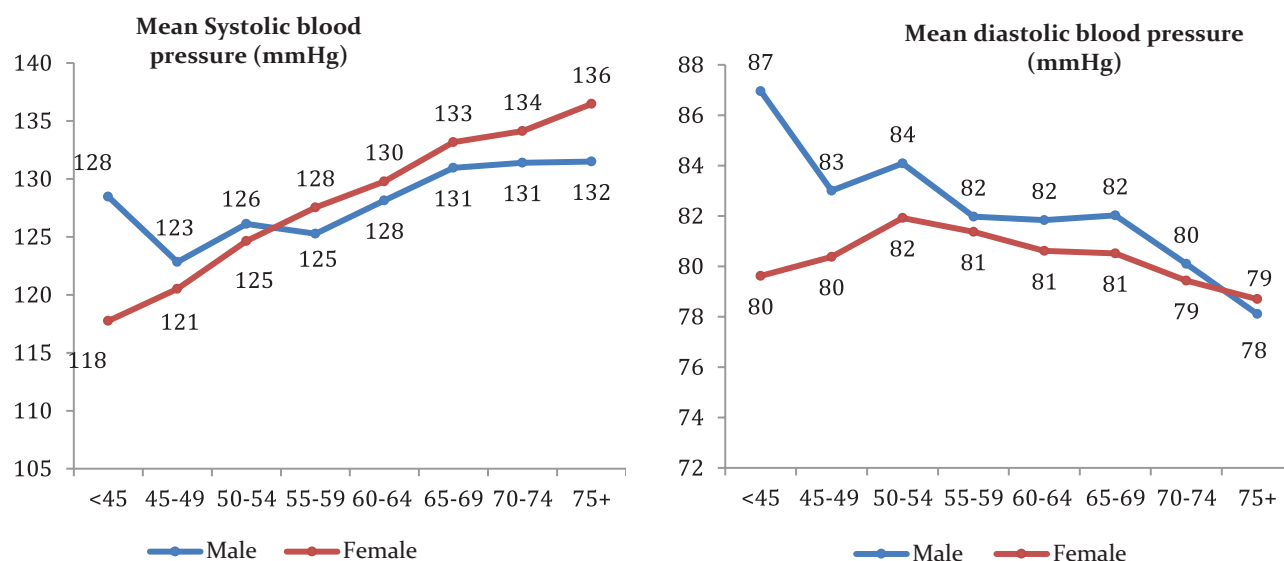


**Figure 9.2 Mean systolic and diastolic measured blood pressure (mmHg) among older adults by age and place of residence, LASI Wave 1, 2017-18**

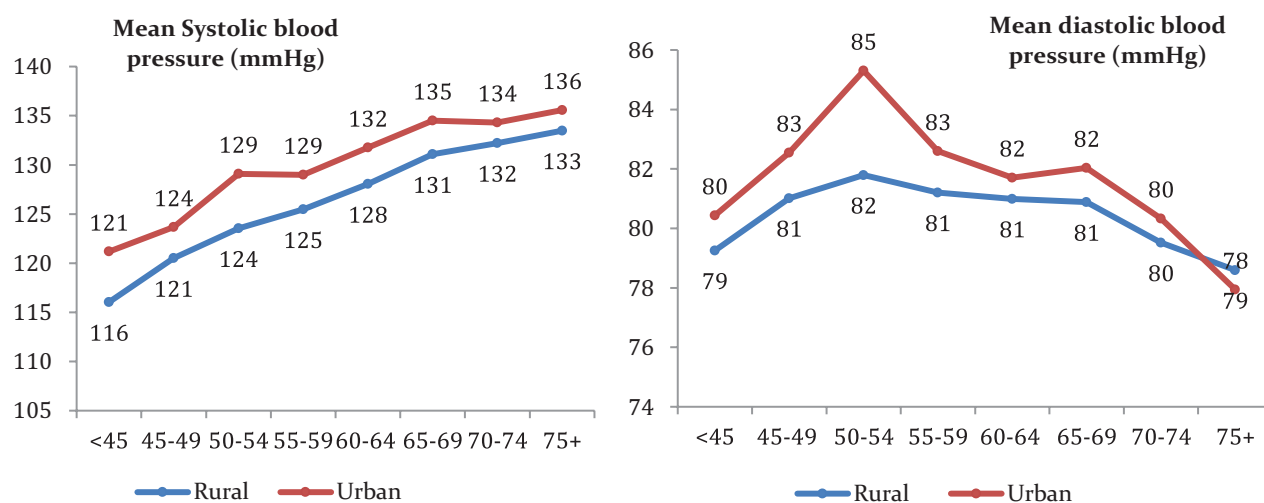




**Table 9.1 Mean systolic and diastolic blood pressure (mmHg) and pulse rate among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics          | Age 45-59*              |                          |            |               | Age ≥ 60                |                          |            |               | Total                   |                          |            |               |
|-------------------------------------|-------------------------|--------------------------|------------|---------------|-------------------------|--------------------------|------------|---------------|-------------------------|--------------------------|------------|---------------|
|                                     | Systolic blood pressure | Diastolic blood pressure | Pulse rate | Number        | Systolic blood pressure | Diastolic blood pressure | Pulse rate | Number        | Systolic blood pressure | Diastolic blood pressure | Pulse rate | Number        |
| <b>Place of residence</b>           |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Rural                               | 122                     | 81                       | 82         | 23,860        | 131                     | 80                       | 80         | 18,966        | 126                     | 81                       | 81         | 42,826        |
| Urban                               | 126                     | 83                       | 82         | 13,396        | 134                     | 81                       | 80         | 9,529         | 129                     | 82                       | 81         | 22,925        |
| <b>Sex</b>                          |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Male                                | 125                     | 83                       | 80         | 13,973        | 130                     | 81                       | 78         | 13,709        | 128                     | 82                       | 79         | 27,682        |
| Female                              | 122                     | 81                       | 83         | 23,283        | 133                     | 80                       | 82         | 14,786        | 127                     | 80                       | 83         | 38,069        |
| <b>Marital status</b>               |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Currently married                   | 123                     | 82                       | 82         | 32,438        | 130                     | 81                       | 79         | 18,172        | 126                     | 81                       | 81         | 50,610        |
| Widowed                             | 127                     | 82                       | 83         | 3,571         | 134                     | 80                       | 82         | 9,592         | 132                     | 81                       | 82         | 13,163        |
| Divorced/Separated/Deserted/ Others | 124                     | 81                       | 81         | 1,247         | 133                     | 81                       | 80         | 731           | 127                     | 81                       | 81         | 1,978         |
| <b>Education</b>                    |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| No schooling                        | 122                     | 81                       | 82         | 15,013        | 131                     | 80                       | 81         | 15,253        | 127                     | 80                       | 82         | 30,266        |
| Less than 5 years complete          | 123                     | 82                       | 82         | 3,976         | 132                     | 81                       | 79         | 3,497         | 128                     | 81                       | 81         | 7,473         |
| 5-9 years complete                  | 123                     | 82                       | 82         | 10,039        | 133                     | 81                       | 80         | 5,503         | 127                     | 81                       | 81         | 15,542        |
| 10 or more years complete           | 125                     | 83                       | 81         | 8,228         | 133                     | 81                       | 78         | 4,242         | 128                     | 82                       | 80         | 12,470        |
| <b>MPCE quintile</b>                |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Poorest                             | 122                     | 81                       | 81         | 7,101         | 132                     | 80                       | 81         | 5,833         | 127                     | 81                       | 81         | 12,934        |
| Poorer                              | 123                     | 81                       | 82         | 7,384         | 131                     | 80                       | 81         | 5,879         | 127                     | 81                       | 81         | 13,263        |
| Middle                              | 123                     | 82                       | 82         | 7,441         | 132                     | 81                       | 81         | 5,860         | 127                     | 81                       | 81         | 13,301        |
| Richer                              | 123                     | 82                       | 82         | 7,733         | 133                     | 80                       | 80         | 5,614         | 128                     | 81                       | 81         | 13,347        |
| Richest                             | 125                     | 82                       | 81         | 7,597         | 131                     | 81                       | 80         | 5,309         | 128                     | 82                       | 81         | 12,906        |
| <b>Total</b>                        | <b>123</b>              | <b>82</b>                | <b>82</b>  | <b>37,256</b> | <b>132</b>              | <b>80</b>                | <b>80</b>  | <b>28,495</b> | <b>127</b>              | <b>81</b>                | <b>81</b>  | <b>65,751</b> |

Note

\* Including spouse irrespective of age

**Table 9.2 Mean systolic and diastolic blood pressure (mmHg) and pulse rate among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*              |                          |            |               | Age ≥ 60                |                          |            |               | Total                   |                          |            |               |
|---------------------------|-------------------------|--------------------------|------------|---------------|-------------------------|--------------------------|------------|---------------|-------------------------|--------------------------|------------|---------------|
|                           | Systolic blood pressure | Diastolic blood pressure | Pulse rate | Number        | Systolic blood pressure | Diastolic blood pressure | Pulse rate | Number        | Systolic blood pressure | Diastolic blood pressure | Pulse rate | Number        |
| <b>India</b>              | <b>123</b>              | <b>82</b>                | <b>82</b>  | <b>37,256</b> | <b>132</b>              | <b>80</b>                | <b>80</b>  | <b>28,495</b> | <b>127</b>              | <b>81</b>                | <b>81</b>  | <b>65,751</b> |
| <b>North</b>              |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Chandigarh                | 126                     | 83                       | 82         | 536           | 134                     | 81                       | 79         | 332           | 129                     | 82                       | 81         | 868           |
| Delhi                     | 126                     | 82                       | 83         | 802           | 134                     | 82                       | 83         | 481           | 129                     | 82                       | 83         | 1,283         |
| Haryana                   | 123                     | 81                       | 82         | 945           | 129                     | 79                       | 79         | 766           | 126                     | 80                       | 80         | 1,711         |
| Himachal Pradesh          | 126                     | 85                       | 79         | 733           | 137                     | 83                       | 78         | 579           | 131                     | 84                       | 79         | 1,312         |
| Jammu & Kashmir           | 125                     | 81                       | 77         | 768           | 134                     | 82                       | 76         | 627           | 129                     | 82                       | 77         | 1,395         |
| Punjab                    | 129                     | 85                       | 83         | 1,046         | 138                     | 83                       | 80         | 925           | 134                     | 84                       | 81         | 1,971         |
| Rajasthan                 | 121                     | 80                       | 81         | 1,098         | 129                     | 80                       | 80         | 989           | 125                     | 80                       | 81         | 2,087         |
| Uttarakhand               | 125                     | 84                       | 82         | 669           | 134                     | 84                       | 80         | 606           | 130                     | 84                       | 81         | 1,275         |
| <b>Central</b>            |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Chhattisgarh              | 126                     | 84                       | 80         | 1,217         | 134                     | 83                       | 79         | 730           | 129                     | 84                       | 80         | 1,947         |
| Madhya Pradesh            | 121                     | 81                       | 81         | 1,458         | 128                     | 79                       | 80         | 1,172         | 125                     | 80                       | 80         | 2,630         |
| Uttar Pradesh             | 119                     | 79                       | 83         | 2,217         | 128                     | 77                       | 81         | 1,965         | 123                     | 78                       | 82         | 4,182         |
| <b>East</b>               |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Bihar                     | 121                     | 79                       | 83         | 1,667         | 130                     | 79                       | 81         | 1,743         | 126                     | 79                       | 82         | 3,410         |
| Jharkhand                 | 123                     | 81                       | 82         | 1,217         | 135                     | 81                       | 81         | 1,096         | 129                     | 81                       | 82         | 2,313         |
| Odisha                    | 121                     | 81                       | 81         | 1,561         | 130                     | 80                       | 80         | 1,099         | 125                     | 80                       | 81         | 2,660         |
| West Bengal               | 124                     | 81                       | 82         | 2,152         | 135                     | 80                       | 82         | 1,381         | 128                     | 81                       | 82         | 3,533         |
| <b>Northeast</b>          |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Arunachal Pradesh         | 125                     | 84                       | 78         | 852           | 133                     | 85                       | 76         | 294           | 127                     | 84                       | 77         | 1,146         |
| Assam                     | 126                     | 81                       | 82         | 1,401         | 137                     | 82                       | 81         | 729           | 130                     | 81                       | 82         | 2,130         |
| Manipur                   | 125                     | 85                       | 78         | 662           | 131                     | 83                       | 76         | 527           | 127                     | 84                       | 77         | 1,189         |
| Meghalaya                 | 127                     | 85                       | 77         | 507           | 139                     | 84                       | 77         | 384           | 132                     | 84                       | 77         | 891           |
| Mizoram                   | 119                     | 82                       | 78         | 659           | 127                     | 81                       | 76         | 470           | 122                     | 82                       | 77         | 1,129         |
| Nagaland                  | 131                     | 86                       | 75         | 662           | 141                     | 87                       | 74         | 564           | 136                     | 86                       | 75         | 1,226         |
| Tripura                   | 122                     | 82                       | 81         | 676           | 131                     | 80                       | 79         | 424           | 125                     | 81                       | 80         | 1,100         |
| <b>West</b>               |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Dadra & Nagar Haveli      | 125                     | 83                       | 82         | 594           | 133                     | 81                       | 81         | 407           | 128                     | 83                       | 82         | 1,001         |
| Daman & Diu               | 125                     | 82                       | 80         | 534           | 136                     | 79                       | 76         | 401           | 130                     | 81                       | 78         | 935           |
| Goa                       | 124                     | 81                       | 79         | 690           | 136                     | 80                       | 77         | 568           | 130                     | 81                       | 78         | 1,258         |
| Gujarat                   | 125                     | 83                       | 84         | 1,199         | 134                     | 82                       | 81         | 886           | 129                     | 82                       | 83         | 2,085         |
| Maharashtra               | 124                     | 84                       | 82         | 1,854         | 132                     | 82                       | 80         | 1,531         | 128                     | 83                       | 81         | 3,385         |
| <b>South</b>              |                         |                          |            |               |                         |                          |            |               |                         |                          |            |               |
| Andaman & Nicobar Islands | 131                     | 86                       | 84         | 666           | 141                     | 84                       | 79         | 475           | 135                     | 85                       | 82         | 1,141         |
| Andhra Pradesh            | 125                     | 84                       | 83         | 1,306         | 136                     | 83                       | 81         | 932           | 130                     | 83                       | 82         | 2,238         |
| Karnataka                 | 123                     | 82                       | 80         | 1,299         | 132                     | 81                       | 79         | 922           | 127                     | 82                       | 79         | 2,221         |
| Kerala                    | 128                     | 83                       | 77         | 1,191         | 139                     | 82                       | 76         | 1,097         | 134                     | 82                       | 76         | 2,288         |
| Lakshadweep               | 134                     | 84                       | 79         | 611           | 144                     | 83                       | 77         | 475           | 139                     | 84                       | 78         | 1,086         |
| Puducherry                | 122                     | 81                       | 81         | 726           | 131                     | 79                       | 80         | 572           | 126                     | 80                       | 81         | 1,298         |
| Tamil Nadu                | 124                     | 82                       | 82         | 1,890         | 133                     | 80                       | 81         | 1,409         | 128                     | 81                       | 81         | 3,299         |
| Telangana                 | 122                     | 83                       | 82         | 1,191         | 132                     | 81                       | 80         | 937           | 127                     | 82                       | 81         | 2,128         |

Note

\* Including spouse irrespective of age

### 9.1.1 Prevalence of high blood pressure

High blood pressure, also termed hypertension, is defined as systolic blood pressure  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg. In the LASI, the prevalence of hypertension is assessed using the standard classification protocol recommended by the World Health Organisation (WHO).

The WHO classification system for blood pressure is:

- Normal: systolic  $<120$  mmHg and diastolic  $<80$  mmHg.
- Pre-hypertension: systolic 120-139 mmHg and/or diastolic 80-89 mmHg.
- Hypertension/high blood pressure: systolic  $\geq 140$  mmHg and/or diastolic  $\geq 90$  mmHg.

A more detailed classification of hypertension provided by the European Society of Hypertension and the European Society of Cardiology is as follows (Williams et al., 2018):

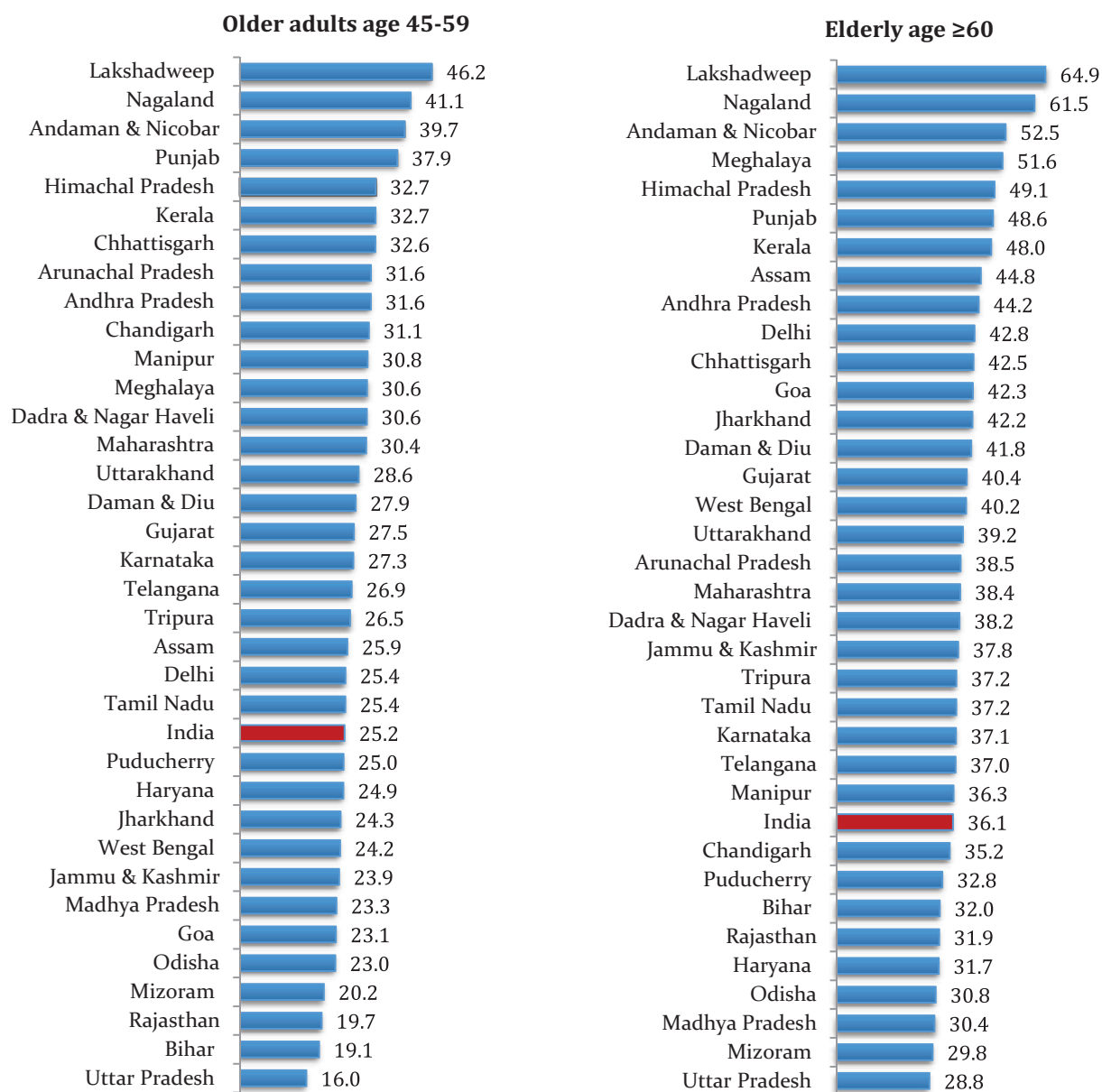
- Grade 1 (mild) hypertension: systolic 140-159 mmHg and/or diastolic 90-99 mmHg.
- Grade 2 (moderate) hypertension: systolic 160-179 mmHg and/or diastolic 100-109 mmHg.
- Grade 3 (severe/ critical) hypertension: systolic  $\geq 180$  mmHg and/or diastolic  $\geq 110$  mmHg.

The percent distribution of older adults by classification of blood pressure (normal, pre-hypertension, and high blood pressure) and background characteristics is presented in Table 9.3. Overall, 30% of older adults age 45 and above in India have normal blood pressure, 40% have pre-hypertension, and the remaining 30% have high blood pressure. Only a quarter of elderly age 60 and above (25%) have normal blood pressure compared to 35% among older adults age 45-59. An equal proportion (40%) of older adults age 45-59 and elderly age 60 and above have pre-hypertension. Among elderly age 60 and above, the prevalence of pre-hypertension is slightly higher among men (40%) than among women (38%) and among those residing in urban areas (42%) than among those residing in rural areas (38%).

High blood pressure is more prevalent among elderly age 60 and above (36%) than among older adults age 45-59 (25%), and the prevalence of high blood pressure among older adults age 45 and above is higher among those residing in urban areas (34%) than among those residing in rural areas (28%). The prevalence of high blood pressure is higher among elderly women (38%) than among elderly men age 60 and above (34%), whereas high blood pressure is more prevalent among older adult men age 45-59 (29%) than among older adult women (23%). Among elderly age 60 and above, high blood pressure is more prevalent among the widowed (40%) than among the currently married (34%). The prevalence of high blood pressure among elderly age 60 and above does not show a consistent pattern by either education or MPCE quintiles; however, among older adults age 45-59, the prevalence of high blood pressure increases with education and MPCE quintile.

Cross-state variations in the prevalence of pre-hypertension among older adults age 45 and above are less pronounced (Table 9.4), ranging from the highest 45% in Jammu & Kashmir to the lowest 32% in Lakshadweep. Among elderly age 60 and above, the prevalence of pre-hypertension is comparatively higher in Chandigarh (46%) than in other states/UTs, followed by Jammu & Kashmir (43%), Karnataka (43%), and Puducherry (43%) and Uttarakhand (43%). The prevalence of high blood pressure among older adults age 45 and above varies from the highest 55% in Lakshadweep to the lowest 22% in Uttar Pradesh. More than half of elderly age 60 and above have high blood pressure in the states/UTs of Lakshadweep (65%), Nagaland (62%), Andaman & Nicobar (53%), and Meghalaya (52%).

**Figure 9.3 Prevalence (%) of high blood pressure (measured) among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



Notes: High blood pressure is defined as systolic blood pressure of  $\geq 140$  mmHg and/or diastolic blood pressure of  $\geq 90$  mmHg.

\* Including spouse irrespective of age.

**Table 9.3 Percent distribution of older adults according to normal blood pressure, pre-hypertension and high blood pressure based on measured blood pressure (mmHg) by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics             | Age 45-59*          |                                |                      |        |                     | Age ≥ 60                       |                      |        |                     |                                | Total                |        |
|----------------------------------------|---------------------|--------------------------------|----------------------|--------|---------------------|--------------------------------|----------------------|--------|---------------------|--------------------------------|----------------------|--------|
|                                        | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number |
| <b>Place of residence</b>              |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Rural                                  | 38.0                | 39.2                           | 22.8                 | 23,860 | 26.8                | 38.4                           | 34.8                 | 18,966 | 32.8                | 38.8                           | 28.4                 | 42,826 |
| Urban                                  | 28.7                | 40.9                           | 30.4                 | 13,396 | 19.0                | 41.5                           | 39.6                 | 9,529  | 24.6                | 41.2                           | 34.3                 | 22,925 |
| <b>Sex</b>                             |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Male                                   | 30.0                | 40.8                           | 29.2                 | 13,973 | 25.9                | 40.2                           | 33.9                 | 13,709 | 27.9                | 40.5                           | 31.7                 | 27,682 |
| Female                                 | 38.0                | 39.1                           | 22.8                 | 23,283 | 23.4                | 38.4                           | 38.1                 | 14,786 | 32.0                | 38.8                           | 29.2                 | 38,069 |
| <b>Marital status</b>                  |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Currently married                      | 35.6                | 39.6                           | 24.8                 | 32,438 | 26.3                | 40.1                           | 33.6                 | 18,172 | 32.1                | 39.8                           | 28.1                 | 50,610 |
| Widowed                                | 27.5                | 43.0                           | 29.5                 | 3,571  | 21.6                | 38.1                           | 40.3                 | 9,592  | 23.0                | 39.2                           | 37.8                 | 13,163 |
| Divorced/Separated/Deserted/<br>Others | 42.4                | 34.4                           | 23.2                 | 1,247  | 26.0                | 34.5                           | 39.5                 | 731    | 36.2                | 34.4                           | 29.3                 | 1,978  |
| <b>Living arrangement</b>              |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Living alone                           | 24.8                | 42.0                           | 33.2                 | 643    | 17.6                | 42.8                           | 39.6                 | 1,479  | 19.2                | 42.6                           | 38.1                 | 2,122  |
| Living with spouse and/or<br>others    | 35.7                | 37.7                           | 26.6                 | 3,945  | 25.2                | 40.8                           | 33.9                 | 5,557  | 29.5                | 39.5                           | 30.9                 | 9,502  |
| Living with spouse and children        | 35.7                | 39.8                           | 24.5                 | 27,901 | 26.9                | 39.7                           | 33.4                 | 12,406 | 32.9                | 39.8                           | 27.4                 | 40,307 |
| Living with children and others        | 28.8                | 43.7                           | 27.5                 | 3,766  | 22.1                | 37.7                           | 40.2                 | 7,583  | 24.0                | 39.4                           | 36.6                 | 11,349 |
| Living with others only                | 42.2                | 32.2                           | 25.7                 | 1,001  | 24.6                | 34.7                           | 40.7                 | 1,470  | 31.3                | 33.7                           | 35.0                 | 2,471  |
| <b>Religion</b>                        |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Hindu                                  | 35.3                | 40.0                           | 24.8                 | 27,343 | 25.2                | 39.5                           | 35.3                 | 20,853 | 30.6                | 39.7                           | 29.6                 | 48,196 |
| Muslim                                 | 34.0                | 39.1                           | 26.9                 | 4,493  | 22.7                | 39.0                           | 38.2                 | 3,391  | 29.0                | 39.0                           | 32.0                 | 7,884  |
| Christian                              | 39.7                | 38.2                           | 22.1                 | 3,739  | 20.1                | 36.5                           | 43.4                 | 2,862  | 30.9                | 37.4                           | 31.7                 | 6,601  |
| Others                                 | 29.0                | 38.2                           | 32.7                 | 1,681  | 20.2                | 36.5                           | 43.3                 | 1,389  | 24.8                | 37.4                           | 37.8                 | 3,070  |
| <b>Caste/tribe</b>                     |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Scheduled tribe                        | 32.0                | 42.7                           | 25.3                 | 6,821  | 25.2                | 37.6                           | 37.2                 | 4,697  | 29.0                | 40.5                           | 30.4                 | 11,518 |
| Scheduled caste                        | 37.9                | 39.2                           | 22.9                 | 6,388  | 27.5                | 37.2                           | 35.4                 | 4,654  | 33.3                | 38.3                           | 28.5                 | 11,042 |
| Other backward class                   | 35.6                | 38.6                           | 25.9                 | 13,977 | 24.9                | 39.8                           | 35.3                 | 10,849 | 30.7                | 39.1                           | 30.2                 | 24,826 |
| None of the above                      | 32.9                | 41.2                           | 25.8                 | 10,070 | 21.9                | 40.3                           | 37.8                 | 8,295  | 27.7                | 40.8                           | 31.5                 | 18,365 |
| <b>Education</b>                       |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| No schooling                           | 37.2                | 39.7                           | 23.1                 | 15,013 | 27.3                | 37.5                           | 35.2                 | 15,253 | 32.0                | 38.6                           | 29.4                 | 30,266 |
| Less than 5 years complete             | 35.0                | 40.3                           | 24.7                 | 3,976  | 21.8                | 41.7                           | 36.5                 | 3,497  | 28.6                | 41.0                           | 30.4                 | 7,473  |
| 5-9 years complete                     | 34.8                | 39.7                           | 25.5                 | 10,039 | 21.7                | 40.1                           | 38.3                 | 5,503  | 29.8                | 39.8                           | 30.4                 | 15,542 |
| 10 or more years complete              | 31.0                | 39.6                           | 29.4                 | 8,228  | 19.7                | 43.3                           | 37.0                 | 4,242  | 27.0                | 40.9                           | 32.1                 | 12,470 |

continued

continued

| Background characteristics               | Age 45-59*          |                                 |                      |        | Age ≥ 60            |                                |                      |        | Total               |                                |                      |        |
|------------------------------------------|---------------------|---------------------------------|----------------------|--------|---------------------|--------------------------------|----------------------|--------|---------------------|--------------------------------|----------------------|--------|
|                                          | Normal <sup>1</sup> | Pre- hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number |
| Work status                              |                     |                                 |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Currently working                        | 34.5                | 39.8                            | 25.7                 | 21,602 | 28.2                | 39.4                           | 32.4                 | 8,540  | 32.6                | 39.7                           | 27.8                 | 30,142 |
| Worked in past but currently not working | 33.0                | 40.5                            | 26.5                 | 4,188  | 23.4                | 38.6                           | 38.1                 | 12,057 | 25.7                | 39.0                           | 35.3                 | 16,245 |
| Never worked                             | 36.9                | 39.4                            | 23.7                 | 11,466 | 22.3                | 40.2                           | 37.5                 | 7,898  | 30.5                | 39.7                           | 29.7                 | 19,364 |
| MPCE quintile                            |                     |                                 |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Poorest                                  | 35.3                | 42.0                            | 22.7                 | 7,101  | 25.6                | 37.6                           | 36.8                 | 5,833  | 30.7                | 39.9                           | 29.4                 | 12,934 |
| Poorer                                   | 35.7                | 39.8                            | 24.5                 | 7,384  | 26.4                | 38.2                           | 35.4                 | 5,879  | 31.3                | 39.1                           | 29.6                 | 13,263 |
| Middle                                   | 35.0                | 39.3                            | 25.8                 | 7,441  | 23.7                | 40.0                           | 36.3                 | 5,860  | 29.7                | 39.6                           | 30.7                 | 13,301 |
| Richer                                   | 36.6                | 38.4                            | 25.0                 | 7,733  | 23.5                | 39.9                           | 36.5                 | 5,614  | 30.7                | 39.1                           | 30.2                 | 13,347 |
| Richest                                  | 32.5                | 39.2                            | 28.3                 | 7,597  | 23.4                | 41.0                           | 35.7                 | 5,309  | 28.6                | 40.0                           | 31.4                 | 12,906 |
| Total                                    | 35.0                | 39.7                            | 25.2                 | 37,256 | 24.6                | 39.3                           | 36.1                 | 28,495 | 30.3                | 39.5                           | 30.2                 | 65,751 |

Note

\* Including spouse irrespective of age

<sup>1</sup>Normal blood pressure refers to systolic blood pressure of < 120 mmHg and diastolic blood pressure of < 80 mmHg.

<sup>2</sup>Pre-hypertension refers to systolic blood pressure of 120-139 mmHg and/or diastolic blood pressure of 80-89 mmHg.

<sup>3</sup>High blood pressure (BP) refers to systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg.

**Table 9.4 Percent distribution of older adults according to normal blood pressure, pre-hypertension and high blood pressure based on measured blood pressure (mmHg), states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*          |                                |                      |               | Age ≥ 60            |                                |                      |               | Total               |                                |                      |               |
|-----------------------|---------------------|--------------------------------|----------------------|---------------|---------------------|--------------------------------|----------------------|---------------|---------------------|--------------------------------|----------------------|---------------|
|                       | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number        | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number        | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High BP <sup>3</sup> | Number        |
| <b>India</b>          | <b>35.0</b>         | <b>39.7</b>                    | <b>25.2</b>          | <b>37,256</b> | <b>24.6</b>         | <b>39.3</b>                    | <b>36.1</b>          | <b>28,495</b> | <b>30.3</b>         | <b>39.5</b>                    | <b>30.2</b>          | <b>65,751</b> |
| <b>North</b>          |                     |                                |                      |               |                     |                                |                      |               |                     |                                |                      |               |
| Chandigarh            | 29.2                | 39.7                           | 31.1                 | 536           | 19.1                | 45.7                           | 35.2                 | 332           | 25.2                | 42.1                           | 32.7                 | 868           |
| Delhi                 | 26.8                | 47.7                           | 25.4                 | 802           | 20.0                | 37.2                           | 42.8                 | 481           | 24.2                | 43.7                           | 32.0                 | 1,283         |
| Haryana               | 35.1                | 40.0                           | 24.9                 | 945           | 27.6                | 40.7                           | 31.7                 | 766           | 31.5                | 40.3                           | 28.2                 | 1,711         |
| Himachal Pradesh      | 25.2                | 42.1                           | 32.7                 | 733           | 14.9                | 36.0                           | 49.1                 | 579           | 20.4                | 39.2                           | 40.4                 | 1,312         |
| Jammu & Kashmir       | 29.5                | 46.6                           | 23.9                 | 768           | 18.9                | 43.3                           | 37.8                 | 627           | 24.3                | 45.0                           | 30.7                 | 1,395         |
| Punjab                | 27.2                | 34.9                           | 37.9                 | 1,046         | 17.1                | 34.2                           | 48.6                 | 925           | 22.4                | 34.6                           | 43.0                 | 1,971         |
| Rajasthan             | 36.7                | 43.6                           | 19.7                 | 1,098         | 28.6                | 39.5                           | 31.9                 | 989           | 32.7                | 41.6                           | 25.7                 | 2,087         |
| Uttarakhand           | 25.7                | 45.7                           | 28.6                 | 669           | 18.2                | 42.6                           | 39.2                 | 606           | 22.0                | 44.1                           | 33.9                 | 1,275         |
| <b>Central</b>        |                     |                                |                      |               |                     |                                |                      |               |                     |                                |                      |               |
| Chhattisgarh          | 28.0                | 39.4                           | 32.6                 | 1,217         | 24.4                | 33.1                           | 42.5                 | 730           | 26.6                | 37.0                           | 36.4                 | 1,947         |
| Madhya Pradesh        | 40.4                | 36.4                           | 23.3                 | 1,458         | 32.2                | 37.4                           | 30.4                 | 1,172         | 36.6                | 36.8                           | 26.6                 | 2,630         |
| Uttar Pradesh         | 47.0                | 37.0                           | 16.0                 | 2,217         | 34.1                | 37.1                           | 28.8                 | 1,965         | 40.6                | 37.1                           | 22.3                 | 4,182         |
| <b>East</b>           |                     |                                |                      |               |                     |                                |                      |               |                     |                                |                      |               |
| Bihar                 | 39.6                | 41.3                           | 19.1                 | 1,667         | 25.8                | 42.2                           | 32.0                 | 1,743         | 32.2                | 41.8                           | 26.0                 | 3,410         |
| Jharkhand             | 36.6                | 39.2                           | 24.3                 | 1,217         | 22.9                | 34.9                           | 42.2                 | 1,096         | 29.9                | 37.1                           | 32.9                 | 2,313         |
| Odisha                | 39.7                | 37.3                           | 23.0                 | 1,561         | 27.6                | 41.6                           | 30.8                 | 1,099         | 34.5                | 39.2                           | 26.3                 | 2,660         |
| West Bengal           | 33.5                | 42.3                           | 24.2                 | 2,152         | 20.7                | 39.1                           | 40.2                 | 1,381         | 28.4                | 41.0                           | 30.6                 | 3,533         |
| <b>Northeast</b>      |                     |                                |                      |               |                     |                                |                      |               |                     |                                |                      |               |
| Arunachal Pradesh     | 30.2                | 38.2                           | 31.6                 | 852           | 19.7                | 41.7                           | 38.5                 | 294           | 27.7                | 39.1                           | 33.3                 | 1,146         |
| Assam                 | 33.5                | 40.6                           | 25.9                 | 1,401         | 21.1                | 34.1                           | 44.8                 | 729           | 29.1                | 38.3                           | 32.6                 | 2,130         |
| Manipur               | 28.6                | 40.6                           | 30.8                 | 662           | 25.3                | 38.4                           | 36.3                 | 527           | 27.0                | 39.6                           | 33.4                 | 1,189         |
| Meghalaya             | 27.0                | 42.3                           | 30.6                 | 507           | 18.1                | 30.4                           | 51.6                 | 384           | 23.2                | 37.2                           | 39.5                 | 891           |
| Mizoram               | 38.7                | 41.1                           | 20.2                 | 659           | 29.3                | 40.9                           | 29.8                 | 470           | 34.6                | 41.0                           | 24.4                 | 1,129         |
| Nagaland              | 16.1                | 42.8                           | 41.1                 | 662           | 9.4                 | 29.1                           | 61.5                 | 564           | 12.8                | 36.1                           | 51.1                 | 1,226         |
| Tripura               | 38.7                | 34.7                           | 26.5                 | 676           | 25.4                | 37.4                           | 37.2                 | 424           | 33.4                | 35.8                           | 30.8                 | 1,100         |
| <b>West</b>           |                     |                                |                      |               |                     |                                |                      |               |                     |                                |                      |               |
| Dadra & Nagar Haveli  | 33.4                | 36.0                           | 30.6                 | 594           | 23.6                | 38.3                           | 38.2                 | 407           | 29.6                | 36.9                           | 33.5                 | 1,001         |
| Daman & Diu           | 33.0                | 39.1                           | 27.9                 | 534           | 22.8                | 35.4                           | 41.8                 | 401           | 28.3                | 37.4                           | 34.3                 | 935           |
| Goa                   | 31.5                | 45.4                           | 23.1                 | 690           | 19.4                | 38.2                           | 42.3                 | 568           | 25.9                | 42.1                           | 32.0                 | 1,258         |
| Gujarat               | 31.6                | 40.9                           | 27.5                 | 1,199         | 20.6                | 38.9                           | 40.4                 | 886           | 26.7                | 40.0                           | 33.3                 | 2,085         |
| Maharashtra           | 27.1                | 42.5                           | 30.4                 | 1,854         | 23.2                | 38.5                           | 38.4                 | 1,531         | 25.1                | 40.5                           | 34.4                 | 3,385         |

continued



continued

| State/Union Territory     | Age 45-59*          |                                |                      |        | Age ≥ 60            |                                |                      |        | Total               |                                |                      |        |
|---------------------------|---------------------|--------------------------------|----------------------|--------|---------------------|--------------------------------|----------------------|--------|---------------------|--------------------------------|----------------------|--------|
|                           | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High Bp <sup>3</sup> | Number | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High Bp <sup>3</sup> | Number | Normal <sup>1</sup> | Pre-hyper tension <sup>2</sup> | High Bp <sup>3</sup> | Number |
| South                     |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |
| Andaman & Nicobar Islands | 24.0                | 36.3                           | 39.7                 | 666    | 10.0                | 37.5                           | 52.5                 | 475    | 18.2                | 36.8                           | 45.0                 | 1,141  |
| Andhra Pradesh            | 29.0                | 39.5                           | 31.6                 | 1,306  | 17.4                | 38.4                           | 44.2                 | 932    | 24.1                | 39.0                           | 36.9                 | 2,238  |
| Karnataka                 | 36.8                | 35.8                           | 27.3                 | 1,299  | 19.6                | 43.3                           | 37.1                 | 922    | 29.8                | 38.9                           | 31.3                 | 2,221  |
| Kerala                    | 23.6                | 43.7                           | 32.7                 | 1,191  | 13.6                | 38.3                           | 48.0                 | 1,097  | 18.5                | 40.9                           | 40.5                 | 2,288  |
| Lakshadweep               | 16.4                | 37.4                           | 46.2                 | 611    | 8.9                 | 26.2                           | 64.9                 | 475    | 12.8                | 32.1                           | 55.1                 | 1,086  |
| Puducherry                | 38.9                | 36.2                           | 25.0                 | 726    | 24.0                | 43.2                           | 32.8                 | 572    | 32.0                | 39.4                           | 28.6                 | 1,298  |
| Tamil Nadu                | 34.9                | 39.7                           | 25.4                 | 1,890  | 21.8                | 41.0                           | 37.2                 | 1,409  | 29.0                | 40.3                           | 30.7                 | 3,299  |
| Telangana                 | 33.9                | 39.1                           | 26.9                 | 1,191  | 26.4                | 36.6                           | 37.0                 | 937    | 30.5                | 38.0                           | 31.6                 | 2,128  |
| Note                      |                     |                                |                      |        |                     |                                |                      |        |                     |                                |                      |        |

Note

\* Including spouse irrespective of age.

<sup>1</sup>Normal blood pressure refers to systolic blood pressure of < 120 mmHg and diastolic blood pressure of < 80 mmHg.

<sup>2</sup>Pre-hypertension refers to systolic blood pressure of 120-139 mmHg and/or diastolic blood pressure of 80-89 mmHg.

<sup>3</sup>High blood pressure (BP) refers to systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg.

The prevalence of high blood pressure according to the three categories of hypertension (mild, moderate, and severe) is presented by background characteristics in Table 9.5. Overall, 22%, 8%, and 1% of older adults age 45 and above in India have mild, moderate, and severe hypertension, respectively. Among elderly age 60 and above, 25%, 10%, and 1% have mild, moderate, and severe hypertension, respectively. Although the prevalence of mild and moderate hypertension among elderly age 60 and above is higher than that among older adults age 45-59, the prevalence of severe hypertension does not markedly vary by age. Among elderly age 60 and above, the prevalence of mild hypertension is higher among women (27%) than among men (23%), whereas the prevalence of severe hypertension is higher among men (1.2%) than among women (0.9%). The prevalence of severe hypertension among elderly age 60 and above is higher among those residing in urban areas (1.2%) than among those residing in rural areas (1.0%), those living with spouse and children (1.3%) than others, Christians (1.6%) than other religions, Scheduled tribe (1.5%) than other caste, and those with <5 years of schooling (1.6%) than those with 10 or more years of schooling.

Cross-state variations in the prevalence of high blood pressure (mild, moderate, and severe) are presented in Table 9.6. Lakshadweep has the highest percentage of older adults age 45 and above with mild (36%) and moderate hypertension (18%). More than 2% of older adults age 45 and above have severe hypertension in the states/UTs of Meghalaya (4.2%), Manipur (2.8%), Karnataka (2.5%), and Andaman & Nicobar (2.1%). Among elderly age 60 and above, the prevalence of severe hypertension is higher in the states of Meghalaya (6%), Kerala (3%) and Assam (3%).

**Table 9.5 Prevalence of high blood pressure (measured) based on levels of hypertension among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics             | Age 45-59*                     |                                    |                                  |        | Age ≥ 60                       |                                    |                                  |        | Total                          |                                    |                                  |        |
|----------------------------------------|--------------------------------|------------------------------------|----------------------------------|--------|--------------------------------|------------------------------------|----------------------------------|--------|--------------------------------|------------------------------------|----------------------------------|--------|
|                                        | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number |
| <b>Place of residence</b>              |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Rural                                  | 17.1                           | 4.9                                | 0.8                              | 23,860 | 23.9                           | 9.9                                | 1.0                              | 18,966 | 20.3                           | 7.3                                | 0.9                              | 42,826 |
| Urban                                  | 20.7                           | 7.7                                | 2.0                              | 13,396 | 28.9                           | 9.5                                | 1.2                              | 9,529  | 24.2                           | 8.4                                | 1.7                              | 22,925 |
| <b>Sex</b>                             |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Male                                   | 20.8                           | 6.5                                | 2.0                              | 13,973 | 23.4                           | 9.3                                | 1.2                              | 13,709 | 22.1                           | 8.0                                | 1.6                              | 27,682 |
| Female                                 | 16.7                           | 5.4                                | 0.7                              | 23,283 | 27.0                           | 10.2                               | 0.9                              | 14,786 | 21.0                           | 7.4                                | 0.8                              | 38,069 |
| <b>Marital status</b>                  |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Currently married                      | 18.1                           | 5.6                                | 1.1                              | 32,438 | 23.3                           | 9.2                                | 1.1                              | 18,172 | 20.0                           | 7.0                                | 1.1                              | 50,610 |
| Widowed                                | 20.9                           | 7.4                                | 1.2                              | 3,571  | 28.7                           | 10.7                               | 0.9                              | 9,592  | 26.8                           | 9.9                                | 1.0                              | 13,163 |
| Divorced/Separated/<br>Deserted/Others | 15.3                           | 6.0                                | 1.9                              | 1,247  | 27.8                           | 10.8                               | 0.9                              | 731    | 20.0                           | 7.8                                | 1.5                              | 1,978  |
| <b>Living arrangement</b>              |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Living alone                           | 23.9                           | 7.6                                | 1.6                              | 643    | 26.6                           | 12.2                               | 0.8                              | 1,479  | 26.0                           | 11.2                               | 1.0                              | 2,122  |
| Living with spouse and/or<br>others    | 20.2                           | 5.6                                | 0.8                              | 3,945  | 23.5                           | 9.7                                | 0.7                              | 5,557  | 22.1                           | 8.0                                | 0.8                              | 9,502  |
| Living with spouse and<br>children     | 17.7                           | 5.7                                | 1.2                              | 27,901 | 23.2                           | 8.9                                | 1.3                              | 12,406 | 19.4                           | 6.7                                | 1.2                              | 40,307 |
| Living with children and<br>others     | 19.5                           | 6.8                                | 1.2                              | 3,766  | 28.9                           | 10.4                               | 1.0                              | 7,583  | 26.2                           | 9.4                                | 1.0                              | 11,349 |
| Living with others only                | 18.0                           | 6.4                                | 1.2                              | 1,001  | 29.1                           | 10.8                               | 0.8                              | 1,470  | 24.8                           | 9.1                                | 1.0                              | 2,471  |
| <b>Religion</b>                        |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Hindu                                  | 17.9                           | 5.7                                | 1.2                              | 27,343 | 24.7                           | 9.6                                | 1.0                              | 20,853 | 21.0                           | 7.5                                | 1.1                              | 48,196 |
| Muslim                                 | 20.8                           | 5.4                                | 0.7                              | 4,493  | 28.0                           | 8.9                                | 1.4                              | 3,391  | 24.0                           | 6.9                                | 1.0                              | 7,884  |
| Christian                              | 15.2                           | 6.0                                | 1.0                              | 3,739  | 26.5                           | 15.3                               | 1.6                              | 2,862  | 20.2                           | 10.2                               | 1.3                              | 6,601  |
| Others                                 | 21.4                           | 10.4                               | 0.9                              | 1,681  | 29.5                           | 12.8                               | 1.0                              | 1,389  | 25.3                           | 11.6                               | 1.0                              | 3,070  |
| <b>Caste/tribe</b>                     |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Scheduled tribe                        | 18.3                           | 6.1                                | 0.9                              | 6,821  | 25.0                           | 10.7                               | 1.5                              | 4,697  | 21.2                           | 8.1                                | 1.2                              | 11,518 |
| Scheduled caste                        | 17.4                           | 4.5                                | 1.0                              | 6,388  | 24.9                           | 9.7                                | 0.8                              | 4,654  | 20.7                           | 6.8                                | 0.9                              | 11,042 |
| Other backward class                   | 18.1                           | 6.2                                | 1.5                              | 13,977 | 24.7                           | 9.4                                | 1.2                              | 10,849 | 21.1                           | 7.7                                | 1.3                              | 24,826 |
| None of the above                      | 19.1                           | 6.0                                | 0.8                              | 10,070 | 26.7                           | 10.2                               | 0.9                              | 8,295  | 22.7                           | 8.0                                | 0.9                              | 18,365 |
| <b>Education</b>                       |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| No schooling                           | 17.0                           | 5.4                                | 0.7                              | 15,013 | 24.2                           | 9.9                                | 1.1                              | 15,253 | 20.7                           | 7.7                                | 0.9                              | 30,266 |
| Less than 5 years complete             | 18.8                           | 5.1                                | 0.8                              | 3,976  | 25.7                           | 9.2                                | 1.6                              | 3,497  | 22.2                           | 7.1                                | 1.2                              | 7,473  |
| 5-9 years complete                     | 19.1                           | 5.5                                | 0.9                              | 10,039 | 27.6                           | 9.9                                | 0.7                              | 5,503  | 22.4                           | 7.2                                | 0.8                              | 15,542 |
| 10 or more years complete              | 19.4                           | 7.4                                | 2.6                              | 8,228  | 26.7                           | 9.5                                | 0.9                              | 4,242  | 22.0                           | 8.1                                | 2.0                              | 12,470 |

continued

continued

| Background characteristics               | Age 45-59*                     |                                    |                                  |               | Age ≥ 60                       |                                    |                                  |               | Total                          |                                    |                                  |               |
|------------------------------------------|--------------------------------|------------------------------------|----------------------------------|---------------|--------------------------------|------------------------------------|----------------------------------|---------------|--------------------------------|------------------------------------|----------------------------------|---------------|
|                                          | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number        | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number        | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number        |
| <b>Work status</b>                       |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Currently working                        | 18.4                           | 5.8                                | 1.4                              | 21,602        | 23.3                           | 7.9                                | 1.2                              | 8,540         | 19.9                           | 6.5                                | 1.4                              | 30,142        |
| Worked in past but currently not working | 17.4                           | 7.9                                | 1.2                              | 4,188         | 25.8                           | 11.1                               | 1.1                              | 12,057        | 23.8                           | 10.3                               | 1.1                              | 16,245        |
| Never worked                             | 18.1                           | 4.9                                | 0.6                              | 11,466        | 26.9                           | 9.8                                | 0.7                              | 7,898         | 22.0                           | 7.1                                | 0.7                              | 19,364        |
| <b>MPCE quintile</b>                     |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Poorest                                  | 17.1                           | 4.9                                | 0.7                              | 7,101         | 25.6                           | 10.3                               | 0.9                              | 5,833         | 21.2                           | 7.4                                | 0.8                              | 12,934        |
| Poorer                                   | 18.4                           | 5.2                                | 0.9                              | 7,384         | 24.5                           | 9.6                                | 1.4                              | 5,879         | 21.2                           | 7.3                                | 1.1                              | 13,263        |
| Middle                                   | 19.6                           | 5.5                                | 0.7                              | 7,441         | 25.5                           | 9.3                                | 1.5                              | 5,860         | 22.3                           | 7.3                                | 1.1                              | 13,301        |
| Richer                                   | 18.3                           | 5.9                                | 0.8                              | 7,733         | 25.7                           | 10.2                               | 0.7                              | 5,614         | 21.6                           | 7.8                                | 0.8                              | 13,347        |
| Richest                                  | 17.8                           | 7.6                                | 2.9                              | 7,597         | 25.3                           | 9.6                                | 0.7                              | 5,309         | 21.0                           | 8.5                                | 2.0                              | 12,906        |
| <b>Total</b>                             | <b>18.2</b>                    | <b>5.8</b>                         | <b>1.2</b>                       | <b>37,256</b> | <b>25.3</b>                    | <b>9.8</b>                         | <b>1.1</b>                       | <b>28,495</b> | <b>21.5</b>                    | <b>7.6</b>                         | <b>1.1</b>                       | <b>65,751</b> |

Note

\* Including spouse irrespective of age.

<sup>1</sup> Grade 1 (mild) hypertension- systolic blood pressure of 140-159 mmHg and/or diastolic blood pressure of 90-99 mmHg.

<sup>2</sup> Grade 2 (moderate) hypertension- systolic blood pressure of 160-179 mmHg and/or diastolic blood pressure of 100-109 mmHg.

<sup>3</sup> Grade 3 (critical) hypertension- systolic blood pressure of ≥180 mmHg and/or diastolic blood pressure of ≥110 mmHg.

**Table 9.6 Prevalence of high blood pressure (measured) based on levels of hypertension among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*                     |                                    |                                  |               | Age ≥ 60                       |                                    |                                  |               | Total                          |                                    |                                  |               |
|-----------------------|--------------------------------|------------------------------------|----------------------------------|---------------|--------------------------------|------------------------------------|----------------------------------|---------------|--------------------------------|------------------------------------|----------------------------------|---------------|
|                       | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number        | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number        | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number        |
| <b>India</b>          | <b>18.2</b>                    | <b>5.8</b>                         | <b>1.2</b>                       | <b>37,256</b> | <b>25.3</b>                    | <b>9.8</b>                         | <b>1.1</b>                       | <b>28,495</b> | <b>21.5</b>                    | <b>7.6</b>                         | <b>1.1</b>                       | <b>65,751</b> |
| <b>North</b>          |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Chandigarth           | 24.3                           | 6.8                                | -                                | 536           | 22.9                           | 11.9                               | [0.3]                            | 332           | 23.8                           | 8.8                                | [0.1]                            | 868           |
| Delhi                 | 19.7                           | 4.8                                | 0.9                              | 802           | 33.0                           | 9.2                                | 0.7                              | 481           | 24.8                           | 6.4                                | 0.8                              | 1,283         |
| Haryana               | 21.1                           | 3.6                                | [0.2]                            | 945           | 25.4                           | 6.2                                | [0.2]                            | 766           | 23.2                           | 4.8                                | [0.2]                            | 1,711         |
| Himachal Pradesh      | 23.8                           | 7.2                                | 1.6                              | 733           | 33.9                           | 14.0                               | [1.2]                            | 579           | 28.5                           | 10.4                               | 1.4                              | 1,312         |
| Jammu & Kashmir       | 19.5                           | 3.9                                | [0.5]                            | 768           | 26.1                           | 10.0                               | 1.7                              | 627           | 22.8                           | 6.9                                | 1.1                              | 1,395         |
| Punjab                | 23.8                           | 13.1                               | 1.0                              | 1,046         | 28.4                           | 18.5                               | 1.7                              | 925           | 26.0                           | 15.7                               | 1.4                              | 1,971         |
| Rajasthan             | 15.6                           | 4.1                                | [0.1]                            | 1,098         | 24.3                           | 7.3                                | [0.3]                            | 989           | 19.9                           | 5.7                                | [0.2]                            | 2,087         |
| Uttarakhand           | 20.5                           | 6.9                                | 1.2                              | 669           | 25.4                           | 12.2                               | 1.7                              | 606           | 22.9                           | 9.5                                | 1.5                              | 1,275         |
| <b>Central</b>        |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Chhattisgarh          | 23.6                           | 7.4                                | 1.6                              | 1,217         | 26.9                           | 13.2                               | 2.4                              | 730           | 24.9                           | 9.6                                | 1.9                              | 1,947         |
| Madhya Pradesh        | 17.4                           | 4.4                                | 1.5                              | 1,458         | 22.5                           | 7.4                                | 0.5                              | 1,172         | 19.8                           | 5.8                                | 1.1                              | 2,630         |
| Uttar Pradesh         | 12.2                           | 3.2                                | 0.6                              | 2,217         | 20.5                           | 7.7                                | 0.6                              | 1,965         | 16.3                           | 5.4                                | 0.6                              | 4,182         |
| <b>East</b>           |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Bihar                 | 15.4                           | 3.3                                | 0.4                              | 1,667         | 21.4                           | 9.2                                | 1.4                              | 1,743         | 18.6                           | 6.4                                | 1.0                              | 3,410         |
| Jharkhand             | 19.1                           | 4.7                                | 0.4                              | 1,217         | 28.7                           | 11.9                               | 1.6                              | 1,096         | 23.7                           | 8.2                                | 1.0                              | 2,313         |
| Odisha                | 17.2                           | 5.4                                | 0.4                              | 1,561         | 22.6                           | 8.1                                | [0.1]                            | 1,099         | 19.5                           | 6.5                                | 0.3                              | 2,660         |
| West Bengal           | 17.8                           | 5.7                                | 0.6                              | 2,152         | 29.0                           | 9.6                                | 1.6                              | 1,381         | 22.3                           | 7.3                                | 1.0                              | 3,533         |
| <b>Northeast</b>      |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Arunachal Pradesh     | 20.4                           | 9.1                                | 2.0                              | 852           | 24.1                           | 12.7                               | 1.7                              | 294           | 21.3                           | 10.0                               | 1.9                              | 1,146         |
| Assam                 | 18.6                           | 6.0                                | 1.3                              | 1,401         | 23.9                           | 18.0                               | 2.9                              | 729           | 20.5                           | 10.3                               | 1.9                              | 2,130         |
| Manipur               | 19.8                           | 7.5                                | 3.5                              | 662           | 23.3                           | 11.1                               | 1.9                              | 527           | 21.4                           | 9.2                                | 2.8                              | 1,189         |
| Meghalaya             | 19.8                           | 7.9                                | 2.9                              | 507           | 30.0                           | 15.6                               | 6.0                              | 384           | 24.2                           | 11.2                               | 4.2                              | 891           |
| Mizoram               | 13.8                           | 5.1                                | 1.4                              | 659           | 22.9                           | 5.9                                | [1.0]                            | 470           | 17.8                           | 5.5                                | 1.2                              | 1,129         |
| Nagaland              | 28.7                           | 11.9                               | [0.5]                            | 662           | 38.7                           | 21.3                               | 1.5                              | 564           | 33.6                           | 16.5                               | 1.0                              | 1,226         |
| Tripura               | 19.1                           | 6.4                                | 1.0                              | 676           | 25.1                           | 10.1                               | 2.1                              | 424           | 21.5                           | 7.9                                | 1.4                              | 1,100         |
| <b>West</b>           |                                |                                    |                                  |               |                                |                                    |                                  |               |                                |                                    |                                  |               |
| Dadra & Nagar Haveli  | 23.6                           | 6.7                                | [0.3]                            | 594           | 24.7                           | 11.1                               | 2.4                              | 407           | 24.0                           | 8.4                                | 1.1                              | 1,001         |
| Daman & Diu           | 20.4                           | 6.1                                | 1.4                              | 534           | 26.6                           | 13.6                               | 1.7                              | 401           | 23.3                           | 9.6                                | 1.5                              | 935           |
| Goa                   | 19.0                           | 3.3                                | [0.8]                            | 690           | 26.1                           | 14.4                               | 1.9                              | 568           | 22.3                           | 8.4                                | 1.3                              | 1,258         |
| Gujarat               | 19.9                           | 5.8                                | 1.7                              | 1,199         | 30.6                           | 9.1                                | 0.7                              | 886           | 24.7                           | 7.3                                | 1.3                              | 2,085         |
| Maharashtra           | 23.6                           | 6.5                                | 0.3                              | 1,854         | 27.7                           | 10.4                               | 0.3                              | 1,531         | 25.6                           | 8.4                                | 0.3                              | 3,385         |

continued

continued

| State/Union Territory     | Age 45-59*                     |                                    |                                  |        | Age ≥ 60                       |                                    |                                  |        | Total                          |                                    |                                  |        |
|---------------------------|--------------------------------|------------------------------------|----------------------------------|--------|--------------------------------|------------------------------------|----------------------------------|--------|--------------------------------|------------------------------------|----------------------------------|--------|
|                           | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number | Mild hypertension <sup>1</sup> | Moderate hypertension <sup>2</sup> | Severe hypertension <sup>3</sup> | Number |
| South                     |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |
| Andaman & Nicobar Islands | 22.5                           | 14.8                               | 2.4                              | 666    | 30.5                           | 20.3                               | 1.7                              | 475    | 25.8                           | 17.1                               | 2.1                              | 1,141  |
| Andhra Pradesh            | 23.2                           | 7.4                                | 1.0                              | 1,306  | 28.0                           | 15.5                               | 0.7                              | 932    | 25.2                           | 10.8                               | 0.9                              | 2,238  |
| Karnataka                 | 16.7                           | 7.8                                | 2.8                              | 1,299  | 26.9                           | 8.2                                | 2.0                              | 922    | 20.8                           | 8.0                                | 2.5                              | 2,221  |
| Kerala                    | 25.6                           | 6.5                                | 0.6                              | 1,191  | 32.8                           | 12.3                               | 3.0                              | 1,097  | 29.2                           | 9.5                                | 1.8                              | 2,288  |
| Lakshadweep               | 33.6                           | 10.3                               | 2.3                              | 611    | 37.8                           | 26.3                               | 0.8                              | 475    | 35.6                           | 17.9                               | 1.6                              | 1,086  |
| Puducherry                | 17.9                           | 6.6                                | 0.4                              | 726    | 25.3                           | 6.7                                | 0.8                              | 572    | 21.3                           | 6.7                                | 0.6                              | 1,298  |
| Tamil Nadu                | 18.2                           | 5.8                                | 1.4                              | 1,890  | 24.1                           | 12.2                               | 0.9                              | 1,409  | 20.8                           | 8.7                                | 1.2                              | 3,299  |
| Telangana                 | 19.5                           | 6.5                                | 1.0                              | 1,191  | 25.0                           | 11.0                               | 0.9                              | 937    | 22.0                           | 8.6                                | 0.9                              | 2,128  |
| Note                      |                                |                                    |                                  |        |                                |                                    |                                  |        |                                |                                    |                                  |        |

Note

\* *Including spouse irrespective of age.* “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

<sup>1</sup> Grade 1 (mild) hypertension- systolic blood pressure of 140-159 mmHg and/or diastolic blood pressure of 90-99 mmHg.

<sup>2</sup> Grade 2 (moderate) hypertension- systolic blood pressure of 160-179 mmHg and/or diastolic blood pressure of 100-109 mmHg.

<sup>3</sup> Grade 3 (critical) hypertension- systolic blood pressure of ≥180 mmHg and/or diastolic blood pressure of ≥110 mmHg.

### 9.1.2 Comparison of self-reported with measured prevalence of hypertension

This section compares the prevalence of measured high blood pressure with the self-reported prevalence of diagnosed hypertension.

The following indicators are generated from self-reported and measured hypertension:

- **Normal (no hypertension) refers** to persons who reported that they have not been diagnosed with hypertension by a health professional and measured systolic blood pressure was <140 mmHg and diastolic blood pressure was <90 mmHg (Reported Negative and Measured Negative: R-M-).
- **Undiagnosed hypertension refers** to persons who reported that they have not been diagnosed with hypertension by a health professional but measured systolic blood pressure was ≥140 mmHg or diastolic blood pressure was ≥90 mmHg or both (Reported Negative and Measured Positive: R-M+).
- **Controlled hypertension refers to** persons who reported that they have been diagnosed with hypertension by a health professional and measured systolic blood pressure was <140 mmHg and diastolic blood pressure was <90 mmHg (Reported Positive and Measured Negative: R+M-).
- **Uncontrolled hypertension refers to persons** who reported that they have been diagnosed with hypertension by a health professional and measured systolic blood pressure was ≥140 mmHg or diastolic blood pressure was ≥90 mmHg or both (Reported Positive and Measured Positive: R+M+).

Table 9.7 presents the prevalence of undiagnosed, controlled, and uncontrolled hypertension by background characteristics. One in five (20%) older adults age 45 and above have undiagnosed hypertension (R-M+). A higher proportion of elderly age 60 and above (22%) have undiagnosed hypertension than older adults age 45-59 (18%). The prevalence of undiagnosed hypertension is higher among elderly age 60 and above residing in rural areas (23%) than among those residing in urban areas (19%); however, among older adults age 45-59, this prevalence is higher among those residing in urban areas (20%) than among those residing in rural areas (17%). Among elderly age 60 and above, the prevalence of undiagnosed hypertension is higher among men (22%) than among women (21%), among those divorced/separated/deserted (29%), and among those living alone (25%). The prevalence of undiagnosed hypertension among elderly age 60 and above decreases with education and MPCE quintiles.

Overall, 15% of older adults age 45 and above in India have controlled hypertension, indicating that they have been previously diagnosed with hypertension and are currently maintaining normal blood pressure at the time of the survey. Eleven percent of older adults age 45 and above in India have uncontrolled hypertension, suggesting that they have been diagnosed with hypertension and have currently failed to maintain normal blood pressure. The prevalence rate of controlled hypertension is higher among elderly age 60 and above (17%) than among older adults age 45-59 (12%). Similarly, the prevalence of uncontrolled hypertension is significantly higher among elderly age 60 and above (15%) than among older adults age 45-59 (8%). Among elderly age 60 and above, the proportion of uncontrolled hypertension is higher among women (17%) than among men (12%) and among those residing in urban areas (21%) than among those residing in rural areas (12%); this proportion increases with education and MPCE quintiles. More than a quarter of elderly age 60 and above with 10 or more

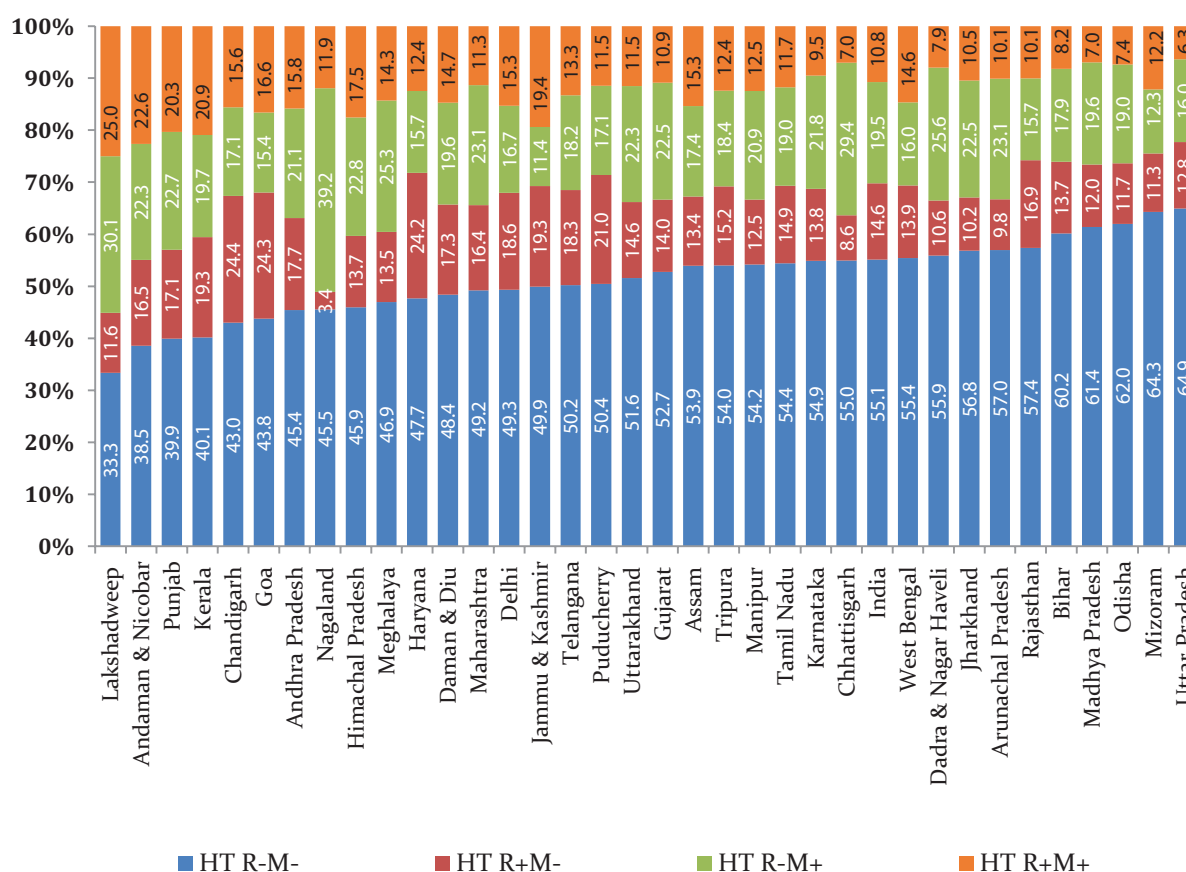


years of schooling (27%) have been diagnosed with hypertension but are currently (at the time of the survey) maintaining normal blood pressure (controlled) compared to 14% of elderly with no schooling. Similarly, 24% of elderly age 60 and above in the richest MPCE quintile who have been diagnosed with hypertension are currently maintaining normal blood pressure (controlled hypertension) compared to 13% in the poorest MPCE quintile.

Across the states/UTs of India, the proportion of older adults age 45 and above with undiagnosed hypertension ranges from 11% in Jammu & Kashmir to 39% in Nagaland (Table 9.8). Fifty percent of the elderly age 60 and above have undiagnosed hypertension in the states of Nagaland (50%), and the prevalence is more than one-quarter in the state/UTs of Chhattisgarh (33%), Lakshadweep (33%), Meghalaya (31%), Jharkhand (28%), Arunachal Pradesh (28%), Dadra & Nagar Haveli (26%), Uttarakhand (26%), and Himachal Pradesh (26%).

The proportion of older adults age 45 and above who reported that they were diagnosed with hypertension but currently have uncontrolled hypertension (measured) is the highest in Lakshadweep (25%) and the lowest in Uttar Pradesh (6%). More than a quarter of elderly age 60 and above have uncontrolled hypertension in Lakshadweep (32%), Kerala (29%), Andaman & Nicobar (28%), Punjab (25%), and Delhi (25%). However, more than a quarter of elderly age 60 and above who reported to have been diagnosed with hypertension currently have normal blood pressure (controlled) in the states/UTs of Chandigarh (34%), Goa (33%), Puducherry (28%), and Haryana (25%).

**Figure 9.4 Comparison of self-reported with measured prevalence of hypertension among older adults age 45 and above\*, states/UTs, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age.

**Table 9.7 Percent distribution of older adults based on self-reported diagnosed vs measured hypertension by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*                   |                                        |                                      |                                         |        |                              | Age ≥ 60                               |                                      |                                         |        |                              |                                        | Total                                |                                         |        |                              |
|------------------------------------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------|------------------------------|
|                                          | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number | No hypertension <sup>1</sup> |
|                                          |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| <b>Place of residence</b>                |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Rural                                    | 66.5                         | 16.5                                   | 10.7                                 | 6.3                                     | 23,845 | 51.3                         | 22.8                                   | 13.9                                 | 12.0                                    | 18,950 | 59.3                         | 19.5                                   | 12.2                                 | 9.0                                     | 42,795 |                              |
| Urban                                    | 53.9                         | 20.1                                   | 15.8                                 | 10.2                                    | 13,391 | 34.6                         | 18.5                                   | 25.8                                 | 21.1                                    | 9,521  | 45.6                         | 19.4                                   | 20.1                                 | 14.9                                    | 22,912 |                              |
| <b>Sex</b>                               |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Male                                     | 61.4                         | 21.4                                   | 9.4                                  | 7.8                                     | 13,965 | 51.2                         | 21.9                                   | 14.9                                 | 12.1                                    | 13,698 | 56.1                         | 21.6                                   | 12.2                                 | 10.0                                    | 27,663 |                              |
| Female                                   | 63.0                         | 15.5                                   | 14.1                                 | 7.4                                     | 23,271 | 42.3                         | 21.3                                   | 19.5                                 | 16.9                                    | 14,773 | 54.5                         | 17.9                                   | 16.3                                 | 11.3                                    | 38,044 |                              |
| <b>Marital status</b>                    |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Currently married                        | 63.1                         | 17.6                                   | 12.1                                 | 7.2                                     | 32,420 | 49.8                         | 20.6                                   | 16.6                                 | 13.0                                    | 18,155 | 58.1                         | 18.8                                   | 13.7                                 | 9.4                                     | 50,575 |                              |
| Widowed                                  | 54.7                         | 18.8                                   | 15.8                                 | 10.6                                    | 3,569  | 40.9                         | 22.8                                   | 18.8                                 | 17.5                                    | 9,586  | 44.1                         | 21.9                                   | 18.1                                 | 15.9                                    | 13,155 |                              |
| Divorced/Separated/Deserted/<br>Others   | 66.4                         | 15.2                                   | 10.4                                 | 8.0                                     | 1,247  | 46.9                         | 28.8                                   | 13.6                                 | 10.6                                    | 730    | 59.1                         | 20.3                                   | 11.6                                 | 9.0                                     | 1,977  |                              |
| <b>Living arrangement</b>                |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Living alone                             | 54.6                         | 20.7                                   | 12.2                                 | 12.4                                    | 643    | 43.1                         | 24.7                                   | 17.4                                 | 14.9                                    | 1,477  | 45.7                         | 23.8                                   | 16.2                                 | 14.3                                    | 2,120  |                              |
| Living with spouse and/or others         | 61.8                         | 18.3                                   | 11.6                                 | 8.3                                     | 3,943  | 49.3                         | 21.0                                   | 16.7                                 | 13.1                                    | 5,552  | 54.4                         | 19.9                                   | 14.6                                 | 11.1                                    | 9,495  |                              |
| Living with spouse and children          | 63.3                         | 17.5                                   | 12.1                                 | 7.0                                     | 27,885 | 50.1                         | 20.5                                   | 16.4                                 | 12.9                                    | 12,394 | 59.1                         | 18.5                                   | 13.5                                 | 8.9                                     | 40,279 |                              |
| Living with children and others          | 56.7                         | 17.5                                   | 15.8                                 | 10.0                                    | 3,764  | 40.2                         | 22.7                                   | 19.6                                 | 17.6                                    | 7,580  | 44.9                         | 21.2                                   | 18.5                                 | 15.4                                    | 11,344 |                              |
| Living with others only                  | 63.1                         | 18.2                                   | 11.3                                 | 7.5                                     | 1,001  | 44.7                         | 23.2                                   | 14.6                                 | 17.5                                    | 1,468  | 51.7                         | 21.3                                   | 13.3                                 | 13.7                                    | 2,469  |                              |
| <b>Religion</b>                          |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Hindu                                    | 63.3                         | 17.7                                   | 12.0                                 | 7.1                                     | 27,331 | 47.6                         | 21.4                                   | 17.0                                 | 13.9                                    | 20,835 | 56.1                         | 19.4                                   | 14.3                                 | 10.2                                    | 48,166 |                              |
| Muslim                                   | 57.2                         | 16.9                                   | 15.9                                 | 10.0                                    | 4,485  | 42.8                         | 21.5                                   | 18.9                                 | 16.8                                    | 3,386  | 50.8                         | 19.0                                   | 17.2                                 | 13.0                                    | 7,871  |                              |
| Christian                                | 68.5                         | 16.1                                   | 9.3                                  | 6.0                                     | 3,739  | 38.9                         | 24.6                                   | 17.7                                 | 18.8                                    | 2,861  | 55.2                         | 19.9                                   | 13.1                                 | 11.8                                    | 6,600  |                              |
| Others                                   | 54.4                         | 21.0                                   | 12.9                                 | 11.8                                    | 1,681  | 38.0                         | 23.4                                   | 18.7                                 | 19.9                                    | 1,389  | 46.5                         | 22.2                                   | 15.7                                 | 15.6                                    | 3,070  |                              |
| <b>Caste/tribe</b>                       |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Scheduled tribe                          | 67.8                         | 20.0                                   | 6.8                                  | 5.4                                     | 6,818  | 52.9                         | 28.8                                   | 9.9                                  | 8.4                                     | 4,696  | 61.4                         | 23.8                                   | 8.1                                  | 6.7                                     | 11,514 |                              |
| Scheduled caste                          | 65.0                         | 16.0                                   | 12.1                                 | 6.9                                     | 6,386  | 51.3                         | 22.4                                   | 13.4                                 | 12.9                                    | 4,651  | 58.9                         | 18.9                                   | 12.7                                 | 9.6                                     | 11,037 |                              |
| Other backward class                     | 61.8                         | 18.6                                   | 12.4                                 | 7.3                                     | 13,971 | 46.6                         | 20.9                                   | 18.0                                 | 14.4                                    | 10,838 | 54.8                         | 19.6                                   | 15.0                                 | 10.6                                    | 24,809 |                              |
| None of the above                        | 59.7                         | 16.6                                   | 14.4                                 | 9.2                                     | 10,061 | 41.2                         | 20.0                                   | 21.0                                 | 17.8                                    | 8,286  | 50.9                         | 18.2                                   | 17.5                                 | 13.3                                    | 18,347 |                              |
| <b>Education</b>                         |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| No schooling                             | 64.7                         | 16.3                                   | 12.2                                 | 6.8                                     | 15,004 | 50.6                         | 23.3                                   | 14.1                                 | 12.0                                    | 15,240 | 57.4                         | 19.9                                   | 13.2                                 | 9.5                                     | 30,244 |                              |
| Less than 5 years complete               | 64.8                         | 17.1                                   | 10.5                                 | 7.7                                     | 3,973  | 44.4                         | 21.5                                   | 19.0                                 | 15.1                                    | 3,494  | 54.9                         | 19.2                                   | 14.6                                 | 11.3                                    | 7,467  |                              |
| 5-9 years complete                       | 61.5                         | 17.7                                   | 13.0                                 | 7.9                                     | 10,034 | 42.9                         | 19.3                                   | 18.8                                 | 19.0                                    | 5,499  | 54.4                         | 18.3                                   | 15.2                                 | 12.1                                    | 15,533 |                              |
| 10 or more years complete                | 57.7                         | 20.8                                   | 12.9                                 | 8.6                                     | 8,225  | 36.0                         | 17.8                                   | 27.0                                 | 19.3                                    | 4,238  | 50.0                         | 19.7                                   | 17.9                                 | 12.4                                    | 12,463 |                              |
| <b>Work status</b>                       |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |
| Currently working                        | 64.3                         | 19.6                                   | 10.0                                 | 6.1                                     | 21,590 | 55.7                         | 23.8                                   | 11.8                                 | 8.6                                     | 8,535  | 61.7                         | 20.9                                   | 10.5                                 | 6.9                                     | 30,125 |                              |
| Worked in past but currently not working | 56.6                         | 14.5                                   | 16.9                                 | 12.0                                    | 4,184  | 44.2                         | 21.9                                   | 17.7                                 | 16.2                                    | 12,044 | 47.2                         | 20.1                                   | 17.5                                 | 15.1                                    | 16,228 |                              |
| Never worked                             | 60.7                         | 15.0                                   | 15.5                                 | 8.7                                     | 11,462 | 39.1                         | 18.4                                   | 23.3                                 | 19.2                                    | 7,892  | 51.3                         | 16.5                                   | 18.9                                 | 13.3                                    | 19,354 |                              |

continued

continued

| Background characteristics | Age 45-59*                   |                                        |                                      |                                         |               |                              | Age ≥ 60                               |                                      |                                         |               |                              |                                        | Total                                |                                         |
|----------------------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|---------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|---------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|
|                            | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number        | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number        | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> |
|                            |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| <b>MPCE quintile</b>       |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| Poorest                    | 68.1                         | 17.4                                   | 9.2                                  | 5.3                                     | 7,096         | 50.5                         | 24.6                                   | 12.7                                 | 12.2                                    | 5,826         | 59.8                         | 20.8                                   | 10.9                                 | 8.6                                     |
| Poorer                     | 64.4                         | 17.7                                   | 11.0                                 | 6.9                                     | 7,377         | 49.5                         | 22.1                                   | 15.0                                 | 13.3                                    | 5,875         | 57.5                         | 19.7                                   | 12.9                                 | 9.9                                     |
| Middle                     | 62.1                         | 18.0                                   | 12.2                                 | 7.7                                     | 7,441         | 46.9                         | 22.1                                   | 16.8                                 | 14.2                                    | 5,856         | 55.0                         | 19.9                                   | 14.3                                 | 10.8                                    |
| Richer                     | 61.4                         | 16.4                                   | 13.6                                 | 8.6                                     | 7,729         | 43.8                         | 19.5                                   | 19.7                                 | 17.1                                    | 5,609         | 53.4                         | 17.8                                   | 16.3                                 | 12.4                                    |
| Richest                    | 55.5                         | 19.0                                   | 16.2                                 | 9.4                                     | 7,593         | 39.9                         | 18.8                                   | 24.3                                 | 17.0                                    | 5,305         | 48.9                         | 18.9                                   | 19.6                                 | 12.6                                    |
| <b>Total</b>               | <b>62.4</b>                  | <b>17.7</b>                            | <b>12.4</b>                          | <b>7.5</b>                              | <b>37,236</b> | <b>46.5</b>                  | <b>21.6</b>                            | <b>17.3</b>                          | <b>14.6</b>                             | <b>28,471</b> | <b>55.1</b>                  | <b>19.5</b>                            | <b>14.6</b>                          | <b>10.8</b>                             |
| <b>65,707</b>              |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |

Note

\* Including spouse irrespective of age.

<sup>1</sup> No hypertension refers to those undiagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R- M-).

<sup>2</sup> Undiagnosed hypertension refers to those undiagnosed by a health professional but whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R- M+).

<sup>3</sup> Controlled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R+ M-).

<sup>4</sup> Uncontrolled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R+ M+).

**Table 9.8 Percent distribution of older adults based on self-reported diagnosed vs measured hypertension, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*                   |                                        |                                      |                                         |               |                              | Age ≥ 60                               |                                      |                                         |               |                              |                                        | Total                                |                                         |
|-----------------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|---------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|---------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|
|                       | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number        | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number        | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> |
| <b>India</b>          | <b>62.4</b>                  | <b>17.7</b>                            | <b>12.4</b>                          | <b>7.5</b>                              | <b>37,236</b> | <b>46.5</b>                  | <b>21.6</b>                            | <b>17.3</b>                          | <b>14.6</b>                             | <b>28,471</b> | <b>55.1</b>                  | <b>19.5</b>                            | <b>14.6</b>                          | <b>10.8</b>                             |
| <b>North</b>          |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| Chhattisgarh          | 51.1                         | 16.8                                   | 17.9                                 | 14.3                                    | 536           | 30.7                         | 17.5                                   | 34.2                                 | 17.6                                    | 331           | 43.0                         | 17.1                                   | 24.4                                 | 15.6                                    |
| Delhi                 | 57.1                         | 16.0                                   | 17.7                                 | 9.2                                     | 799           | 36.6                         | 17.9                                   | 20.3                                 | 25.3                                    | 478           | 49.3                         | 16.7                                   | 18.6                                 | 15.3                                    |
| Haryana               | 51.8                         | 14.9                                   | 23.9                                 | 10.0                                    | 945           | 43.1                         | 16.6                                   | 25.1                                 | 15.1                                    | 766           | 47.7                         | 15.7                                   | 24.2                                 | 12.4                                    |
| Himachal Pradesh      | 53.4                         | 20.4                                   | 13.3                                 | 12.3                                    | 733           | 37.5                         | 25.6                                   | 13.5                                 | 23.5                                    | 579           | 45.9                         | 22.8                                   | 13.7                                 | 17.5                                    |
| Jammu & Kashmir       | 59.4                         | 9.6                                    | 16.7                                 | 14.3                                    | 768           | 40.2                         | 13.2                                   | 22.1                                 | 24.6                                    | 627           | 49.9                         | 11.4                                   | 19.3                                 | 19.4                                    |
| Punjab                | 46.5                         | 22.0                                   | 15.6                                 | 15.9                                    | 1,046         | 32.6                         | 23.4                                   | 18.8                                 | 25.2                                    | 925           | 39.9                         | 22.7                                   | 17.1                                 | 20.3                                    |
| Rajasthan             | 64.8                         | 12.5                                   | 15.5                                 | 7.3                                     | 1,096         | 49.8                         | 19.0                                   | 18.3                                 | 12.9                                    | 988           | 57.4                         | 15.7                                   | 16.9                                 | 10.1                                    |
| Uttarakhand           | 56.5                         | 19.2                                   | 14.9                                 | 9.4                                     | 668           | 46.5                         | 25.5                                   | 14.2                                 | 13.8                                    | 606           | 51.6                         | 22.3                                   | 14.6                                 | 11.5                                    |
| <b>Central</b>        |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| Chhattisgarh          | 59.9                         | 27.3                                   | 7.5                                  | 5.4                                     | 1,217         | 47.0                         | 32.9                                   | 10.5                                 | 9.7                                     | 730           | 55.0                         | 29.4                                   | 8.6                                  | 7.0                                     |
| Madhya Pradesh        | 65.0                         | 17.9                                   | 11.8                                 | 5.3                                     | 1,458         | 57.4                         | 21.5                                   | 12.3                                 | 8.9                                     | 1,172         | 61.4                         | 19.6                                   | 12.0                                 | 7.0                                     |
| Uttar Pradesh         | 70.7                         | 11.3                                   | 13.3                                 | 4.7                                     | 2,213         | 59.0                         | 20.8                                   | 12.2                                 | 8.0                                     | 1,962         | 64.9                         | 16.0                                   | 12.8                                 | 6.3                                     |
| <b>East</b>           |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| Bihar                 | 66.8                         | 14.4                                   | 14.1                                 | 4.7                                     | 1,667         | 54.3                         | 21.0                                   | 13.4                                 | 11.3                                    | 1,741         | 60.2                         | 17.9                                   | 13.7                                 | 8.2                                     |
| Jharkhand             | 66.5                         | 17.3                                   | 9.2                                  | 7.0                                     | 1,217         | 46.5                         | 28.0                                   | 11.3                                 | 14.2                                    | 1,096         | 56.8                         | 22.5                                   | 10.2                                 | 10.5                                    |
| Odisha                | 68.8                         | 17.9                                   | 8.1                                  | 5.1                                     | 1,560         | 52.8                         | 20.5                                   | 16.4                                 | 10.3                                    | 1,099         | 62.0                         | 19.0                                   | 11.7                                 | 7.4                                     |
| West Bengal           | 63.6                         | 13.7                                   | 12.3                                 | 10.4                                    | 2,152         | 43.2                         | 19.3                                   | 16.5                                 | 20.9                                    | 1,379         | 55.4                         | 16.0                                   | 13.9                                 | 14.6                                    |
| <b>Northeast</b>      |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| Arunachal Pradesh     | 60.4                         | 21.8                                   | 8.0                                  | 9.8                                     | 852           | 46.1                         | 27.5                                   | 15.4                                 | 11.1                                    | 294           | 57.0                         | 23.1                                   | 9.8                                  | 10.1                                    |
| Assam                 | 61.7                         | 14.6                                   | 12.3                                 | 11.4                                    | 1,397         | 39.7                         | 22.5                                   | 15.3                                 | 22.6                                    | 725           | 53.9                         | 17.4                                   | 13.4                                 | 15.3                                    |
| Manipur               | 59.9                         | 19.6                                   | 9.3                                  | 11.1                                    | 662           | 47.6                         | 22.3                                   | 16.1                                 | 14.0                                    | 527           | 54.2                         | 20.9                                   | 12.5                                 | 12.5                                    |
| Meghalaya             | 57.9                         | 21.3                                   | 11.5                                 | 9.4                                     | 507           | 32.2                         | 30.6                                   | 16.2                                 | 20.9                                    | 384           | 46.9                         | 25.3                                   | 13.5                                 | 14.3                                    |
| Mizoram               | 72.0                         | 11.2                                   | 7.7                                  | 9.0                                     | 659           | 54.4                         | 13.6                                   | 15.8                                 | 16.2                                    | 470           | 64.3                         | 12.3                                   | 11.3                                 | 12.2                                    |
| Nagaland              | 56.2                         | 28.8                                   | 2.7                                  | 12.3                                    | 662           | 34.5                         | 50.0                                   | 4.1                                  | 11.5                                    | 563           | 45.5                         | 39.2                                   | 3.4                                  | 11.9                                    |
| Tripura               | 61.1                         | 16.6                                   | 12.4                                 | 9.9                                     | 676           | 43.3                         | 21.2                                   | 19.5                                 | 16.0                                    | 424           | 54.0                         | 18.4                                   | 15.2                                 | 12.4                                    |
| <b>West</b>           |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |               |                              |                                        |                                      |                                         |
| Dadra & Nagar Haveli  | 60.5                         | 25.1                                   | 8.9                                  | 5.5                                     | 594           | 48.7                         | 26.3                                   | 13.2                                 | 11.9                                    | 407           | 55.9                         | 25.6                                   | 10.6                                 | 7.9                                     |
| Daman & Diu           | 57.0                         | 16.4                                   | 15.1                                 | 11.5                                    | 534           | 38.3                         | 23.4                                   | 19.9                                 | 18.4                                    | 401           | 48.4                         | 19.6                                   | 17.3                                 | 14.7                                    |
| Goa                   | 59.9                         | 13.8                                   | 17.0                                 | 9.3                                     | 690           | 24.8                         | 17.2                                   | 32.9                                 | 25.1                                    | 568           | 43.8                         | 15.4                                   | 24.3                                 | 16.6                                    |
| Gujarat               | 60.3                         | 20.5                                   | 12.2                                 | 7.0                                     | 1,198         | 43.5                         | 24.8                                   | 16.1                                 | 15.6                                    | 886           | 52.7                         | 22.5                                   | 14.0                                 | 10.9                                    |
| Maharashtra           | 58.7                         | 22.9                                   | 10.8                                 | 7.5                                     | 1,853         | 39.4                         | 23.2                                   | 22.1                                 | 15.2                                    | 1,530         | 49.2                         | 23.1                                   | 16.4                                 | 11.3                                    |

continued

continued

| State/Union Territory     | Age 45-59*                   |                                        |                                      |                                         |        | Age ≥ 60                     |                                        |                                      |                                         |        | Total                        |                                        |                                      |                                         |        |
|---------------------------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------|------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|--------|
|                           | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number | No hypertension <sup>1</sup> | Un-diagnosed hypertension <sup>2</sup> | Controlled hypertension <sup>3</sup> | Un-controlled hypertension <sup>4</sup> | Number |
| South                     |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |                              |                                        |                                      |                                         |        |
| Andaman & Nicobar Islands | 46.4                         | 21.1                                   | 13.9                                 | 18.6                                    | 666    | 27.3                         | 24.1                                   | 20.3                                 | 28.3                                    | 474    | 38.5                         | 22.3                                   | 16.5                                 | 22.6                                    | 1,140  |
| Andhra Pradesh            | 53.9                         | 20.2                                   | 14.6                                 | 11.3                                    | 1,306  | 33.9                         | 22.3                                   | 21.9                                 | 21.9                                    | 932    | 45.4                         | 21.1                                   | 17.7                                 | 15.8                                    | 2,238  |
| Karnataka                 | 63.1                         | 21.2                                   | 9.5                                  | 6.2                                     | 1,297  | 42.8                         | 22.7                                   | 20.1                                 | 14.4                                    | 920    | 54.9                         | 21.8                                   | 13.8                                 | 9.5                                     | 2,217  |
| Kerala                    | 53.6                         | 20.2                                   | 13.7                                 | 12.5                                    | 1,190  | 27.3                         | 19.1                                   | 24.6                                 | 28.9                                    | 1,097  | 40.1                         | 19.7                                   | 19.3                                 | 20.9                                    | 2,287  |
| Lakshadweep               | 42.9                         | 27.9                                   | 10.9                                 | 18.4                                    | 611    | 22.8                         | 32.6                                   | 12.3                                 | 32.3                                    | 475    | 33.3                         | 30.1                                   | 11.6                                 | 25.0                                    | 1,086  |
| Puducherry                | 60.2                         | 16.6                                   | 14.8                                 | 8.3                                     | 726    | 38.9                         | 17.7                                   | 28.3                                 | 15.1                                    | 572    | 50.4                         | 17.1                                   | 21.0                                 | 11.5                                    | 1,298  |
| Tamil Nadu                | 63.1                         | 17.1                                   | 11.5                                 | 8.3                                     | 1,890  | 43.7                         | 21.3                                   | 19.0                                 | 15.9                                    | 1,408  | 54.4                         | 19.0                                   | 14.9                                 | 11.7                                    | 3,298  |
| Telangana                 | 58.9                         | 18.6                                   | 14.2                                 | 8.4                                     | 1,191  | 40.0                         | 17.8                                   | 23.1                                 | 19.1                                    | 935    | 50.2                         | 18.2                                   | 18.3                                 | 13.3                                    | 2,126  |

Note

\* Including spouse irrespective of age.

<sup>1</sup> No hypertension refers to those undiagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R- M-).

<sup>2</sup> Undiagnosed hypertension refers to those undiagnosed by a health professional but whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R- M+).

<sup>3</sup> Controlled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R+ M-).

<sup>4</sup> Uncontrolled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R+ M+).

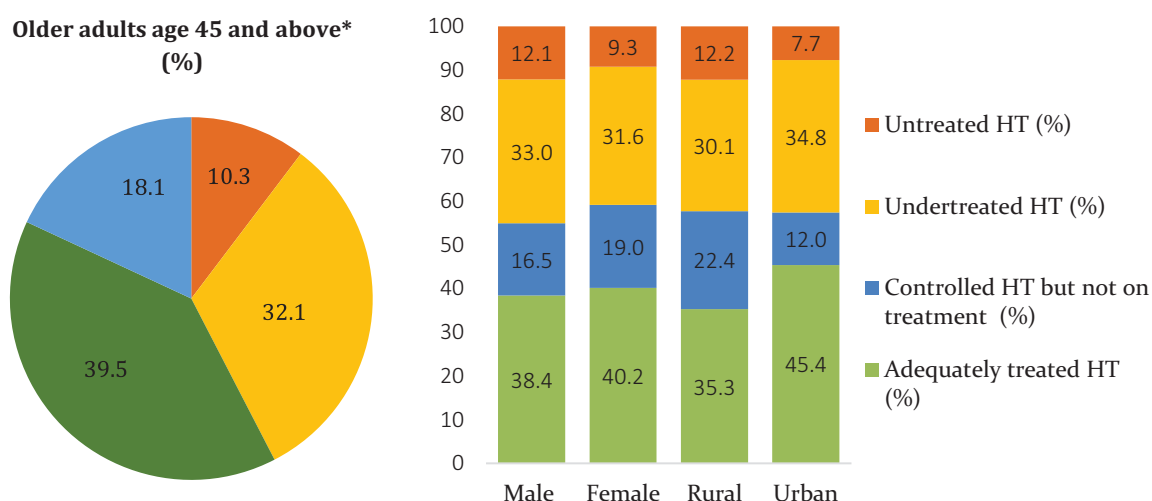
Along with the treatment information for diagnosed hypertension and measured blood pressure, in the LASI information on treatment for hypertension was also collected, based on which the following indicators have been generated:

- **Untreated hypertension** refers to those who reported that they have been diagnosed with hypertension by a health professional and currently have hypertension but are not receiving treatment.
- **Undertreated hypertension** refers to those who reported that they have been diagnosed with hypertension by a health professional and are receiving treatment, but currently have hypertension (measured).
- **Adequately treated hypertension** refers those who reported that they have been diagnosed with hypertension by a health professional, are receiving treatment, and currently have normal
- **Controlled hypertension but not on treatment** refers to those reported that they have been diagnosed with hypertension by a health professional and are not receiving any medication, but currently have normal blood pressure.

*Note:* Untreated, undertreated, adequately treated, and controlled hypertension, but not on medication, are calculated among those who reported that they have been diagnosed with hypertension.

Figure 9.5 shows that among older adults age 45 and above who reported that they have been diagnosed with hypertension, 10% have untreated hypertension, 32% have undertreated hypertension, 40% are adequately treated for hypertension, and 18% have controlled hypertension, but currently they are not on medication.

**Figure 9.5 Percent distribution of older adults age 45 and above with untreated, undertreated, adequately treated, and controlled hypertension but not on treatment by sex and place of residence, LASI Wave 1, 2017-18**



Note \* Including spouse irrespective of age

Table 9.9 presents the percentage of older adults with untreated, undertreated, and adequately treated hypertension by background characteristics. One in 10 elderly age 60 and above who reported that they have been diagnosed with hypertension (10%) are currently untreated for hypertension, and more than a third of elderly age 60 and above who reported that they have been diagnosed with hypertension (36%) are undertreated for hypertension. A higher proportion of elderly age 60 and above who have been diagnosed with hypertension are adequately treated for hypertension (42%) than older adults age 45-59 (36%). The prevalence of untreated hypertension is higher among elderly age 60 and above who are residing in rural areas (13%) than among those residing in urban areas (7%), whereas the prevalence of undertreated and adequately treated hypertension is higher among elderly in urban areas (39% and 49%, respectively) than among those in rural areas (34% and 38%, respectively). Among elderly age 60 and above, the prevalence of untreated hypertension is higher among men (12%) than among women (9%) and decreases with an increase in education and MPCE quintiles. However, a higher proportion of elderly women age 60 and above (37%) than men (33%) are undertreated for hypertension. Furthermore, half of elderly age 60 and above with 10 or more years of education (51%) and of those who belong to the richest MPCE quintile (49%) reported that they have been diagnosed with hypertension and are currently adequately treated for hypertension.

Table 9.10 presents cross-state variations in the proportion of older adults who reported to have been diagnosed with hypertension and who are untreated, undertreated, or adequately treated for hypertension. The proportion of older adults age 45 and above untreated for hypertension is the highest in Arunachal Pradesh (34%) and the lowest in Goa (1.3%). More than 20% of elderly age 60 and above who reported that they have been diagnosed with hypertension remain untreated for hypertension in the states/UTs of Arunachal Pradesh (26%), Mizoram (25%), Nagaland (25%), and Himachal Pradesh (22%). The proportion of elderly age 60 and above who reported that they have been diagnosed with hypertension but remain undertreated for hypertension is markedly higher in the states/UTs of Lakshadweep (59%), Meghalaya (52%), Nagaland (49%), Punjab (48%), and Delhi (48%). However, in Puducherry (61%), Chandigarh (60%), Goa (55%), Maharashtra (55%), Karnataka (52%), and Telangana (50%), more than half of elderly age 60 and above who reported that they have been diagnosed with hypertension are adequately treated.



## Key findings: measured blood pressure

- Overall, 30% of older adults age 45 and above in India have high blood pressure (measured). The prevalence of high blood pressure is higher among elderly age 60 and above (36%) than among older adults age 45–59 (25%). More than half of elderly age 60 and above have high blood pressure in the states/UTs of Lakshadweep (65%), Nagaland (62%), Andaman & Nicobar (53%), and Meghalaya (52%).
- Overall, in India, 20% of older adults age 45 and above remain undiagnosed for hypertension. More than a fifth of elderly age 60 and above (22%) remain undiagnosed for hypertension. The prevalence rate of undiagnosed hypertension among elderly age 60 and above is higher in rural (23%) than in urban areas (19%), higher in those living alone (25%) than in those living with spouse and children (21%), higher among scheduled tribe (29%) than other caste (none of the above) (20%), higher among those with no schooling (23%) than those with more than 10 years of schooling (18%), and higher among those in the poorest MPCE quintile (25%) than those in the richest MPCE quintile (19%).
- More than a quarter of elderly age 60 and above have undiagnosed hypertension in the states/UTs of Nagaland (50%), Chhattisgarh (33%), Lakshadweep (33%), Meghalaya (31%), Jharkhand (28%), Arunachal Pradesh (28%), Dadra & Nagar Haveli (26%), Uttarakhand (26%), and Himachal Pradesh (26%).
- Overall, 17% and 15% of elderly age 60 and above in India who reported that they have been diagnosed with hypertension currently have normal and high blood pressure, respectively.
- More than a quarter of elderly age 60 and above who reported that they have been diagnosed with hypertension currently have normal blood pressure (controlled) in the states/UTs of Chandigarh (34%), Goa (33%), Puducherry (28%), and Haryana (25%).
- Among elderly age 60 and above who reported that they have been diagnosed with hypertension, 42% are adequately treated; however, more than a third of elderly are undertreated (36%) and one in 10 elderly remain untreated (10%).
- Elderly residing in rural areas, especially men, elderly who belong to Scheduled tribe, and elderly with no schooling or who are in the poorest MPCE quintile are more likely to remain untreated for hypertension.
- More than a fifth of elderly age 60 and above who reported that they have been diagnosed with hypertension remain untreated in the states/UTs of Arunachal Pradesh (26%), Mizoram (25%), Nagaland (25%), and Himachal Pradesh (22%). Conversely, more than a half of elderly age 60 and above are adequately treated for hypertension in the states/UTs of Puducherry (61%), Chandigarh (60%), Goa (55%), Maharashtra (55%), Karnataka (52%), and Telangana (50%).

**Table 9.9 Percentage of older adults with untreated, undertreated and adequately treated hypertension by background characteristics India, LASI Wave 1, 2017-18**

| Background characteristics         | Age 45-59*                          |                                        |                                 |        |  | Age ≥ 60                            |                                        |                                 |        |  | Total                               |                                        |                                 |
|------------------------------------|-------------------------------------|----------------------------------------|---------------------------------|--------|--|-------------------------------------|----------------------------------------|---------------------------------|--------|--|-------------------------------------|----------------------------------------|---------------------------------|
|                                    | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number |  | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number |  | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> |
| <b>Place of residence</b>          |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| Rural                              | 11.7                                | 25.2                                   | 31.9                            | 4,338  |  | 12.5                                | 33.8                                   | 37.8                            | 5,373  |  | 12.2                                | 30.1                                   | 35.3                            |
| Urban                              | 9.4                                 | 29.9                                   | 41.1                            | 3,600  |  | 6.5                                 | 38.5                                   | 48.6                            | 4,324  |  | 7.7                                 | 34.8                                   | 45.4                            |
| <b>Sex</b>                         |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| Male                               | 13.2                                | 32.3                                   | 30.4                            | 2,533  |  | 11.5                                | 33.3                                   | 43.1                            | 4,085  |  | 12.1                                | 33.0                                   | 38.4                            |
| Female                             | 9.5                                 | 24.7                                   | 38.3                            | 5,405  |  | 9.0                                 | 37.4                                   | 41.7                            | 5,612  |  | 9.3                                 | 31.6                                   | 40.2                            |
| <b>Marital status</b>              |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| Currently married                  | 10.7                                | 26.7                                   | 35.4                            | 6,626  |  | 10.2                                | 33.8                                   | 43.4                            | 5,855  |  | 10.5                                | 30.1                                   | 39.2                            |
| Widowed                            | 11.4                                | 28.8                                   | 40.5                            | 1,036  |  | 9.8                                 | 38.5                                   | 40.9                            | 3,617  |  | 10.1                                | 36.7                                   | 40.8                            |
| Divorced/Separated/Deserted/Others | 9.3                                 | 34.2                                   | 25.9                            | 276    |  | 8.1                                 | 35.7                                   | 38.4                            | 225    |  | 8.8                                 | 34.8                                   | 31.4                            |
| <b>Living arrangement</b>          |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| Living alone                       | 12.3                                | 38.2                                   | 33.4                            | 159    |  | 10.3                                | 35.9                                   | 36.9                            | 500    |  | 10.6                                | 36.3                                   | 36.2                            |
| Living with spouse and/others      | 9.0                                 | 32.5                                   | 38.1                            | 901    |  | 10.4                                | 33.5                                   | 43.4                            | 1,787  |  | 9.9                                 | 33.2                                   | 41.7                            |
| Living with spouse and children    | 10.9                                | 25.8                                   | 35.0                            | 5,587  |  | 10.1                                | 34.0                                   | 43.5                            | 3,992  |  | 10.6                                | 29.3                                   | 38.6                            |
| Living with children and others    | 10.9                                | 27.9                                   | 39.4                            | 1,067  |  | 8.8                                 | 38.5                                   | 42.8                            | 2,886  |  | 9.2                                 | 36.2                                   | 42.0                            |
| Living with others only            | 10.7                                | 29.3                                   | 31.9                            | 224    |  | 15.5                                | 39.1                                   | 32.7                            | 532    |  | 14.3                                | 36.5                                   | 32.5                            |
| <b>Religion</b>                    |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| Hindu                              | 10.8                                | 26.4                                   | 35.4                            | 5,590  |  | 10.2                                | 34.8                                   | 42.6                            | 6,804  |  | 10.5                                | 31.3                                   | 39.6                            |
| Muslim                             | 9.7                                 | 28.9                                   | 38.1                            | 1,212  |  | 9.0                                 | 38.0                                   | 40.9                            | 1,391  |  | 9.3                                 | 33.7                                   | 39.6                            |
| Christian                          | 13.0                                | 26.3                                   | 41.1                            | 680    |  | 8.5                                 | 43.0                                   | 41.8                            | 944    |  | 10.0                                | 37.3                                   | 41.6                            |
| Others                             | 11.6                                | 36.0                                   | 32.3                            | 456    |  | 10.0                                | 41.6                                   | 40.0                            | 558    |  | 10.7                                | 39.3                                   | 36.8                            |
| <b>Caste/tribe</b>                 |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| Scheduled tribe                    | 18.1                                | 25.9                                   | 26.2                            | 1,074  |  | 17.2                                | 28.8                                   | 38.0                            | 1,144  |  | 17.6                                | 27.4                                   | 32.4                            |
| Scheduled caste                    | 10.9                                | 25.3                                   | 34.7                            | 1,324  |  | 15.7                                | 33.4                                   | 36.1                            | 1,357  |  | 13.4                                | 29.6                                   | 35.5                            |
| Other backward class               | 9.8                                 | 27.3                                   | 37.2                            | 2,954  |  | 8.8                                 | 35.7                                   | 43.8                            | 3,690  |  | 9.2                                 | 32.2                                   | 41.1                            |
| None of the above                  | 10.6                                | 28.4                                   | 36.0                            | 2,586  |  | 8.0                                 | 37.9                                   | 43.6                            | 3,506  |  | 9.1                                 | 34.1                                   | 40.6                            |
| <b>Education</b>                   |                                     |                                        |                                 |        |  |                                     |                                        |                                 |        |  |                                     |                                        |                                 |
| No schooling                       | 10.4                                | 25.3                                   | 33.7                            | 2,919  |  | 11.6                                | 34.2                                   | 38.4                            | 4,412  |  | 11.1                                | 30.7                                   | 36.5                            |
| Less than 5 years complete         | 13.4                                | 29.0                                   | 34.8                            | 787    |  | 10.5                                | 33.7                                   | 45.0                            | 1,267  |  | 11.6                                | 32.0                                   | 41.3                            |
| 5-9 years complete                 | 10.1                                | 27.6                                   | 34.5                            | 2,257  |  | 8.3                                 | 42.1                                   | 40.5                            | 2,083  |  | 9.1                                 | 35.3                                   | 37.7                            |
| 10 or more years complete          | 10.8                                | 29.3                                   | 41.4                            | 1,975  |  | 7.9                                 | 33.8                                   | 51.4                            | 1,935  |  | 9.2                                 | 31.7                                   | 46.8                            |

continued

continued

| Background characteristics               | Age 45-59*                          |                                        |                                 |        | Age ≥ 60                            |                                        |                                 |        | Total                               |                                        |                                 |        |
|------------------------------------------|-------------------------------------|----------------------------------------|---------------------------------|--------|-------------------------------------|----------------------------------------|---------------------------------|--------|-------------------------------------|----------------------------------------|---------------------------------|--------|
|                                          | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number |
| Work status                              |                                     |                                        |                                 |        |                                     |                                        |                                 |        |                                     |                                        |                                 |        |
| Currently working                        | 11.1                                | 27.0                                   | 33.6                            | 3,748  | 13.9                                | 28.3                                   | 39.4                            | 1,880  | 12.1                                | 27.5                                   | 35.7                            | 5,628  |
| Worked in past but currently not working | 11.6                                | 29.8                                   | 36.1                            | 1,255  | 10.9                                | 36.9                                   | 42.0                            | 4,426  | 11.1                                | 35.3                                   | 40.7                            | 5,681  |
| Never worked                             | 9.8                                 | 26.2                                   | 38.7                            | 2,935  | 6.6                                 | 38.6                                   | 44.4                            | 3,391  | 8.0                                 | 33.3                                   | 42.0                            | 6,326  |
| MPCE quintile                            |                                     |                                        |                                 |        |                                     |                                        |                                 |        |                                     |                                        |                                 |        |
| Poorest                                  | 13.8                                | 22.6                                   | 29.6                            | 1,113  | 15.0                                | 34.0                                   | 36.0                            | 1,489  | 14.5                                | 29.5                                   | 33.5                            | 2,602  |
| Poorer                                   | 13.7                                | 24.7                                   | 32.0                            | 1,350  | 11.8                                | 35.3                                   | 40.7                            | 1,796  | 12.6                                | 30.8                                   | 37.1                            | 3,146  |
| Middle                                   | 9.6                                 | 29.2                                   | 33.8                            | 1,610  | 11.0                                | 34.9                                   | 41.2                            | 1,981  | 10.4                                | 32.5                                   | 38.1                            | 3,591  |
| Richer                                   | 10.0                                | 28.8                                   | 35.6                            | 1,824  | 7.4                                 | 39.0                                   | 42.8                            | 2,165  | 8.5                                 | 34.7                                   | 39.7                            | 3,989  |
| Richest                                  | 8.0                                 | 28.7                                   | 44.4                            | 2,041  | 6.3                                 | 34.9                                   | 49.3                            | 2,266  | 7.0                                 | 32.1                                   | 47.0                            | 4,307  |
| Total                                    | 10.7                                | 27.2                                   | 35.8                            | 7,938  | 10.0                                | 35.8                                   | 42.3                            | 9,697  | 10.3                                | 32.1                                   | 39.5                            | 17,635 |

Note

\* Including spouse irrespective of age.

<sup>1</sup> Untreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently not taking treatment.

<sup>2</sup> Undertreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently taking treatment.

<sup>3</sup> Adequately treated hypertension refers to those who reported that they have been diagnosed with hypertension by health professional and currently taking treatment and whose measured systolic blood pressure was < 140 mmHg and diastolic blood pressure was < 90 mmHg.

Untreated, undertreated and adequately treated hypertension is calculated among those who reported that they have been diagnosed with hypertension.

**Table 9.10 Percentage of older adults with untreated, undertreated and adequately treated hypertension, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*                          |                                        |                                 |              | Age ≥ 60                            |                                        |                                 |              | Total                               |                                        |                                 |
|-----------------------|-------------------------------------|----------------------------------------|---------------------------------|--------------|-------------------------------------|----------------------------------------|---------------------------------|--------------|-------------------------------------|----------------------------------------|---------------------------------|
|                       | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number       | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number       | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> |
| <b>India</b>          | <b>10.7</b>                         | <b>27.2</b>                            | <b>35.8</b>                     | <b>7,938</b> | <b>10.0</b>                         | <b>35.8</b>                            | <b>42.3</b>                     | <b>9,697</b> | <b>10.3</b>                         | <b>32.1</b>                            | <b>39.5</b>                     |
| <b>North</b>          |                                     |                                        |                                 |              |                                     |                                        |                                 |              |                                     |                                        |                                 |
| Chandigarh            | 14.3                                | 30.2                                   | 39.3                            | 167          | 7.0                                 | 26.9                                   | 59.6                            | 173          | 10.5                                | 28.5                                   | 49.8                            |
| Delhi                 | 12.3                                | 22.0                                   | 29.8                            | 206          | 7.4                                 | 48.1                                   | 32.4                            | 202          | 9.8                                 | 35.3                                   | 31.1                            |
| Haryana               | 10.3                                | 19.7                                   | 28.9                            | 296          | 13.0                                | 24.5                                   | 37.2                            | 300          | 11.8                                | 22.3                                   | 33.3                            |
| Himachal Pradesh      | 20.3                                | 26.6                                   | 27.5                            | 193          | 22.2                                | 41.4                                   | 25.5                            | 206          | 21.4                                | 34.8                                   | 26.4                            |
| Jammu & Kashmir       | 7.0                                 | 39.1                                   | 42.2                            | 234          | 10.5                                | 42.2                                   | 43.6                            | 291          | 9.1                                 | 41.0                                   | 43.0                            |
| Punjab                | 12.5                                | 38.0                                   | 37.0                            | 329          | 9.1                                 | 48.4                                   | 35.1                            | 395          | 10.6                                | 43.8                                   | 35.9                            |
| Rajasthan             | 11.5                                | 20.3                                   | 32.0                            | 240          | 14.0                                | 27.4                                   | 38.8                            | 308          | 12.9                                | 24.4                                   | 35.9                            |
| Uttarakhand           | 20.6                                | 18.0                                   | 34.2                            | 170          | 19.0                                | 30.2                                   | 30.6                            | 167          | 19.8                                | 24.4                                   | 32.3                            |
| <b>Central</b>        |                                     |                                        |                                 |              |                                     |                                        |                                 |              |                                     |                                        |                                 |
| Chhattisgarh          | 9.4                                 | 32.3                                   | 28.3                            | 154          | 13.4                                | 34.5                                   | 40.8                            | 142          | 11.4                                | 33.3                                   | 34.4                            |
| Madhya Pradesh        | 9.8                                 | 21.3                                   | 32.4                            | 255          | 11.7                                | 30.3                                   | 41.3                            | 268          | 10.8                                | 26.0                                   | 37.0                            |
| Uttar Pradesh         | 11.5                                | 14.7                                   | 34.6                            | 401          | 12.7                                | 27.0                                   | 38.8                            | 411          | 12.1                                | 21.1                                   | 36.8                            |
| <b>East</b>           |                                     |                                        |                                 |              |                                     |                                        |                                 |              |                                     |                                        |                                 |
| Bihar                 | 10.4                                | 14.6                                   | 25.5                            | 327          | 16.6                                | 29.1                                   | 28.7                            | 424          | 14.1                                | 23.3                                   | 27.4                            |
| Jharkhand             | 13.5                                | 29.6                                   | 27.2                            | 191          | 19.7                                | 36.0                                   | 31.8                            | 269          | 17.2                                | 33.4                                   | 30.0                            |
| Odisha                | 14.5                                | 24.1                                   | 33.5                            | 210          | 7.6                                 | 31.0                                   | 42.4                            | 311          | 10.4                                | 28.3                                   | 38.9                            |
| West Bengal           | 12.9                                | 33.0                                   | 33.9                            | 497          | 8.9                                 | 47.1                                   | 33.8                            | 545          | 10.8                                | 40.4                                   | 33.9                            |
| <b>Northeast</b>      |                                     |                                        |                                 |              |                                     |                                        |                                 |              |                                     |                                        |                                 |
| Arunachal Pradesh     | 37.2                                | 17.9                                   | 11.4                            | 135          | 26.0                                | 15.8                                   | 9.9                             | 71           | 33.6                                | 17.2                                   | 10.9                            |
| Assam                 | 19.2                                | 28.9                                   | 23.3                            | 311          | 16.3                                | 43.3                                   | 29.9                            | 271          | 17.8                                | 35.6                                   | 26.4                            |
| Manipur               | 29.3                                | 25.0                                   | 28.3                            | 138          | 12.6                                | 34.1                                   | 41.3                            | 151          | 19.9                                | 30.1                                   | 35.6                            |
| Meghalaya             | 11.5                                | 33.3                                   | 39.7                            | 97           | 4.8                                 | 51.5                                   | 31.5                            | 132          | 7.7                                 | 43.7                                   | 35.0                            |
| Mizoram               | 29.6                                | 24.2                                   | 15.2                            | 111          | 25.4                                | 25.2                                   | 29.0                            | 143          | 27.1                                | 24.8                                   | 23.4                            |
| Nagaland              | 27.2                                | 54.7                                   | 4.5                             | 68           | 24.9                                | 49.0                                   | 13.7                            | 78           | 26.1                                | 51.9                                   | 9.1                             |
| Tripura               | 16.4                                | 28.1                                   | 31.7                            | 152          | 14.2                                | 30.9                                   | 44.6                            | 140          | 15.3                                | 29.6                                   | 38.3                            |
| <b>West</b>           |                                     |                                        |                                 |              |                                     |                                        |                                 |              |                                     |                                        |                                 |
| Dadra & Nagar Haveli  | 8.0                                 | 29.9                                   | 40.3                            | 70           | 13.3                                | 34.1                                   | 35.6                            | 75           | 10.8                                | 32.1                                   | 37.8                            |
| Daman & Diu           | 11.7                                | 31.6                                   | 36.0                            | 126          | 7.2                                 | 41.0                                   | 45.0                            | 163          | 9.2                                 | 36.8                                   | 41.0                            |
| Goa                   | [3.0]                               | 32.6                                   | 59.3                            | 180          | [0.4]                               | 42.9                                   | 54.7                            | 323          | 1.3                                 | 39.3                                   | 56.3                            |
| Gujarat               | 15.1                                | 21.2                                   | 31.2                            | 229          | 17.3                                | 32.1                                   | 42.8                            | 275          | 16.3                                | 27.4                                   | 37.9                            |
| Maharashtra           | 6.4                                 | 34.6                                   | 41.4                            | 363          | 6.8                                 | 34.0                                   | 54.7                            | 579          | 6.7                                 | 34.2                                   | 50.2                            |

continued

continued

| State/Union Territory     | Age 45-59*                          |                                        |                                 |        |                                     | Age ≥ 60                               |                                 |        |                                     |                                        | Total                           |        |
|---------------------------|-------------------------------------|----------------------------------------|---------------------------------|--------|-------------------------------------|----------------------------------------|---------------------------------|--------|-------------------------------------|----------------------------------------|---------------------------------|--------|
|                           | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number | Untreated hypertension <sup>1</sup> | Undertreated hypertension <sup>2</sup> | Adequately treated <sup>3</sup> | Number |
| <b>South</b>              |                                     |                                        |                                 |        |                                     |                                        |                                 |        |                                     |                                        |                                 |        |
| Andaman & Nicobar Islands | 12.3                                | 45.0                                   | 25.5                            | 215    | 12.2                                | 46.1                                   | 35.9                            | 212    | 12.2                                | 45.5                                   | 30.9                            | 427    |
| Andhra Pradesh            | 5.1                                 | 38.6                                   | 45.6                            | 335    | 3.9                                 | 46.0                                   | 46.4                            | 394    | 4.4                                 | 42.7                                   | 46.0                            | 729    |
| Karnataka                 | 6.7                                 | 32.6                                   | 45.2                            | 197    | 4.5                                 | 37.1                                   | 51.7                            | 296    | 5.4                                 | 35.3                                   | 49.1                            | 493    |
| Kerala                    | 17.7                                | 30.1                                   | 39.6                            | 316    | 7.0                                 | 47.0                                   | 44.1                            | 579    | 10.4                                | 41.6                                   | 42.7                            | 895    |
| Lakshadweep               | 17.5                                | 45.2                                   | 31.0                            | 177    | 13.9                                | 58.6                                   | 22.0                            | 226    | 15.4                                | 53.0                                   | 25.8                            | 403    |
| Puducherry                | 5.2                                 | 30.9                                   | 50.7                            | 188    | 3.1                                 | 31.8                                   | 61.2                            | 263    | 3.9                                 | 31.4                                   | 57.2                            | 451    |
| Tamil Nadu                | 10.7                                | 31.2                                   | 39.2                            | 406    | 7.7                                 | 37.9                                   | 41.3                            | 525    | 8.9                                 | 35.1                                   | 40.4                            | 931    |
| Telangana                 | 4.0                                 | 33.2                                   | 51.6                            | 254    | 6.5                                 | 38.8                                   | 50.3                            | 389    | 5.5                                 | 36.6                                   | 50.8                            | 643    |

Note

\* Including spouse irrespective of age. “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

<sup>1</sup> Untreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently not taking treatment.

<sup>2</sup> Undertreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently taking treatment.

<sup>3</sup> Adequately treated hypertension refers to those who reported that they have been diagnosed with hypertension by health professional and currently taking treatment and whose measured systolic blood pressure was < 140 mmHg and diastolic blood pressure was < 90 mmHg.

Untreated, undertreated and adequately treated hypertension is calculated among those who reported that they have been diagnosed with hypertension.

## 9.2 LUNG FUNCTION

Ageing is closely associated with declining lung health. The respiratory system undergoes various anatomical, physiological, and immunological changes as we age. The variability in physiological measurements is much greater among healthy older adults and the elderly than among younger individuals, making it a challenge to establish a 'normal' range for older adults (Sharma and Goodwin, 2006). In the LASI, a lung function test (also called a pulmonary function test) was conducted using the 'Thor' spirometry handheld device, which measures the volume of air that can be inhaled and exhaled and the maximum speed with which it can be removed. This is the basic tool that measures lung health and is the gold standard diagnostic test for asthma and chronic obstructive pulmonary disease (COPD) (American Lung Association, 2017). Spirometry tests were conducted using the American Thoracic Society/European Respiratory Society 2005 guidelines (Miller et al., 2005). Details of the procedure are given in Appendix 3B.

### Lung function test: outcome measures from spirometry

- **Forced Vital Capacity (FVC)** is the total volume of air exhaled in a forced expiratory manoeuvre after maximal inspiration. FVC is useful for detecting restrictive lung disease because lower than expected results may be a sign that the lungs cannot inflate as fully as normal; for example, FVC is reduced in people with obstructive and restrictive disorders. FVC is presented as percentage predicted FVC (% predicted FVC), which is obtained as:  $\% \text{ predicted FVC} = (\text{absolute value of FVC} / \text{predicted value of FVC}) \times 100$
- **Forced Expiratory Volume at One Second (FEV<sub>1</sub>)** is the amount of air that a person breathes out during the first second of a forced expiratory manoeuvre. FEV<sub>1</sub> is reduced in people with asthma and COPD. FEV<sub>1</sub> is presented as percentage predicted FEV<sub>1</sub> (% predicted FEV<sub>1</sub>), which is obtained as:  $\% \text{ predicted FEV}_1 = (\text{absolute value of FEV}_1 / \text{predicted value of FEV}_1) \times 100$
- **Peak Expiratory Flow Rate (PEFR)** is a person's maximum speed of air expiration, expressed as litre per second (L/s).
- **Forced Expiratory Flow 25–75% (FEF<sub>25-75</sub>)** is the mean forced expiratory airflow between the 25% and 75% of the FVC. FEF<sub>25-75</sub> is presented as percentage predicted FEF<sub>25-75</sub>, which is obtained as:  $\% \text{ predicted FEF}_{25-75} = (\text{absolute value of FEF}_{25-75} / \text{predicted value of FEF}_{25-75}) \times 100$
- **Forced Expiratory Time (FET)** is the time taken for an individual to forcefully exhale air through an open mouth from total lung capacity until airflow becomes inaudible.
- **FEV<sub>1</sub> to FVC ratio (FEV<sub>1</sub>/FVC)** is the most sensitive and specific index of airway obstruction measured using a spirometer. It is obtained by dividing the FEV<sub>1</sub> by the FVC and is usually expressed as a percentage value (i.e.  $100 \text{ FEV}_1 / \text{FVC} \times 100$ ).

### 9.2.1 Number of spirometry tests conducted in LASI

Table 9.11 provides the number of spirometry test conducted and the number of cases used to obtain outcome measures based on spirometry test. The estimates of lung function tests presented in this section are subject to the following limitations and therefore the results should be used with caution.

- The below criteria is used to determine acceptability of the test to evaluate state of lung health:
  - Forced expiratory time of minimum three seconds or at least one second plateau is taken into consideration.
  - Repeatability norm of forced vital capacity and forced expiratory volume at one second are relaxed.
  - Parameter value of at least one acceptable spirometry trial is assessed.
- A notable proportion of LASI respondents particularly elderly in age 60 and above either did not participate in the test due to contraindications such as upper respiratory tract infection, eye surgery, abdominal surgery, myocardial infarction, unable to open mouth sufficiently to hold mouthpiece, etc. or could not successfully complete the test due to poor efforts, discontinued exhalation, multiple blows, cough during test, air leak due to partial or full edentulism, etc

**Table 9.11 Number of spirometry tests conducted among older adults age 45 and above, India, LASI Wave 1, 2017-18**

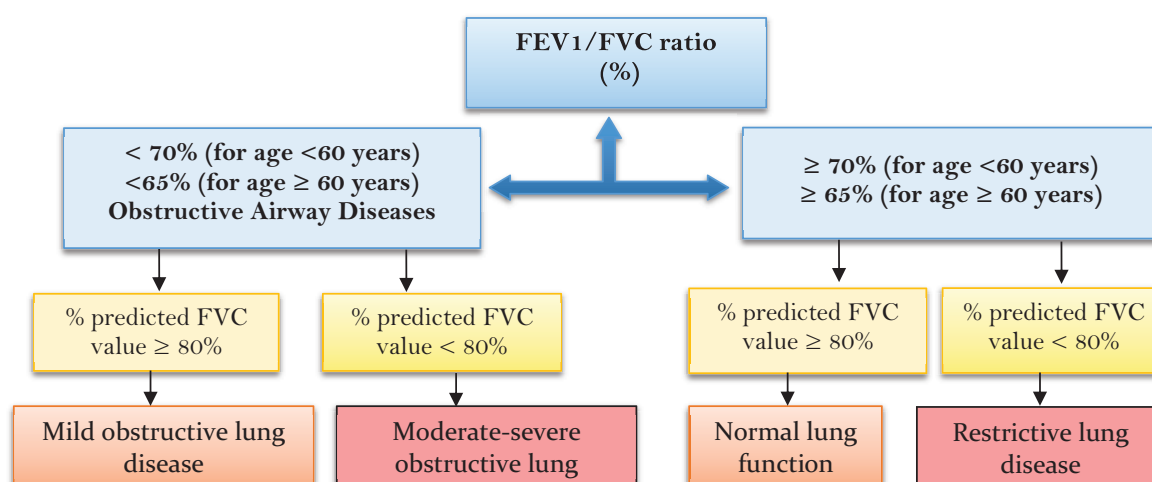
| Description                                                                                                                                                                                                                            | Number of cases |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Number of spirometry tests performed                                                                                                                                                                                                   | 55,188          |
| Number of usable spirometry tests <sup>1</sup> to assess mean values of % predicted FEV1 & absolute value of PEF                                                                                                                       | 41,218          |
| Number of acceptable spirometry tests <sup>2</sup> to assess mean values of % predicted FVC, % predicted FEV25-75, absolute value of FEV1/FVC(%) and to determine normal PFT & prevalence of restrictive and obstructive lung diseases | 34,173          |

#### Notes

<sup>1</sup>Usable spirometry test refers to the acceptability and unacceptability of the test results due to the reasons such as exhalation time less than three seconds and no one second plateau achieved; abrupt stop after one second/ glottis closure after one second/ no smooth exhalation; FIVC >FVC by more than 200ml; air Leak; no FIVC.

<sup>2</sup>Acceptable spirometry test refers to the test in which the following criteria are met: both the graphs flow-volume (FV) and volume-time (VT) start from zero point; blow is immediate, hard and fast without any delay; a sharp peak is obtained; exhalation is long without stopping in between; there is no cough or abrupt stop; exhalation is for minimum three seconds or until one second plateau is achieved; the second deep inhalation is within the zero starting point..

**Chart 9.2: The outcome measures obtained based on spirometry test, LASI Wave 1, 2017–18**





### **9.2.2 Measures of lung function**

The mean of % predicted FEV1 and mean of absolute PEF value according to background characteristics are presented in Table 9.12. The mean of % predicted FEV1 is higher among older adult women age 45 and above (81%) than older adult men age 45 and above (76%). On the contrary, the mean of absolute PEF is higher in older adult men age 45 and above (5 L/s) than older adult women age 45 and above (4 L/s). The mean of % predicted FEV1 is slightly higher among older adult men age 45-59 (77%) than elderly men age 60 and above (76%). Conversely, the mean of % predicted FEV1 is higher among elderly women 60 and above (83%) than older adult women age 45-59 (81%). The mean of % predicted FEV1 is higher among older adult men and women age 45 and above residing in rural areas (77% and 82%, respectively) than among older adult men and women age 45 and above residing in urban areas (74% and 79%, respectively). The elderly men and women age 60 and above have lower mean of absolute PEF (5 L/s and 4 L/s, respectively) than older adult men and women age 45-59 (6 L/s and 4 L/s, respectively). The mean of absolute PEF value increases with educational attainment and does not vary much by place of residence among older adult men and women age 45 and above.

The mean of % predicted FEV1 and mean of absolute PEF value vary widely across states/UTs (Table 9.13). For elderly men age 60 and above, the mean of % predicted FEV1 ranges from 90% in Jammu & Kashmir to 67% in Lakshadweep; for elderly women age 60 and above, it ranges from 106% in Nagaland to 70% in Puducherry. The mean of absolute PEF value for elderly men and women age 60 and above is higher in Nagaland (6 L/s and 5 L/s respectively) and lower in Rajasthan (4 L/s and 3 L/s respectively).

**Table 9.12 Mean values of lung function parameters (% predicted FEV1 & PEF) among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics         | Male                          |                            |        |                               |                            |        | Female                        |                            |        |                               |                            |        |
|------------------------------------|-------------------------------|----------------------------|--------|-------------------------------|----------------------------|--------|-------------------------------|----------------------------|--------|-------------------------------|----------------------------|--------|
|                                    | Age 45-59*                    |                            |        | Age ≥ 60                      |                            |        | Age 45-59*                    |                            |        | Age ≥ 60                      |                            |        |
|                                    | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number |
| <b>Place of residence</b>          |                               |                            |        |                               |                            |        |                               |                            |        |                               |                            |        |
| Rural                              | 77.5                          | 5.8                        | 6,757  | 76.5                          | 4.8                        | 5,670  | 77.1                          | 5.3                        | 12,427 | 81.5                          | 4.4                        | 10,145 |
| Urban                              | 74.3                          | 5.8                        | 3,543  | 74.1                          | 4.9                        | 2,626  | 74.2                          | 5.4                        | 6,169  | 78.4                          | 4.3                        | 5,528  |
| <b>Marital status</b>              |                               |                            |        |                               |                            |        |                               |                            |        |                               |                            |        |
| Currently married                  | 76.7                          | 5.9                        | 9,617  | 76.1                          | 4.9                        | 7,001  | 76.4                          | 5.4                        | 16,618 | 80.8                          | 4.4                        | 13,203 |
| Widowed                            | 75.2                          | 5.5                        | 323    | 74.6                          | 4.5                        | 1,120  | 74.7                          | 4.7                        | 1,443  | 78.8                          | 4.2                        | 1,987  |
| Divorced/Separated/Deserted/Others | 75.2                          | 5.7                        | 360    | 77.5                          | 4.4                        | 175    | 76.2                          | 5.2                        | 535    | 80.1                          | 4.3                        | 483    |
| <b>Living arrangement</b>          |                               |                            |        |                               |                            |        |                               |                            |        |                               |                            |        |
| Living alone                       | 77.6                          | 5.8                        | 154    | 75.4                          | 4.5                        | 183    | 76.1                          | 4.9                        | 337    | 77.0                          | 4.1                        | 298    |
| Living with spouse and/or others   | 75.0                          | 5.6                        | 1,023  | 75.8                          | 4.7                        | 1,981  | 75.5                          | 5.0                        | 3,004  | 79.5                          | 4.2                        | 1,718  |
| Living with spouse and children    | 76.9                          | 5.9                        | 8,443  | 76.2                          | 4.9                        | 4,945  | 76.6                          | 5.5                        | 13,388 | 81.0                          | 4.4                        | 11,234 |
| Living with children and others    | 76.2                          | 5.5                        | 409    | 75.1                          | 4.5                        | 952    | 75.4                          | 4.7                        | 1,361  | 79.0                          | 4.2                        | 2,050  |
| Living with others only            | 73.6                          | 5.8                        | 271    | 74.7                          | 4.4                        | 235    | 74.2                          | 5.0                        | 506    | 84.5                          | 4.4                        | 373    |
| <b>Religion</b>                    |                               |                            |        |                               |                            |        |                               |                            |        |                               |                            |        |
| Hindu                              | 76.5                          | 5.8                        | 7,439  | 76.0                          | 4.8                        | 5,881  | 76.3                          | 5.3                        | 13,320 | 80.2                          | 4.3                        | 11,221 |
| Muslim                             | 77.7                          | 5.9                        | 1,090  | 76.8                          | 4.9                        | 927    | 77.3                          | 5.4                        | 2,017  | 83.5                          | 4.5                        | 1,805  |
| Christian                          | 75.5                          | 6.1                        | 1,216  | 74.7                          | 4.9                        | 950    | 75.2                          | 5.6                        | 2,166  | 77.9                          | 4.4                        | 1,814  |
| Others                             | 76.0                          | 5.8                        | 555    | 71.9                          | 4.6                        | 538    | 73.9                          | 5.2                        | 1,093  | 80.4                          | 4.3                        | 833    |
| <b>Caste/tribe</b>                 |                               |                            |        |                               |                            |        |                               |                            |        |                               |                            |        |
| Scheduled tribe                    | 77.1                          | 5.9                        | 2,017  | 77.4                          | 5.0                        | 1,449  | 77.2                          | 5.5                        | 3,466  | 80.7                          | 4.5                        | 2,886  |
| Scheduled caste                    | 76.1                          | 5.7                        | 1,771  | 74.9                          | 4.7                        | 1,377  | 75.5                          | 5.2                        | 3,148  | 81.5                          | 4.4                        | 2,779  |
| Other backward class               | 75.9                          | 5.7                        | 3,678  | 75.9                          | 4.8                        | 2,964  | 75.9                          | 5.3                        | 6,642  | 79.6                          | 4.2                        | 5,519  |
| None of the above                  | 77.9                          | 6.1                        | 2,834  | 76.2                          | 4.9                        | 2,506  | 77.1                          | 5.5                        | 5,340  | 81.5                          | 4.5                        | 4,489  |
| <b>Education</b>                   |                               |                            |        |                               |                            |        |                               |                            |        |                               |                            |        |
| No schooling                       | 76.3                          | 5.5                        | 2,607  | 75.8                          | 4.6                        | 2,778  | 76.0                          | 5.0                        | 5,385  | 81.5                          | 4.3                        | 7,337  |
| Less than 5 years complete         | 76.8                          | 5.9                        | 1,287  | 73.6                          | 4.7                        | 1,176  | 75.1                          | 5.2                        | 2,463  | 78.4                          | 4.3                        | 1,532  |
| 5-9 years complete                 | 75.9                          | 5.8                        | 3,238  | 76.3                          | 4.9                        | 2,259  | 76.1                          | 5.4                        | 5,497  | 79.9                          | 4.4                        | 4,026  |
| 10 or more years complete          | 77.5                          | 6.2                        | 3,168  | 77.0                          | 5.1                        | 2,083  | 77.3                          | 5.7                        | 5,251  | 79.8                          | 4.6                        | 2,778  |

continued

**continued**

| Background characteristics               | Male                          |                   |        |                               |                   |        | Female                        |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |
|------------------------------------------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|
|                                          | Age 45-59*                    |                   |        | Age ≥ 60                      |                   |        | Total                         |                   |        | Age 45-59*                    |                   |        | Age ≥ 60                      |                   |        | Total                         |                   |        |
|                                          | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number |
| <b>Work status</b>                       |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |
| Currently working                        | 77.0                          | 5.9               | 9,197  | 77.5                          | 5.0               | 3,934  | 77.2                          | 5.6               | 13,131 | 79.5                          | 4.3               | 6,459  | 84.4                          | 3.8               | 1,586  | 80.5                          | 4.2               | 8,045  |
| Worked in past but currently not working | 71.6                          | 5.4               | 786    | 74.1                          | 4.6               | 3,959  | 73.7                          | 4.7               | 4,745  | 80.0                          | 4.2               | 1,766  | 79.1                          | 3.4               | 2,012  | 79.5                          | 3.8               | 3,778  |
| Never worked                             | 76.9                          | 5.9               | 317    | 77.3                          | 4.7               | 403    | 77.1                          | 5.2               | 720    | 81.7                          | 4.4               | 7,448  | 84.8                          | 3.6               | 3,351  | 82.8                          | 4.1               | 10,799 |
| <b>MPCE quintile</b>                     |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |
| Poorest                                  | 76.0                          | 5.7               | 1,932  | 76.1                          | 4.7               | 1,608  | 76.0                          | 5.2               | 3,540  | 79.6                          | 4.2               | 2,886  | 83.8                          | 3.6               | 1,391  | 81.2                          | 4.0               | 4,277  |
| Poorer                                   | 76.7                          | 5.7               | 2,045  | 75.8                          | 4.8               | 1,671  | 76.2                          | 5.3               | 3,716  | 81.5                          | 4.4               | 3,119  | 85.5                          | 3.6               | 1,407  | 82.9                          | 4.1               | 4,526  |
| Middle                                   | 76.3                          | 5.9               | 2,040  | 76.5                          | 4.8               | 1,702  | 76.4                          | 5.4               | 3,742  | 81.1                          | 4.4               | 3,105  | 80.5                          | 3.5               | 1,483  | 80.9                          | 4.1               | 4,588  |
| Richer                                   | 76.1                          | 5.9               | 2,136  | 75.6                          | 4.8               | 1,704  | 75.9                          | 5.4               | 3,840  | 79.9                          | 4.3               | 3,270  | 82.8                          | 3.6               | 1,377  | 80.9                          | 4.1               | 4,647  |
| Richest                                  | 78.0                          | 6.1               | 2,147  | 75.6                          | 4.8               | 1,611  | 76.9                          | 5.5               | 3,758  | 80.6                          | 4.4               | 3,293  | 81.4                          | 3.6               | 1,291  | 80.8                          | 4.2               | 4,584  |
| Total                                    | 76.6                          | 5.8               | 10,300 | 75.9                          | 4.8               | 8,296  | 76.3                          | 5.4               | 18,596 | 80.6                          | 4.4               | 15,673 | 82.9                          | 3.6               | 6,949  | 81.4                          | 4.1               | 22,622 |

## Notes

\* Including spouse irrespective of age.

$$\% \text{ predicted FEV1} = \frac{\text{Percent predicted forced expiratory volume at 1 second} \times (\text{absolute value of FEV1 (in L)} / \text{predicted value of FEV1 (in L)})}{100}$$
<sup>2</sup> PEFR—Absolute value of peak expiratory flow rate (in L/s).

**Table 9.13 Mean values of lung function parameters (% predicted FEV1 and absolute PEFR) among older adult male and female, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Male                          |                            |               |                               |                            |              | Female                        |                            |               |                               |                            |               |
|-----------------------|-------------------------------|----------------------------|---------------|-------------------------------|----------------------------|--------------|-------------------------------|----------------------------|---------------|-------------------------------|----------------------------|---------------|
|                       | Age 45-59*                    |                            |               | Age ≥ 60                      |                            |              | Age 45-59*                    |                            |               | Age ≥ 60                      |                            |               |
|                       | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number        | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number       | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number        | % predicted FEV1 <sup>1</sup> | Absolute PEFR <sup>2</sup> | Number        |
| <b>India</b>          | <b>76.6</b>                   | <b>5.8</b>                 | <b>10,300</b> | <b>75.9</b>                   | <b>4.8</b>                 | <b>8,296</b> | <b>76.3</b>                   | <b>5.4</b>                 | <b>18,596</b> | <b>80.6</b>                   | <b>4.4</b>                 | <b>15,673</b> |
| <b>North</b>          |                               |                            |               |                               |                            |              |                               |                            |               |                               |                            |               |
| Chandigarh            | 73.6                          | 5.7                        | 171           | 70.7                          | 4.6                        | 115          | 72.4                          | 5.3                        | 286           | 81.4                          | 4.2                        | 254           |
| Delhi                 | 75.6                          | 5.3                        | 169           | 73.0                          | [4.5]                      | 92           | 74.7                          | 5.0                        | 261           | 80.4                          | 4.2                        | 214           |
| Haryana               | 74.3                          | 4.9                        | 194           | 74.4                          | 4.4                        | 134          | 74.3                          | 4.7                        | 328           | 77.9                          | 3.7                        | 216           |
| Himachal Pradesh      | 81.5                          | 6.4                        | 203           | 78.5                          | 5.1                        | 205          | 79.9                          | 5.7                        | 408           | 89.9                          | 4.9                        | 409           |
| Jammu & Kashmir       | 90.0                          | 7.0                        | 223           | 89.6                          | 5.4                        | 217          | 89.8                          | 6.2                        | 440           | 89.1                          | 4.7                        | 341           |
| Punjab                | 77.0                          | 5.9                        | 350           | 72.9                          | 4.6                        | 385          | 74.9                          | 5.2                        | 735           | 82.3                          | 4.4                        | 575           |
| Rajasthan             | 71.9                          | 4.8                        | 186           | 71.2                          | 3.8                        | 167          | 71.5                          | 4.3                        | 353           | 78.9                          | 3.4                        | 234           |
| Uttarakhand           | 79.3                          | 6.0                        | 200           | 74.9                          | 4.7                        | 233          | 76.9                          | 5.3                        | 433           | 81.6                          | 4.3                        | 406           |
| <b>Central</b>        |                               |                            |               |                               |                            |              |                               |                            |               |                               |                            |               |
| Chhattisgarh          | 78.6                          | 5.9                        | 242           | 77.8                          | 4.8                        | 171          | 78.3                          | 5.4                        | 413           | 77.3                          | 4.1                        | 267           |
| Madhya Pradesh        | 76.9                          | 6.1                        | 358           | 78.6                          | 5.3                        | 255          | 77.6                          | 5.8                        | 613           | 79.9                          | 4.5                        | 364           |
| Uttar Pradesh         | 78.4                          | 5.8                        | 650           | 73.3                          | 4.6                        | 604          | 75.8                          | 5.2                        | 1,254         | 84.8                          | 4.4                        | 854           |
| <b>East</b>           |                               |                            |               |                               |                            |              |                               |                            |               |                               |                            |               |
| Bihar                 | 80.1                          | 5.8                        | 393           | 83.3                          | 4.9                        | 456          | 81.9                          | 5.3                        | 849           | 94.0                          | 4.6                        | 599           |
| Jharkhand             | 74.5                          | 5.9                        | 402           | 75.3                          | 5.0                        | 507          | 75.0                          | 5.4                        | 909           | 80.9                          | 4.7                        | 735           |
| Odisha                | 74.2                          | 6.2                        | 561           | 74.9                          | 5.2                        | 386          | 74.5                          | 5.8                        | 947           | 74.7                          | 4.5                        | 845           |
| West Bengal           | 78.3                          | 6.3                        | 729           | 80.0                          | 5.4                        | 558          | 79.1                          | 5.9                        | 1,287         | 84.5                          | 4.9                        | 1,192         |
| <b>Northeast</b>      |                               |                            |               |                               |                            |              |                               |                            |               |                               |                            |               |
| Arunachal Pradesh     | 80.8                          | 6.1                        | 321           | 82.0                          | 4.4                        | 138          | 81.2                          | 5.6                        | 459           | 90.6                          | 4.7                        | 448           |
| Assam                 | 82.1                          | 6.5                        | 474           | 79.9                          | 5.4                        | 250          | 81.3                          | 6.1                        | 724           | 84.2                          | 4.8                        | 752           |
| Manipur               | 87.2                          | 7.0                        | 258           | 86.1                          | 5.7                        | 188          | 86.7                          | 6.4                        | 446           | 88.0                          | 5.3                        | 294           |
| Meghalaya             | 77.1                          | 6.5                        | 167           | 77.3                          | 5.2                        | 112          | 77.2                          | 6.0                        | 279           | 77.6                          | 4.7                        | 258           |
| Mizoram               | 83.2                          | 6.2                        | 236           | 83.8                          | 5.2                        | 191          | 83.5                          | 5.7                        | 427           | 93.8                          | 4.9                        | 350           |
| Nagaland              | 88.3                          | 7.6                        | 244           | 89.1                          | 6.0                        | 210          | 88.7                          | 6.8                        | 454           | 95.9                          | 5.5                        | 318           |
| Tripura               | 79.4                          | 6.0                        | 234           | 73.9                          | 4.6                        | 195          | 76.9                          | 5.3                        | 429           | 85.6                          | 4.6                        | 429           |
| <b>West</b>           |                               |                            |               |                               |                            |              |                               |                            |               |                               |                            |               |
| Dadra & Nagar Haveli  | 75.8                          | 6.1                        | 153           | 72.6                          | 4.8                        | 100          | 74.6                          | 5.6                        | 253           | 77.3                          | 4.3                        | 196           |
| Daman & Diu           | 77.1                          | 6.1                        | 111           | 71.7                          | [5.1]                      | 71           | 75.0                          | 5.7                        | 182           | 76.8                          | 4.6                        | 178           |
| Goa                   | 75.0                          | 5.9                        | 121           | 73.2                          | 4.7                        | 111          | 74.1                          | 5.3                        | 232           | 78.1                          | 4.2                        | 193           |
| Gujarat               | 78.0                          | 6.0                        | 264           | 71.5                          | 4.4                        | 161          | 75.2                          | 5.3                        | 425           | 77.8                          | 4.3                        | 352           |
| Maharashtra           | 76.2                          | 6.1                        | 570           | 75.1                          | 5.1                        | 535          | 75.6                          | 5.6                        | 1,105         | 73.9                          | 4.1                        | 1,007         |

continued

continued

| State/Union Territory     | Male                          |                   |        |                               |                   |        | Female                        |                   |        |                               |                   |        |                               |                   |        |      |     |       |
|---------------------------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|-------------------------------|-------------------|--------|------|-----|-------|
|                           | Age 45-59*                    |                   |        | Age ≥ 60                      |                   |        | Age 45-59*                    |                   |        | Age ≥ 60                      |                   |        |                               |                   |        |      |     |       |
|                           | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number | % predicted FEV1 <sup>1</sup> | PEFR <sup>2</sup> | Number |      |     |       |
| <b>South</b>              |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |                               |                   |        |      |     |       |
| Andaman & Nicobar Islands | 76.6                          | 6.5               | 250    | 74.9                          | 5.3               | 206    | 75.8                          | 6.0               | 456    | 78.3                          | 4.7               | 353    | 81.6                          | 4.1               | 165    | 79.4 | 4.5 | 518   |
| Andhra Pradesh            | 74.8                          | 6.2               | 371    | 71.6                          | 5.0               | 268    | 73.4                          | 5.7               | 639    | 76.4                          | 4.5               | 608    | 78.7                          | 3.9               | 179    | 76.9 | 4.4 | 787   |
| Karnataka                 | 76.0                          | 5.8               | 280    | 75.2                          | 4.8               | 207    | 75.6                          | 5.3               | 487    | 75.6                          | 4.1               | 415    | 72.9                          | 3.2               | 149    | 74.8 | 3.8 | 564   |
| Kerala                    | 73.1                          | 5.6               | 217    | 69.9                          | 4.3               | 172    | 71.7                          | 5.0               | 389    | 76.2                          | 3.9               | 339    | 77.0                          | [3.1]             | 146    | 76.5 | 3.6 | 485   |
| Lakshadweep               | 68.7                          | [5.1]             | 87     | 66.5                          | [4.2]             | 69     | 67.8                          | 4.7               | 156    | 71.2                          | 3.7               | 136    | 70.7                          | [3.2]             | 49     | 71.1 | 3.5 | 185   |
| Puducherry                | 65.8                          | 4.8               | 197    | 70.6                          | 4.3               | 126    | 67.8                          | 4.6               | 323    | 72.3                          | 3.7               | 317    | 70.1                          | [2.8]             | 124    | 71.6 | 3.4 | 441   |
| Tamil Nadu                | 69.1                          | 4.7               | 410    | 70.9                          | 3.9               | 306    | 69.9                          | 4.4               | 716    | 75.2                          | 3.6               | 716    | 82.9                          | 3.2               | 327    | 77.8 | 3.5 | 1,043 |
| Telangana                 | 76.0                          | 6.2               | 304    | 75.4                          | 5.3               | 195    | 75.7                          | 5.8               | 499    | 76.7                          | 4.6               | 509    | 79.4                          | 4.1               | 155    | 77.4 | 4.5 | 664   |

## Notes

\* Including spouse irrespective of age. "[1]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

% predicted FEV1– Percent predicted forced expiratory volume at 1 second = (absolute value of FEV1 (in L) / predicted value of FEV1 (in L)) \* 100. The predicted value of FEV1 is based on Global lung function initiative (GLI) equation 2012.

<sup>2</sup> PEFR—Absolute value of peak expiratory flow rate (in L/s).

Table 9.14 presents the mean of % predicted FVC, mean of % predicted FEF 25-75, and mean of absolute FEV1/FVC (%) according to background characteristics. For older adults age 45 and above, the mean of % predicted FVC, % predicted FEF 25-75, and absolute FEV1/FVC (%) are 81%, 77%, and 78% respectively, among men and 85%, 79%, and 80% respectively, among women. The mean of % predicted FVC is higher among elderly women age 60 and above (86%) than among older adult women age 45-59 (84%). Conversely, the mean of absolute FEV1/FVC (%) is higher among older adult men (79%) and women (81%) age 45-59 than among elderly men (76%) and women (79%) age 60 and above. Regardless of age group, men and women residing in rural areas have higher mean % predicted FVC than those residing in urban areas. The mean of absolute FEV1/FVC (%) among elderly men and women age 60 and above shows marginal variation by place of residence. The mean of % predicted FEF 25-75 is higher among elderly men & women age 60 and above in rural areas (79% and 85% respectively) than their urban counterparts (77% and 83% respectively).

Cross-state variations in the mean of % predicted FVC, % predicted FEF 25-75, and absolute FEV1/FVC (%) is presented in Table 9.15. Among elderly men age 60 and above, the mean of % predicted FVC ranges from 100% in Jammu & Kashmir to 73% in Kerala; the mean of % predicted FEF 25-75 ranges from 106% in Arunachal Pradesh to 63% in Gujarat and the mean of absolute FEV1/FVC (%) ranges from 84% in Arunachal Pradesh to 71% in Uttarakhand. Among elderly women age 60 and above, the mean of % predicted FVC is higher in Nagaland (107%) and is lowest in Karnataka (74%); the mean of % predicted FEF 25-75 ranges from 114% in Arunachal Pradesh to 62% in Puducherry and; the mean of absolute FEV1/FVC (%) ranges from 84% in Arunachal Pradesh and Meghalaya to 70% in Puducherry.

Table 9.14 Mean values of lung function parameters (% predicted FVC, % predicted FEF 25-75 and absolute FEV1/FVC (%)) for older adult male and female by background characteristics, India, LASI Wave 1, 2017-18

| Background characteristics | Male                                  |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    | Female                       |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                       |
|----------------------------|---------------------------------------|------------------------------------|-----------------------|--------|------------------------------|------------------------------------|------------------------------|------------------------------------|-----------------------|--------|------------------------------|------------------------------------|------------------------------|------------------------------------|-----------------------|--------|------------------------------|------------------------------------|------------------------------|------------------------------------|-----------------------|--------|------------------------------|------------------------------------|-----------------------|
|                            | Age 45-59*                            |                                    |                       |        |                              |                                    | Total                        |                                    |                       |        |                              |                                    | Age ≥ 60                     |                                    |                       |        |                              |                                    | Total                        |                                    |                       |        |                              |                                    |                       |
|                            | % predicted FVC <sup>1</sup>          | % predicted FEF 25-75 <sup>2</sup> | Absolute FEV1/FVC (%) | Number | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | Absolute FEV1/FVC (%) | Number | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | Absolute FEV1/FVC (%) | Number | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | Absolute FEV1/FVC (%) | Number | % predicted FVC <sup>1</sup> | % predicted FEF 25-75 <sup>2</sup> | Absolute FEV1/FVC (%) |
| Place of residence         | Rural                                 | 82.0                               | 75.9                  | 78.9   | 5,794                        | 81.8                               | 79.0                         | 75.6                               | 4,676                 | 81.9   | 77.3                         | 77.4                               | 10,470                       | 84.9                               | 77.2                  | 81.1   | 8,588                        | 86.9                               | 84.6                         | 79.0                               | 3,665                 | 85.5   | 79.6                         | 80.4                               | 12,253                |
|                            | Urban                                 | 78.3                               | 72.6                  | 79.0   | 2,927                        | 78.4                               | 77.4                         | 76.5                               | 2,152                 | 78.3   | 74.8                         | 77.8                               | 5,079                        | 82.4                               | 74.3                  | 80.9   | 4,504                        | 82.6                               | 82.6                         | 79.1                               | 1,867                 | 82.4   | 76.9                         | 80.3                               | 6,371                 |
|                            | Marital status                        |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                       |
|                            | Currently married                     | 81.1                               | 75.1                  | 79.0   | 8,150                        | 81.2                               | 78.7                         | 76.0                               | 5,800                 | 81.1   | 76.7                         | 77.7                               | 13,950                       | 84.4                               | 76.4                  | 81.1   | 11,061                       | 85.9                               | 84.0                         | 79.2                               | 2,894                 | 84.7   | 78.1                         | 80.7                               | 13,955                |
|                            | Widowed                               | 81.8                               | 73.0                  | 77.5   | 252                          | 78.7                               | 76.9                         | 74.7                               | 889                   | 79.3   | 76.1                         | 75.3                               | 1,141                        | 82.5                               | 76.0                  | 80.5   | 1,628                        | 85.6                               | 84.0                         | 78.7                               | 2,497                 | 84.5   | 81.1                         | 79.3                               | 4,125                 |
| Living arrangement         | Divorced/ Separated/ Deserted/ Others | 79.1                               | 73.7                  | 79.1   | 319                          | 82.3                               | 83.1                         | 76.3                               | 139                   | 80.4   | 77.4                         | 78.0                               | 458                          | 84.5                               | 77.1                  | 81.0   | 403                          | 82.0                               | 87.4                         | 80.2                               | 141                   | 83.8   | 80.0                         | 80.8                               | 544                   |
|                            | Living alone                          | 83.0                               | 73.3                  | 77.6   | 133                          | 77.8                               | 75.5                         | 74.9                               | 152                   | 79.6   | 74.7                         | 75.8                               | 285                          | 82.0                               | 70.3                  | 79.6   | 252                          | 87.3                               | 90.1                         | 79.4                               | 408                   | 85.6   | 83.7                         | 79.4                               | 660                   |
|                            | Living with spouse and/or others      | 80.0                               | 72.4                  | 78.1   | 870                          | 80.7                               | 78.6                         | 75.8                               | 1,628                 | 80.5   | 76.6                         | 76.5                               | 2,498                        | 83.2                               | 75.6                  | 80.5   | 1,465                        | 85.3                               | 81.6                         | 78.8                               | 920                   | 84.1   | 78.0                         | 79.8                               | 2,385                 |
|                            | Living with spouse and children       | 81.2                               | 75.4                  | 79.1   | 7,147                        | 81.5                               | 78.8                         | 76.0                               | 4,110                 | 81.3   | 76.7                         | 77.9                               | 11,257                       | 84.5                               | 76.5                  | 81.2   | 9,388                        | 86.2                               | 85.1                         | 79.5                               | 1,934                 | 84.8   | 78.0                         | 80.9                               | 11,322                |
|                            | Living with children and others       | 81.6                               | 74.6                  | 78.3   | 329                          | 78.9                               | 78.1                         | 75.3                               | 756                   | 79.6   | 77.2                         | 76.1                               | 1,085                        | 82.8                               | 76.9                  | 80.7   | 1,682                        | 85.0                               | 82.5                         | 78.5                               | 1,955                 | 84.1   | 80.2                         | 79.4                               | 3,637                 |
| Living with others only    | 78.8                                  | 72.0                               | 78.9                  | 242    | 81.2                         | 77.5                               | 73.7                         | 182                                | 80.0                  | 74.8   | 76.3                         | 424                                | 87.2                         | 80.1                               | 80.8                  | 305    | 85.3                         | 85.6                               | 79.4                         | 315                                | 86.2                  | 83.2   | 80.1                         | 620                                |                       |
| Religion                   | Hindu                                 | 81.0                               | 74.7                  | 78.9   | 6,234                        | 81.0                               | 78.3                         | 75.8                               | 4,790                 | 81.0   | 76.4                         | 77.4                               | 11,024                       | 83.9                               | 75.6                  | 80.9   | 9,287                        | 85.7                               | 83.7                         | 78.9                               | 3,937                 | 84.5   | 78.2                         | 80.3                               | 13,224                |
|                            | Muslim                                | 82.5                               | 76.9                  | 79.3   | 896                          | 82.0                               | 78.9                         | 75.2                               | 758                   | 82.2   | 77.9                         | 77.2                               | 1,654                        | 86.9                               | 81.3                  | 81.8   | 1,471                        | 87.8                               | 86.0                         | 79.0                               | 539                   | 87.1   | 82.7                         | 80.9                               | 2,010                 |
|                            | Christian                             | 78.6                               | 75.5                  | 80.1   | 1,097                        | 76.6                               | 82.4                         | 78.7                               | 829                   | 77.7   | 78.5                         | 79.5                               | 1,926                        | 81.4                               | 73.2                  | 80.9   | 1,619                        | 82.3                               | 81.3                         | 79.2                               | 672                   | 81.7   | 75.8                         | 80.4                               | 2,291                 |
|                            | Others                                | 80.4                               | 75.7                  | 78.7   | 494                          | 78.3                               | 80.2                         | 76.3                               | 451                   | 79.3   | 77.9                         | 77.5                               | 945                          | 84.1                               | 79.5                  | 81.6   | 715                          | 82.7                               | 86.8                         | 79.8                               | 384                   | 83.6   | 82.1                         | 81.0                               | 1,099                 |
|                            | Caste/tribe                           |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                              |                                    |                       |        |                              |                                    |                       |
| Scheduled tribe            | 81.8                                  | 75.8                               | 79.5                  | 1,744  | 81.5                         | 81.4                               | 77.2                         | 1,240                              | 81.7                  | 78.1   | 78.6                         | 2,984                              | 84.1                         | 73.8                               | 80.5                  | 2,436  | 86.7                         | 87.3                               | 79.6                         | 1,002                              | 84.9                  | 78.2   | 80.2                         | 3,438                              |                       |
| Scheduled caste            | 80.7                                  | 73.8                               | 78.6                  | 1,528  | 81.1                         | 78.6                               | 75.6                         | 1,125                              | 80.9                  | 76.0   | 77.2                         | 2,653                              | 84.5                         | 77.3                               | 81.3                  | 2,328  | 86.5                         | 81.6                               | 78.2                         | 913                                | 85.1                  | 78.5   | 80.4                         | 3,241                              |                       |
| Other backward class       | 80.8                                  | 74.6                               | 78.9                  | 2,972  | 80.3                         | 78.2                               | 75.9                         | 2,342                              | 80.6                  | 76.3   | 77.5                         | 5,314                              | 83.3                         | 76.4                               | 81.2                  | 4,456  | 85.4                         | 86.9                               | 79.8                         | 1,838                              | 83.9                  | 79.8   | 80.8                         | 6,294                              |                       |
| None of the above          | 81.3                                  | 76.1                               | 79.1                  | 2,477  | 81.4                         | 78.3                               | 75.5                         | 2,121                              | 81.3                  | 77.2   | 77.3                         | 4,598                              | 85.2                         | 76.6                               | 80.8                  | 3,872  | 85.3                         | 80.7                               | 78.2                         | 1,779                              | 85.2                  | 77.9   | 79.9                         | 5,651                              |                       |
| Education                  | No schooling                          | 81.0                               | 72.9                  | 78.4   | 2,165                        | 80.9                               | 79.0                         | 75.7                               | 2,218                 | 81.0   | 76.1                         | 77.0                               | 4,383                        | 84.7                               | 78.1                  | 81.2   | 6,007                        | 86.8                               | 85.5                         | 79.1                               | 3,645                 | 85.5   | 81.0                         | 80.4                               | 9,652                 |
|                            | Less than 5 years complete            | 81.2                               | 75.4                  | 78.9   | 1,079                        | 80.1                               | 75.7                         | 74.6                               | 964                   | 80.7   | 75.6                         | 76.7                               | 2,043                        | 82.5                               | 73.2                  | 80.5   | 1,320                        | 84.7                               | 80.0                         | 78.4                               | 594                   | 83.2   | 75.3                         | 79.8                               | 1,914                 |

continued



continued

| Background characteristics               | Male             |                        |                       |        |                  |                        |                  |                        |                       |        |                  |                        | Female           |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |
|------------------------------------------|------------------|------------------------|-----------------------|--------|------------------|------------------------|------------------|------------------------|-----------------------|--------|------------------|------------------------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|
|                                          | Age 45-59*       |                        |                       |        |                  |                        | Total            |                        |                       |        |                  |                        | Age ≥ 60         |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |
|                                          | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number |
| No schooling                             | 81.0             | 72.9                   | 78.4                  | 2,165  | 80.9             | 79.0                   | 75.7             | 2,218                  | 81.0                  | 76.1   | 77.0             | 4,383                  | 84.7             | 78.1                   | 81.2                  | 6,007  | 86.8             | 85.5                   | 79.1                  | 3,645  | 85.5             | 81.0                   | 80.4                  | 9,652  |
| Less than 5 years complete               | 81.2             | 75.4                   | 78.9                  | 1,079  | 80.1             | 75.7                   | 74.6             | 964                    | 80.7                  | 75.6   | 76.7             | 2,043                  | 82.5             | 73.2                   | 80.5                  | 1,320  | 84.7             | 80.0                   | 78.4                  | 594    | 83.2             | 75.3                   | 79.8                  | 1,914  |
| 5-9 years complete                       | 80.8             | 75.1                   | 79.0                  | 2,763  | 81.4             | 76.3                   | 75.5             | 1,881                  | 81.1                  | 75.6   | 77.5             | 4,644                  | 84.0             | 75.6                   | 81.1                  | 3,414  | 82.2             | 82.4                   | 79.3                  | 856    | 83.7             | 77.0                   | 80.7                  | 4,270  |
| 10 or more years complete                | 81.1             | 76.6                   | 79.4                  | 2,714  | 80.8             | 82.1                   | 76.9             | 1,765                  | 81.0                  | 78.9   | 78.4             | 4,479                  | 84.0             | 74.6                   | 80.8                  | 2,351  | 83.1             | 79.0                   | 78.1                  | 437    | 83.9             | 75.3                   | 80.4                  | 2,788  |
| Work status                              |                  |                        |                       |        |                  |                        |                  |                        |                       |        |                  |                        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |
| Currently working                        | 81.4             | 75.6                   | 79.1                  | 7,816  | 82.6             | 79.3                   | 76.4             | 3,271                  | 81.8                  | 76.8   | 78.2             | 11,087                 | 82.8             | 74.6                   | 81.0                  | 5,398  | 87.4             | 86.0                   | 79.5                  | 1,334  | 83.8             | 77.0                   | 80.7                  | 6,732  |
| Worked in past but currently not working | 76.4             | 68.3                   | 77.3                  | 647    | 78.8             | 77.5                   | 75.2             | 3,228                  | 78.5                  | 76.2   | 75.5             | 3,875                  | 83.3             | 77.4                   | 81.0                  | 1,446  | 82.8             | 80.4                   | 78.5                  | 1,579  | 83.0             | 79.0                   | 79.7                  | 3,025  |
| Never worked                             | 82.1             | 72.1                   | 77.7                  | 258    | 83.4             | 81.4                   | 75.5             | 329                    | 82.9                  | 77.8   | 76.3             | 587                    | 85.7             | 77.9                   | 81.1                  | 6,248  | 86.7             | 85.5                   | 79.0                  | 2,619  | 86.0             | 80.3                   | 80.4                  | 8,867  |
| MPCE quintile                            |                  |                        |                       |        |                  |                        |                  |                        |                       |        |                  |                        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |
| Poorest                                  | 80.0             | 74.1                   | 79.2                  | 1,589  | 81.2             | 78.3                   | 75.5             | 1,295                  | 80.6                  | 76.1   | 77.4             | 2,884                  | 83.7             | 75.3                   | 80.9                  | 2,318  | 87.6             | 84.1                   | 78.7                  | 1,062  | 85.0             | 78.3                   | 80.2                  | 3,380  |
| Poorer                                   | 80.7             | 73.9                   | 78.9                  | 1,719  | 80.4             | 78.4                   | 76.3             | 1,356                  | 80.6                  | 76.1   | 77.6             | 3,075                  | 85.1             | 77.1                   | 81.1                  | 2,580  | 85.9             | 86.4                   | 79.6                  | 1,123  | 85.3             | 80.1                   | 80.6                  | 3,703  |
| Middle                                   | 81.4             | 74.9                   | 78.9                  | 1,728  | 81.3             | 79.8                   | 76.1             | 1,399                  | 81.3                  | 77.1   | 77.6             | 3,127                  | 84.3             | 76.3                   | 81.1                  | 2,602  | 84.4             | 80.2                   | 78.2                  | 1,189  | 84.3             | 77.5                   | 80.2                  | 3,791  |
| Richer                                   | 80.7             | 74.1                   | 78.7                  | 1,824  | 80.6             | 79.5                   | 76.0             | 1,400                  | 80.6                  | 76.5   | 77.5             | 3,224                  | 83.9             | 76.3                   | 81.2                  | 2,767  | 84.9             | 85.4                   | 79.6                  | 1,126  | 84.2             | 79.2                   | 80.7                  | 3,893  |
| Richest                                  | 82.5             | 78.2                   | 79.2                  | 1,861  | 81.1             | 76.7                   | 75.1             | 1,378                  | 81.8                  | 77.5   | 77.2             | 3,239                  | 83.8             | 76.9                   | 80.9                  | 2,825  | 85.4             | 84.0                   | 78.8                  | 1,032  | 84.3             | 78.9                   | 80.3                  | 3,857  |
| Total                                    | 81.0             | 75.0                   | 79.0                  | 8,721  | 80.9             | 78.6                   | 75.8             | 6,828                  | 81.0                  | 76.7   | 77.5             | 15,549                 | 84.2             | 76.4                   | 81.0                  | 13,092 | 85.7             | 84.1                   | 79.0                  | 5,532  | 84.6             | 78.8                   | 80.4                  | 18,624 |

Notes

\* Including spouse irrespective of age.

<sup>1</sup> % predicted FVC- Percent predicted forced vital capacity = (absolute value of FVC (in L)) \* 100. The predicted value of FVC is based on Global lung function initiative (GLI) equation 2012.

Table 9.15 Mean values of lung function parameters (% predicted FVC, % predicted FEF 25-75 and absolute FEV1/FVC (%)) among older adult male and female, states/UTs, LASI Wave 1, 2017-18

| State/ Union Territory | Male             |                        |                       |        |                  |                        |                       |        |                  |                        | Female                |        |                  |                        |                       |        |                  |                        |                       |        |        |
|------------------------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|--------|
|                        | Age 45-59*       |                        |                       |        |                  | Total                  |                       |        |                  |                        | Age ≥ 60              |        |                  |                        |                       | Total  |                  |                        |                       |        |        |
|                        | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number |        |
| India                  | 81.0             | 75.0                   | 79.0                  | 8,721  | 80.9             | 78.6                   | 75.8                  | 6,828  | 81.0             | 76.7                   | 77.5                  | 15,549 | 84.2             | 85.7                   | 84.1                  | 79.0   | 5,532            | 84.6                   | 78.8                  | 80.4   | 18,624 |
| North                  |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |        |
| Chandigarh             | 78.1             | 72.4                   | 77.5                  | 160    | 76.7             | 68.7                   | 73.4                  | 104    | 77.5             | 70.9                   | 75.9                  | 264    | 84.2             | 86.4                   | 88.8                  | 79.5   | 109              | 84.9                   | 78.9                  | 79.9   | 337    |
| Delhi                  | 82.2             | 76.1                   | 78.5                  | 97     | 77.9             | 76.7                   | 75.5                  | 60     | 80.6             | 76.4                   | 77.3                  | 157    | 83.1             | 96.0                   | 104.1                 | 82.2   | 38               | 86.4                   | 81.2                  | 81.5   | 153    |
| Haryana                | 80.8             | 74.6                   | 77.9                  | 126    | 77.8             | 79.1                   | 76.0                  | 81     | 79.6             | 76.4                   | 77.1                  | 207    | 83.2             | 86.8                   | 88.7                  | 79.1   | 72               | 84.6                   | 82.2                  | 80.7   | 205    |
| Himachal Pradesh       | 88.8             | 73.0                   | 75.7                  | 184    | 87.0             | 72.0                   | 71.7                  | 187    | 87.8             | 72.5                   | 73.6                  | 371    | 96.0             | 100.2                  | 89.2                  | 75.7   | 166              | 97.3                   | 81.5                  | 77.6   | 538    |
| Jammu & Kashmir        | 98.4             | 80.7                   | 76.2                  | 213    | 99.9             | 78.5                   | 71.5                  | 199    | 99.1             | 79.6                   | 73.8                  | 412    | 96.2             | 98.9                   | 82.3                  | 75.2   | 111              | 96.9                   | 77.2                  | 76.7   | 429    |
| Punjab                 | 81.0             | 75.6                   | 78.5                  | 331    | 77.1             | 77.9                   | 76.3                  | 327    | 79.1             | 76.7                   | 77.4                  | 658    | 84.9             | 83.5                   | 85.3                  | 79.4   | 270              | 84.5                   | 82.1                  | 80.8   | 779    |
| Rajasthan              | 77.6             | 78.8                   | 81.2                  | 95     | 77.1             | 87.8                   | 78.6                  | 73     | 77.3             | 82.9                   | 80.0                  | 168    | 82.4             | 80.9                   | 93.4                  | 82.8   | 67               | 81.8                   | 89.3                  | 84.0   | 183    |
| Uttarakhand            | 86.3             | 68.7                   | 75.7                  | 194    | 84.1             | 66.3                   | 70.8                  | 217    | 85.1             | 67.4                   | 73.1                  | 411    | 86.4             | 93.0                   | 83.9                  | 77.9   | 227              | 88.9                   | 78.3                  | 79.1   | 610    |
| Central                |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |        |
| Chhattisgarh           | 82.8             | 86.5                   | 81.9                  | 138    | 81.1             | 84.9                   | 77.4                  | 89     | 82.2             | 85.9                   | 80.1                  | 227    | 81.7             | 82.0                   | 89.1                  | 82.0   | 48               | 81.8                   | 82.2                  | 82.4   | 173    |
| Madhya Pradesh         | 83.4             | 73.2                   | 77.4                  | 196    | 83.4             | 83.0                   | 76.3                  | 149    | 83.4             | 77.5                   | 76.9                  | 345    | 83.3             | 88.7                   | 105.9                 | 82.4   | 117              | 85.5                   | 92.8                  | 82.6   | 294    |
| Uttar Pradesh          | 82.9             | 76.1                   | 78.6                  | 490    | 79.5             | 77.5                   | 75.7                  | 415    | 81.3             | 76.8                   | 77.2                  | 905    | 89.3             | 91.2                   | 93.2                  | 79.7   | 248              | 89.9                   | 86.7                  | 81.2   | 818    |
| East                   |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |        |
| Bihar                  | 83.4             | 81.3                   | 79.9                  | 305    | 87.5             | 89.5                   | 76.5                  | 337    | 85.6             | 85.7                   | 78.1                  | 642    | 97.0             | 102.1                  | 104.8                 | 80.1   | 227              | 98.8                   | 98.1                  | 81.4   | 666    |
| Jharkhand              | 76.0             | 75.9                   | 81.6                  | 374    | 75.9             | 87.2                   | 80.3                  | 467    | 75.9             | 82.3                   | 80.9                  | 841    | 82.4             | 86.4                   | 96.7                  | 82.8   | 412              | 84.0                   | 86.6                  | 82.9   | 1,101  |
| Odisha                 | 78.0             | 67.8                   | 78.3                  | 557    | 78.6             | 71.5                   | 75.9                  | 385    | 78.2             | 69.4                   | 77.3                  | 942    | 79.9             | 82.4                   | 65.4                  | 76.1   | 325              | 80.6                   | 61.9                  | 77.5   | 1,164  |
| West Bengal            | 81.7             | 74.0                   | 78.8                  | 716    | 83.1             | 82.5                   | 76.1                  | 527    | 82.3             | 77.7                   | 77.6                  | 1,243  | 86.9             | 86.2                   | 73.3                  | 76.5   | 424              | 86.7                   | 77.2                  | 80.0   | 1,577  |
| Northeast              |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |        |
| Arunachal Pradesh      | 80.6             | 89.7                   | 85.4                  | 279    | 80.7             | 105.8                  | 84.1                  | 119    | 80.6             | 94.4                   | 85.0                  | 398    | 89.4             | 92.1                   | 113.5                 | 84.3   | 75               | 89.9                   | 100.1                 | 86.7   | 458    |
| Assam                  | 84.6             | 79.8                   | 80.0                  | 456    | 84.4             | 79.7                   | 75.4                  | 237    | 84.5             | 79.7                   | 78.4                  | 693    | 87.8             | 90.9                   | 81.2                  | 77.3   | 182              | 88.4                   | 77.0                  | 79.9   | 910    |
| Manipur                | 91.0             | 81.6                   | 78.9                  | 257    | 92.0             | 82.0                   | 74.6                  | 186    | 91.5             | 81.8                   | 77.0                  | 443    | 91.7             | 89.8                   | 83.2                  | 78.1   | 151              | 91.0                   | 80.7                  | 79.8   | 441    |
| Meghalaya              | 79.1             | 79.5                   | 82.6                  | 147    | 77.4             | 92.9                   | 82.4                  | 99     | 78.4             | 85.0                   | 82.5                  | 246    | 80.3             | 79.3                   | 89.1                  | 83.6   | 97               | 80.0                   | 79.9                  | 83.4   | 326    |
| Mizoram                | 84.8             | 93.1                   | 82.8                  | 194    | 86.0             | 98.5                   | 79.3                  | 146    | 85.4             | 95.6                   | 81.2                  | 340    | 92.2             | 90.7                   | 104.7                 | 83.2   | 122              | 91.7                   | 101.2                 | 84.5   | 404    |
| Nagaland               | 89.4             | 94.0                   | 82.8                  | 236    | 89.4             | 95.3                   | 79.3                  | 208    | 89.4             | 94.7                   | 81.1                  | 444    | 99.0             | 107.0                  | 101.3                 | 80.1   | 146              | 101.4                  | 90.9                  | 80.6   | 456    |
| Tripura                | 84.8             | 72.5                   | 77.7                  | 231    | 81.4             | 71.0                   | 72.8                  | 186    | 83.2             | 71.9                   | 75.5                  | 417    | 88.7             | 85.5                   | 80.1                  | 78.6   | 173              | 87.8                   | 80.1                  | 80.6   | 595    |
| West                   |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                       |        |        |
| Dadra & Nagar Haveli   | 77.2             | 82.9                   | 83.0                  | 126    | 76.6             | 77.9                   | 78.2                  | 73     | 77.0             | 81.1                   | 81.3                  | 199    | 81.5             | 86.9                   | 90.0                  | 79.9   | 63               | 83.1                   | 81.3                  | 81.1   | 211    |
| Daman & Diu            | 83.2             | 77.8                   | 79.4                  | 85     | 78.6             | 67.0                   | 73.2                  | 61     | 81.2             | 73.1                   | 76.7                  | 146    | 81.7             | 81.3                   | 87.0                  | 79.4   | 81               | 81.6                   | 79.2                  | 80.0   | 223    |
| Goa                    | 76.3             | 80.1                   | 80.7                  | 81     | 74.1             | 89.2                   | 80.6                  | 68     | 75.3             | 84.2                   | 80.6                  | 149    | 81.4             | 85.7                   | 99.9                  | 82.0   | 50               | 82.8                   | 87.7                  | 82.6   | 182    |
| Gujarat                | 84.2             | 75.5                   | 77.7                  | 197    | 81.3             | 62.7                   | 72.0                  | 121    | 83.0             | 70.2                   | 75.3                  | 318    | 85.5             | 87.2                   | 78.9                  | 76.5   | 89               | 86.0                   | 74.4                  | 78.2   | 334    |
| Maharashtra            | 80.4             | 74.6                   | 78.7                  | 519    | 80.4             | 77.3                   | 75.6                  | 474    | 80.4             | 76.0                   | 77.2                  | 993    | 78.0             | 78.5                   | 76.8                  | 78.8   | 457              | 78.2                   | 72.5                  | 79.8   | 1,339  |

continued

continued

| State/ Union Territory    | Male             |                        |                       |        |                  |                        |                       |        |                  |                        | Female           |                        |                       |        |                  |                        |                  |                        |                       |        |      |      |      |     |
|---------------------------|------------------|------------------------|-----------------------|--------|------------------|------------------------|-----------------------|--------|------------------|------------------------|------------------|------------------------|-----------------------|--------|------------------|------------------------|------------------|------------------------|-----------------------|--------|------|------|------|-----|
|                           | Age 45-59*       |                        |                       |        |                  | Total                  |                       |        |                  |                        | Age ≥ 60         |                        |                       |        |                  | Total                  |                  |                        |                       |        |      |      |      |     |
|                           | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number | % predicted FVC¹ | % predicted FEF 25-75² | % predicted FVC¹ | % predicted FEF 25-75² | Absolute FEV1/FVC (%) | Number |      |      |      |     |
| South                     |                  |                        |                       |        |                  |                        |                       |        |                  |                        |                  |                        |                       |        |                  |                        |                  |                        |                       |        |      |      |      |     |
| Andaman & Nicobar Islands | 80.9             | 70.8                   | 78.1                  | 249    | 81.1             | 71.1                   | 74.1                  | 202    | 81.0             | 70.9                   | 76.3             | 451                    | 84.0                  | 69.0   | 78.6             | 348                    | 86.5             | 77.9                   | 77.3                  | 160    | 84.8 | 71.8 | 78.2 | 508 |
| Andhra Pradesh            | 78.4             | 73.7                   | 79.2                  | 347    | 75.8             | 74.7                   | 76.2                  | 246    | 77.3             | 74.1                   | 77.9             | 593                    | 78.7                  | 72.6   | 81.4             | 568                    | 81.4             | 81.7                   | 79.1                  | 171    | 79.4 | 74.8 | 80.8 | 739 |
| Karnataka                 | 81.5             | 76.5                   | 78.8                  | 172    | 81.6             | 75.7                   | 74.4                  | 119    | 81.6             | 76.1                   | 76.7             | 291                    | 79.0                  | 78.3   | 82.9             | 245                    | 74.0             | 81.6                   | 81.1                  | 74     | 77.7 | 79.2 | 82.4 | 319 |
| Kerala                    | 78.2             | 80.9                   | 81.1                  | 136    | 73.3             | 79.0                   | 77.7                  | 101    | 76.0             | 80.1                   | 79.6             | 237                    | 79.9                  | 80.6   | 83.1             | 219                    | 79.7             | 89.2                   | 81.2                  | 84     | 79.8 | 83.2 | 82.5 | 303 |
| Lakshadweep               | 70.7             | 84.4                   | 82.3                  | 52     | 74.7             | 87.9                   | 80.1                  | 49     | 72.6             | 86.1                   | 81.2             | 101                    | 74.3                  | 82.0   | 83.8             | 72                     | 78.2             | 72.3                   | 78.3                  | 26     | 75.3 | 79.4 | 82.3 | 98  |
| Puducherry                | 71.7             | 66.2                   | 77.0                  | 161    | 73.9             | 70.2                   | 73.4                  | 91     | 72.6             | 67.8                   | 75.6             | 252                    | 78.0                  | 68.8   | 77.7             | 260                    | 82.9             | 62.2                   | 70.0                  | 88     | 79.4 | 67.0 | 75.5 | 348 |
| Tamil Nadu                | 72.6             | 70.7                   | 79.7                  | 325    | 74.7             | 73.7                   | 75.8                  | 239    | 73.5             | 72.1                   | 78.0             | 564                    | 81.0                  | 69.3   | 79.7             | 540                    | 86.4             | 87.9                   | 79.5                  | 237    | 82.8 | 75.5 | 79.6 | 777 |
| Telangana                 | 78.9             | 75.3                   | 79.8                  | 295    | 79.7             | 76.1                   | 75.8                  | 186    | 79.2             | 75.6                   | 78.1             | 481                    | 79.5                  | 74.0   | 81.6             | 481                    | 81.1             | 79.9                   | 79.8                  | 145    | 79.9 | 75.5 | 81.1 | 626 |

#### Notes

\* Including spouse irrespective of age.

<sup>1</sup> % predicted FVC- Percent predicted forced vital capacity = (absolute value of FVC (in L)/ predicted value of FVC (in L)) \* 100. The predicted value of FVC is based on Global lung function initiative (GLI) equation 2012.

<sup>2</sup> % predicted FEF25-75-Percent predicted forced expiratory flow 25-75% = (absolute value of FEF25-75 (in L/s)/ predicted value of FEF25-75 (in L/s)) \* 100. The predicted value of FEF25-75 is based on Global lung function initiative (GLI) equation 2012.

### 9.2.3 Normal lung function

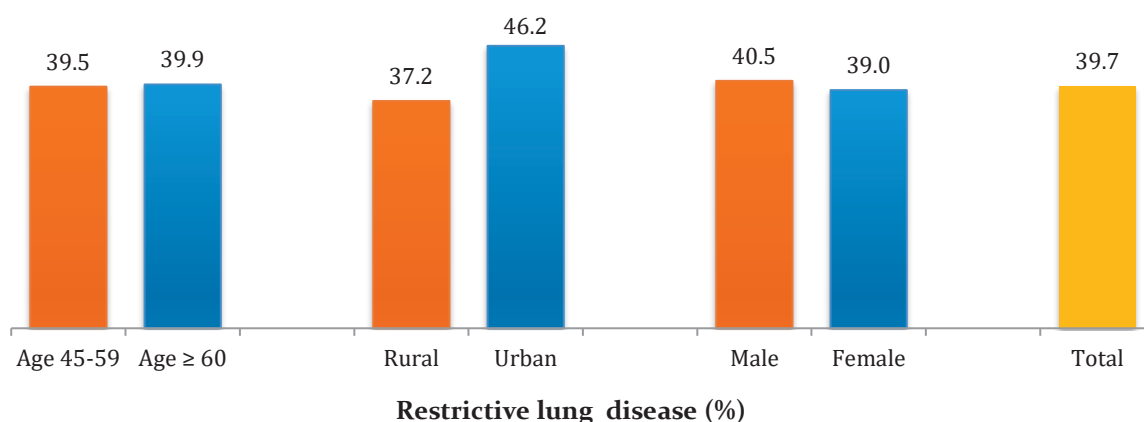
Slightly more than half of older adults age 45 and above (51%) in India have normal lung function (Table 9.16). A higher proportion of older adults age 45-59 (52%) have normal PFT results compared to elderly age 60 and above (51%). Women (55%) and rural residents (54%) have healthier lung function than their respective men (47%) and urban (45%) counterparts in age 45 and above.

### 9.2.4 Prevalence of restrictive lung disease

Restrictive lung disease refers to a heterogeneous group of conditions characterized by a restrictive pattern on lungs and confirmed by a reduction in total lung volume (Robinson, 2016). The restrictive pattern is an important consideration when the FEV1/FVC ratio is  $\geq 70\%$  in participants  $< 60$  years-old or  $\geq 65\%$  in participants  $\geq 60$  years-old, and the % predicted FVC value is  $< 80\%$ .

Table 9.16 presents the prevalence of restrictive lung disease according to background characteristics. Overall, in India, the prevalence of restrictive lung disease is 40% among older adults age 45-59 and elderly age 60 and above. The restrictive lung disease is more prevalent among older adult age 45 and above residing in urban (46%) than those residing in rural areas (37%), and among older adult men (41%) than women (39%) age 45 and above (Figure 9.6).

**Figure 9.6 Prevalence (%) of restrictive lung disease among older adults age 45 and above\* by age, place of residence, and sex, India, LASI Wave 1, 2017-18**

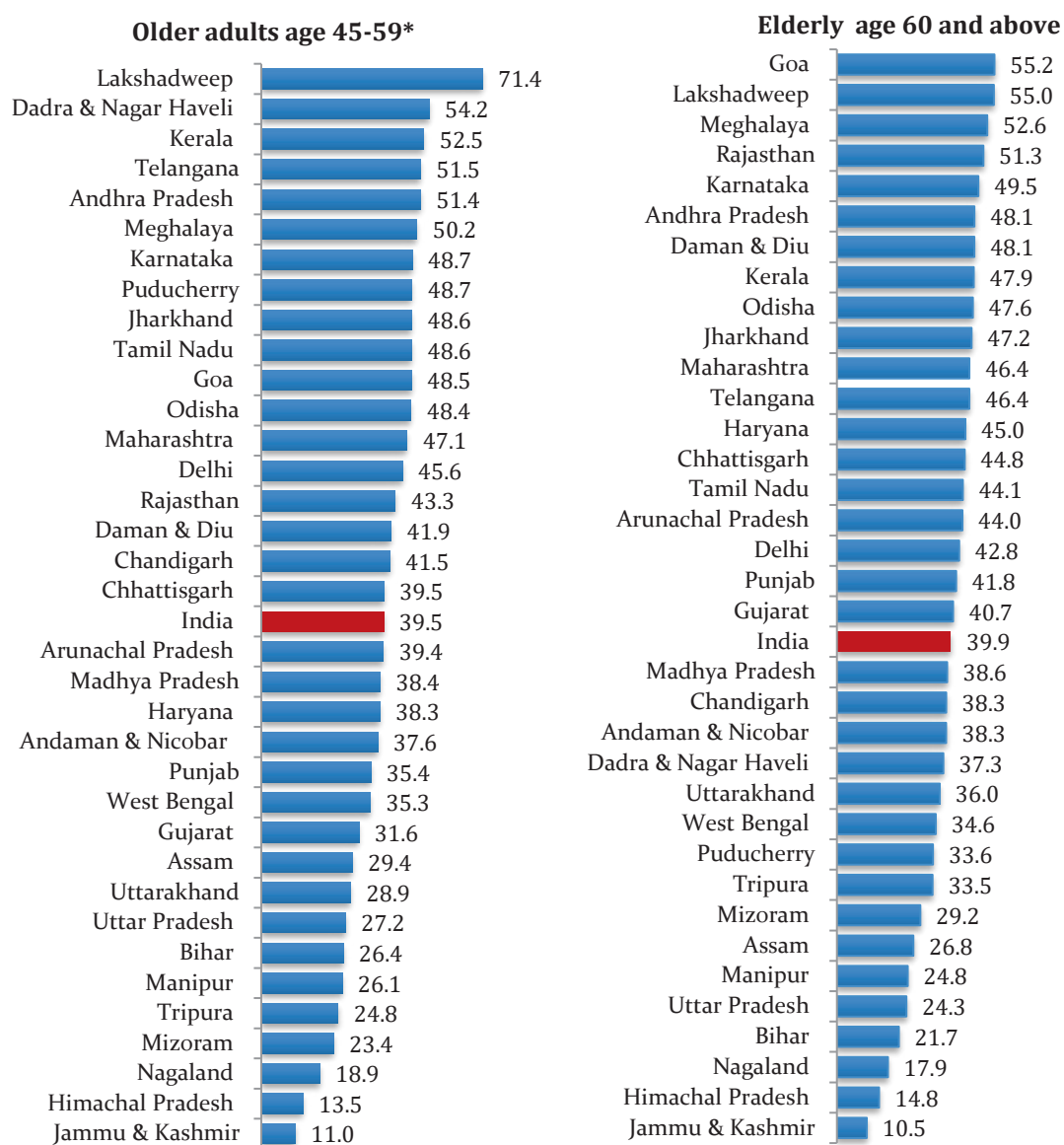


Note

\* Including spouse irrespective of age.

Across the states/UTs of India, the prevalence of restrictive lung disease among older adults age 45 and above ranges from 71% in Lakshadweep to 11% in Jammu & Kashmir (Table 9.17). More than half of the elderly age 60 and above in Goa (55%), Lakshadweep (55%), Meghalaya (53%) and Rajasthan (51%) have restrictive lung disease, compared with less than a quarter of the elderly 60 and above in Uttarakhand (24%), Bihar (22%), Nagaland (18%), Himachal Pradesh (15%), and Jammu & Kashmir (11%).

**Figure 9.7 Prevalence (%) of restrictive lung disease among older adults age 45-59\* and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



Note

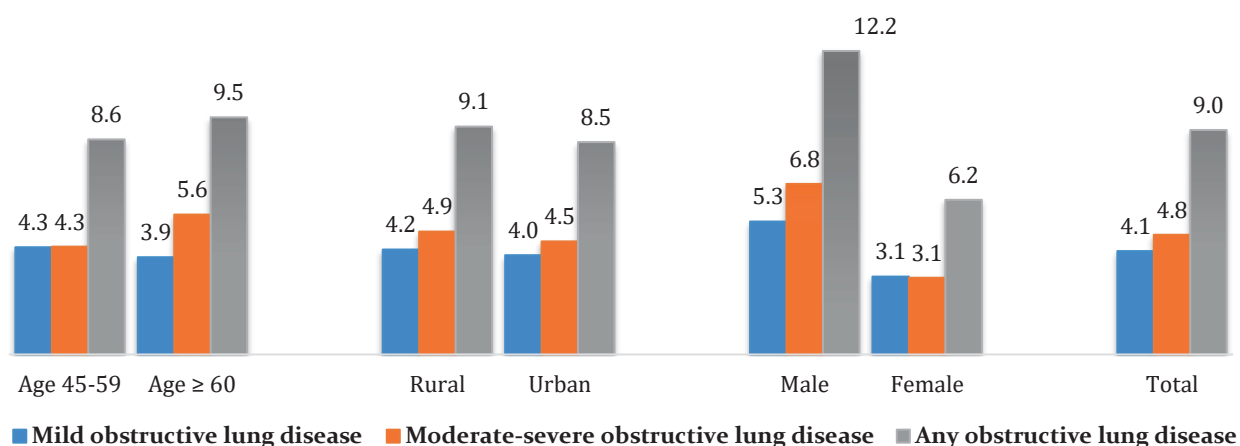
\* Including spouse irrespective of age.

### 9.2.5 Prevalence of obstructive lung disease

Globally, the burden of obstructive lung disease is projected to increase in the coming decades because of population ageing, genetic and lung abnormalities, and continued exposure to risk factors such as tobacco smoke, biomass fuels, and polluted air (Vogelmeier et al., 2019).

Overall, in India, 9% have obstructive lung disease, including 4% with mild obstructive lung disease and 5% moderate-severe obstructive lung disease (Figure 9.8). The prevalence of any obstructive lung disease is two times higher among older adult men (12%) than older adult women (6%) age 45 and above.

**Figure 9.8 Prevalence (%) of obstructive lung disease among older adults age 45 and above\* by age, place of residence, and sex, India, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age.

Cross-state variations in the prevalence of any obstructive lung disease are presented in Figure 9.9. The prevalence of any obstructive lung disease among older adults age 45-59 ranges from 19% in Himachal Pradesh and Puducherry to 1% in Meghalaya and Nagaland; among the elderly age 60 and above, the prevalence of any obstructive lung disease is markedly higher in the states/UTs of Puducherry (32%), Himachal Pradesh (27%), Jammu & Kashmir (17%), and Tripura (16%) and; much lower or none in the states/UTs of Meghalaya (1%), Arunachal Pradesh (1%), and Nagaland (0%).

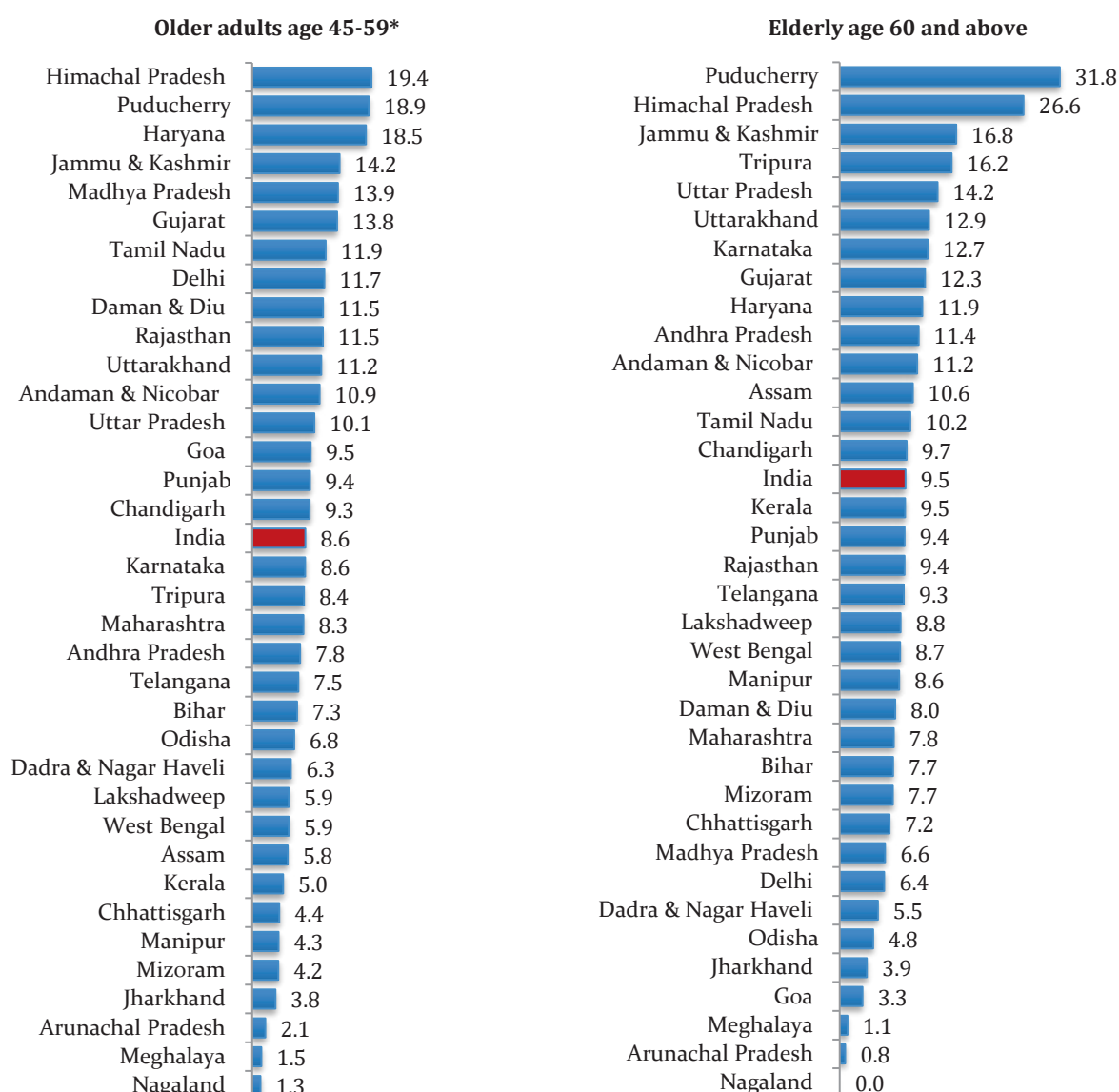
The prevalence of mild and moderate-severe obstructive lung disease according to background characteristics is presented in Table 9.16. The prevalence of the mild obstructive lung disease is 4% among older adults 45 and above. The prevalence of mild obstructive lung disease is higher among older adults age 45 and above belonging to Scheduled caste category (5%) than their counterparts. Higher proportion of the elderly men age 60 and above have moderate-severe obstructive lung disease (8%) than among elderly women age 60 and above (3%). The prevalence of moderate-severe lung disease is higher among elderly age 60 and above (6%) than the older adults age 45-59 (4%). Moderate-severe obstructive lung disease is most prevalent among elderly age 60 and above who have education less than five years (9%), those who have worked in past but currently not working (8%) and those with richest MPCE quintile (7%).

The prevalence of mild and moderate-severe obstructive lung disease by states/UTs is presented in Table 9.17. Across the states/UTs, the prevalence of mild obstructive lung disease among older adults

age 45 and above ranges from 15% in Himachal Pradesh to less than 1% in Meghalaya (0.4%). The prevalence of mild obstructive lung disease is higher among elderly age 60 and above in Himachal Pradesh (17%) and Jammu & Kashmir (13%). The prevalence of moderate-severe obstructive lung disease among older adults age 45 and above ranges from 18% in Puducherry to less than 1% in Nagaland (0.2%). Further, the prevalence of moderate-severe obstructive lung disease among elderly age 60 and above is highest in Puducherry (27%) followed by Himachal Pradesh (10%) and Kerala (10%).

Among elderly age 60 and above, the states/UTs of Goa (55%), Lakshadweep (55%), Meghalaya (53%), Rajasthan (51%), Karnataka (50%), Andhra Pradesh (48%), Daman & Diu (48%), Kerala (48%), Odisha (48%), Jharkhand (47%), Maharashtra (46%), Telangana (46%), Haryana (45%) and Chhattisgarh (45%) with high prevalence of restrictive lung disease (Figure 9.7) are contrastingly observed to have low prevalence of any obstructive lung disease (Figure 9.9): Meghalaya (1%), Goa (3%), Jharkhand (4%), Odisha (5%), Chhattisgarh (7%), Maharashtra (8%), Daman & Diu (8%), Lakshadweep (9%), Telangana (9%), Rajasthan (9%), Kerala (9%), Andhra Pradesh (11%), Haryana (12%), and Karnataka (13%).

**Figure 9.9 Prevalence (%) of any obstructive lung disease among older adults age 45-59\* and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age.



### Key findings: lung function

- In India, almost half (49%) of older adults age 45 and above have either restrictive or obstructive lung disease. Nearly two in five (40%) older adults age 45 and above have restrictive lung disease while 9% have obstructive lung disease, including 4% with mild obstructive lung disease and 5% moderate-severe obstructive lung disease.
- The prevalence of restrictive lung disease is higher among elderly age 60 and above than among the older adults age 45-59; whereas the prevalence of mild obstructive lung disease is higher among older adults age 45-59 than among elderly age 60 and above. The prevalence of any obstructive lung disease is two times higher among older adult men (12%) than older adult women (6%) age 45-59.
- Regardless of age, restrictive lung disease is higher in urban than in rural areas; whereas obstructive lung disease (mild and moderate-severe) is more prevalent in rural than in urban areas.
- The prevalence of moderate-severe obstructive lung disease among elderly age 60 and above is markedly higher in the states/UTs of Puducherry (27%), Himachal Pradesh (10%), and Kerala (10%).
- Among elderly age 60 and above, the states/UTs of Goa (55%), Lakshadweep (55%), Meghalaya (53%), Rajasthan (51%), Karnataka (50%), Andhra Pradesh (48%), Daman & Diu (48%), Kerala (48%), Odisha (48%), Jharkhand (47%), Maharashtra (46%), Telangana (46%), Haryana (45%) and Chhattisgarh (45%) with high prevalence of restrictive lung disease are contrastingly observed to have low prevalence of any obstructive lung disease: Meghalaya (1%), Goa (3%), Jharkhand (4%), Odisha (5%), Chhattisgarh (7%), Maharashtra (8%), Daman & Diu (8%), Lakshadweep (9%), Telangana (9%), Rajasthan (9%), Kerala (9%), Andhra Pradesh (11%), Haryana (12%), and Karnataka (13%)

**Table 9.16 Percent distribution of older adults by types of lung diseases by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics         | Age 45-59*              |                          |                               |                                          |        |                         |                          | Age ≥ 60                      |                                          |        |                         |                          |                               |                                          | Total  |        |
|------------------------------------|-------------------------|--------------------------|-------------------------------|------------------------------------------|--------|-------------------------|--------------------------|-------------------------------|------------------------------------------|--------|-------------------------|--------------------------|-------------------------------|------------------------------------------|--------|--------|
|                                    | Normal LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild obstructive <sup>3</sup> | Moderate-severe obstructive <sup>4</sup> | Number | Normal LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild obstructive <sup>3</sup> | Moderate-severe obstructive <sup>4</sup> | Number | Normal LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild obstructive <sup>3</sup> | Moderate-severe obstructive <sup>4</sup> | Number | Number |
| <b>Place of residence</b>          |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |        |
| Rural                              | 54.3                    | 37.1                     | 4.3                           | 4.3                                      | 14,382 | 52.8                    | 37.2                     | 4.1                           | 5.9                                      | 8,341  | 53.7                    | 37.2                     | 4.2                           | 4.9                                      | 22,723 |        |
| Urban                              | 45.6                    | 45.7                     | 4.4                           | 4.3                                      | 7,431  | 44.8                    | 47.0                     | 3.3                           | 4.9                                      | 4,019  | 45.3                    | 46.2                     | 4.0                           | 4.5                                      | 11,450 |        |
| <b>Sex</b>                         |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |        |
| Male                               | 48.6                    | 39.8                     | 5.4                           | 6.2                                      | 8,721  | 46.0                    | 41.2                     | 5.2                           | 7.6                                      | 6,828  | 47.4                    | 40.5                     | 5.3                           | 6.8                                      | 15,549 |        |
| Female                             | 54.0                    | 39.3                     | 3.5                           | 3.1                                      | 13,092 | 56.6                    | 38.2                     | 2.2                           | 3.1                                      | 5,532  | 54.8                    | 39.0                     | 3.1                           | 3.1                                      | 18,624 |        |
| <b>Marital status</b>              |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |        |
| Currently married                  | 52.2                    | 39.4                     | 4.1                           | 4.3                                      | 19,211 | 49.9                    | 40.1                     | 4.2                           | 5.9                                      | 8,694  | 51.4                    | 39.6                     | 4.1                           | 4.8                                      | 27,905 |        |
| Widowed                            | 47.5                    | 41.4                     | 6.3                           | 4.9                                      | 1,880  | 52.3                    | 39.4                     | 3.3                           | 5.0                                      | 3,386  | 50.8                    | 40.0                     | 4.2                           | 5.0                                      | 5,266  |        |
| Divorced/Separated/Deserted/Others | 52.9                    | 39.5                     | 3.9                           | 3.8                                      | 722    | 52.7                    | 39.3                     | 2.7                           | 5.4                                      | 280    | 52.8                    | 39.4                     | 3.5                           | 4.3                                      | 1,002  |        |
| <b>Living arrangement</b>          |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |        |
| Living alone                       | 48.9                    | 37.8                     | 8.6                           | 4.7                                      | 385    | 54.1                    | 38.8                     | 2.7                           | 4.4                                      | 560    | 52.4                    | 38.4                     | 4.7                           | 4.5                                      | 945    |        |
| Living with spouse and/or others   | 50.0                    | 41.4                     | 4.4                           | 4.2                                      | 2,335  | 49.3                    | 39.6                     | 4.9                           | 6.2                                      | 2,548  | 49.6                    | 40.4                     | 4.6                           | 5.3                                      | 4,883  |        |
| Living with spouse and children    | 52.5                    | 39.1                     | 4.1                           | 4.3                                      | 16,535 | 50.2                    | 40.2                     | 3.9                           | 5.7                                      | 6,044  | 51.8                    | 39.4                     | 4.0                           | 4.7                                      | 22,579 |        |
| Living with children and others    | 48.8                    | 41.0                     | 5.2                           | 4.9                                      | 2,011  | 51.6                    | 40.2                     | 3.1                           | 5.1                                      | 2,711  | 50.6                    | 40.5                     | 3.9                           | 5.0                                      | 4,722  |        |
| Living with others only            | 52.4                    | 39.3                     | 5.1                           | 3.2                                      | 547    | 53.0                    | 36.6                     | 4.6                           | 5.8                                      | 497    | 52.7                    | 37.8                     | 4.9                           | 4.6                                      | 1,044  |        |
| <b>Religion</b>                    |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |        |
| Hindu                              | 51.5                    | 39.8                     | 4.3                           | 4.4                                      | 15,521 | 51.0                    | 39.5                     | 3.9                           | 5.7                                      | 8,727  | 51.3                    | 39.7                     | 4.2                           | 4.9                                      | 24,248 |        |
| Muslim                             | 56.1                    | 35.8                     | 4.4                           | 3.7                                      | 2,367  | 51.5                    | 37.5                     | 5.0                           | 6.1                                      | 1,297  | 54.3                    | 36.4                     | 4.6                           | 4.6                                      | 3,664  |        |
| Christian                          | 46.0                    | 47.1                     | 3.8                           | 3.1                                      | 2,716  | 46.3                    | 49.5                     | 2.0                           | 2.3                                      | 1,501  | 46.1                    | 48.0                     | 3.1                           | 2.8                                      | 4,217  |        |
| Others                             | 52.1                    | 38.3                     | 3.7                           | 5.9                                      | 1,209  | 45.4                    | 45.4                     | 3.4                           | 5.9                                      | 835    | 49.3                    | 41.3                     | 3.5                           | 5.9                                      | 2,044  |        |
| <b>Caste/tribe</b>                 |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |                         |                          |                               |                                          |        |        |
| Scheduled tribe                    | 53.5                    | 39.2                     | 4.2                           | 3.1                                      | 4,180  | 53.3                    | 40.7                     | 2.6                           | 3.4                                      | 2,242  | 53.5                    | 39.7                     | 3.6                           | 3.2                                      | 6,422  |        |
| Scheduled caste                    | 49.7                    | 40.3                     | 4.9                           | 5.1                                      | 3,856  | 51.2                    | 38.2                     | 4.9                           | 5.7                                      | 2,038  | 50.2                    | 39.5                     | 4.9                           | 5.3                                      | 5,894  |        |
| Other backward class               | 50.2                    | 41.0                     | 4.2                           | 4.6                                      | 7,428  | 48.9                    | 41.6                     | 4.0                           | 5.5                                      | 4,180  | 49.7                    | 41.2                     | 4.1                           | 4.9                                      | 11,608 |        |
| None of the above                  | 55.0                    | 37.1                     | 4.0                           | 3.9                                      | 6,349  | 51.9                    | 38.2                     | 3.6                           | 6.3                                      | 3,900  | 53.8                    | 37.6                     | 3.8                           | 4.8                                      | 10,249 |        |

continued

continued

| Background characteristics               | Age 45-59*       |                          |                               |                                          |               |                         | Age ≥ 60                      |                               |                                          |                                          |                         |                          | Total                         |                                          |
|------------------------------------------|------------------|--------------------------|-------------------------------|------------------------------------------|---------------|-------------------------|-------------------------------|-------------------------------|------------------------------------------|------------------------------------------|-------------------------|--------------------------|-------------------------------|------------------------------------------|
|                                          | Normal           |                          |                               | Restrictive <sup>2</sup>                 |               |                         | Mild obstructive <sup>3</sup> |                               |                                          | Moderate-severe obstructive <sup>4</sup> |                         |                          | Mild obstructive <sup>3</sup> | Moderate-severe obstructive <sup>4</sup> |
|                                          | LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild obstructive <sup>3</sup> | Moderate-severe obstructive <sup>4</sup> | Number        | Normal LFT <sup>1</sup> | Restrictive <sup>2</sup>      | Mild obstructive <sup>3</sup> | Moderate-severe obstructive <sup>4</sup> | Number                                   | Normal LFT <sup>1</sup> | Restrictive <sup>2</sup> |                               |                                          |
| <b>Education</b>                         |                  |                          |                               |                                          |               |                         |                               |                               |                                          |                                          |                         |                          |                               |                                          |
| No schooling                             | 52.2             | 38.5                     | 4.8                           | 4.5                                      | 8,172         | 53.1                    | 38.2                          | 4.0                           | 4.7                                      | 5,863                                    | 52.6                    | 38.4                     | 4.4                           | 4.6                                      |
| Less than 5 years complete               | 51.5             | 39.8                     | 4.5                           | 4.2                                      | 2,399         | 46.8                    | 40.7                          | 3.6                           | 9.0                                      | 1,558                                    | 49.5                    | 40.2                     | 4.1                           | 6.2                                      |
| 5-9 years complete                       | 51.8             | 40.0                     | 4.0                           | 4.2                                      | 6,177         | 48.7                    | 41.3                          | 3.9                           | 6.1                                      | 2,737                                    | 50.8                    | 40.4                     | 4.0                           | 4.8                                      |
| 10 or more years complete                | 51.5             | 40.6                     | 3.7                           | 4.2                                      | 5,065         | 48.7                    | 42.4                          | 4.0                           | 4.9                                      | 2,202                                    | 50.6                    | 41.2                     | 3.8                           | 4.5                                      |
| <b>Work status</b>                       |                  |                          |                               |                                          |               |                         |                               |                               |                                          |                                          |                         |                          |                               |                                          |
| Currently working                        | 50.5             | 40.3                     | 4.4                           | 4.8                                      | 13,214        | 53.8                    | 37.4                          | 4.2                           | 4.6                                      | 4,605                                    | 51.4                    | 39.5                     | 4.3                           | 4.7                                      |
| Worked in past but currently not working | 46.0             | 42.8                     | 5.4                           | 5.7                                      | 2,093         | 44.8                    | 43.4                          | 4.0                           | 7.7                                      | 4,807                                    | 45.2                    | 43.2                     | 4.4                           | 7.2                                      |
| Never worked                             | 57.0             | 36.6                     | 3.7                           | 2.8                                      | 6,506         | 55.6                    | 37.8                          | 3.1                           | 3.5                                      | 2,948                                    | 56.5                    | 37.0                     | 3.5                           | 3.1                                      |
| <b>MPCE quintile</b>                     |                  |                          |                               |                                          |               |                         |                               |                               |                                          |                                          |                         |                          |                               |                                          |
| Poorest                                  | 50.1             | 41.1                     | 4.0                           | 4.8                                      | 3,907         | 53.5                    | 37.1                          | 3.9                           | 5.4                                      | 2,357                                    | 51.5                    | 39.5                     | 4.0                           | 5.1                                      |
| Poorer                                   | 53.0             | 38.2                     | 4.5                           | 4.2                                      | 4,299         | 49.4                    | 41.9                          | 3.5                           | 5.1                                      | 2,479                                    | 51.6                    | 39.7                     | 4.1                           | 4.6                                      |
| Middle                                   | 51.6             | 39.7                     | 4.6                           | 4.2                                      | 4,330         | 50.5                    | 40.3                          | 3.8                           | 5.4                                      | 2,588                                    | 51.1                    | 39.9                     | 4.3                           | 4.6                                      |
| Richer                                   | 50.8             | 40.7                     | 4.4                           | 4.1                                      | 4,591         | 49.4                    | 41.6                          | 4.0                           | 4.9                                      | 2,526                                    | 50.3                    | 41.0                     | 4.3                           | 4.4                                      |
| Richest                                  | 53.8             | 37.9                     | 4.0                           | 4.3                                      | 4,686         | 50.2                    | 38.2                          | 4.2                           | 7.4                                      | 2,410                                    | 52.4                    | 38.0                     | 4.1                           | 5.5                                      |
| <b>Total</b>                             | <b>51.8</b>      | <b>39.5</b>              | <b>4.3</b>                    | <b>4.3</b>                               | <b>21,813</b> | <b>50.6</b>             | <b>39.9</b>                   | <b>3.9</b>                    | <b>5.6</b>                               | <b>12,360</b>                            | <b>51.4</b>             | <b>39.7</b>              | <b>4.1</b>                    | <b>4.8</b>                               |
| <b>34,173</b>                            |                  |                          |                               |                                          |               |                         |                               |                               |                                          |                                          |                         |                          |                               |                                          |

Note

\* Including spouse irrespective of age.

| Parameter         | Normal PFT <sup>1</sup>              | Restrictive <sup>2</sup>              | Mild obstructive <sup>3</sup>         | Moderate-severe obstructive <sup>4</sup> |
|-------------------|--------------------------------------|---------------------------------------|---------------------------------------|------------------------------------------|
| Predicted FVC %   | 80%                                  | < 80%                                 | ≥ 80%                                 | < 80%                                    |
| Absolute FEV1/FVC | ≥ 70 (Age 45-59*) & ≥ 65% (Age ≥ 60) | ≥ 70% (Age 45-59*) & ≥ 65% (Age ≥ 60) | < 70% (Age 45-59*) & < 65% (Age ≥ 60) | < 70% (Age 45-59*) & < 65% (Age ≥ 60)    |

**Table 9.17 Percent distribution of older adults by types of lung diseases, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory | Age 45-59*                 |                          |                                  |                                                 |               | Age ≥ 60                   |                          |                                  |                                                 |               | Total                      |                          |                                  |                                                 |               |
|------------------------|----------------------------|--------------------------|----------------------------------|-------------------------------------------------|---------------|----------------------------|--------------------------|----------------------------------|-------------------------------------------------|---------------|----------------------------|--------------------------|----------------------------------|-------------------------------------------------|---------------|
|                        | Normal<br>LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild<br>obstructive <sup>3</sup> | Moderate-<br>severe<br>obstructive <sup>4</sup> | Number        | Normal<br>LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild<br>obstructive <sup>3</sup> | Moderate-<br>severe<br>obstructive <sup>4</sup> | Number        | Normal<br>LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild<br>obstructive <sup>3</sup> | Moderate-<br>severe<br>obstructive <sup>4</sup> | Number        |
| <b>India</b>           | <b>51.8</b>                | <b>39.5</b>              | <b>4.3</b>                       | <b>4.3</b>                                      | <b>21,813</b> | <b>50.6</b>                | <b>39.9</b>              | <b>3.9</b>                       | <b>5.6</b>                                      | <b>12,360</b> | <b>51.4</b>                | <b>39.7</b>              | <b>4.1</b>                       | <b>4.8</b>                                      | <b>34,173</b> |
| <b>North</b>           |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |
| Chandigarh             | 49.2                       | 41.5                     | 2.3                              | 7.0                                             | 388           | 52.0                       | 38.3                     | [1.0]                            | 8.7                                             | 213           | 50.2                       | 40.3                     | 1.8                              | 7.6                                             | 601           |
| Delhi                  | 42.7                       | 45.6                     | 7.1                              | 4.6                                             | 212           | 50.7                       | 42.8                     | [3.7]                            | [2.7]                                           | 98            | 45.3                       | 44.7                     | 6.0                              | 4.0                                             | 310           |
| Haryana                | 43.2                       | 38.3                     | 11.2                             | 7.3                                             | 259           | 43.1                       | 45.0                     | 3.4                              | 8.6                                             | 153           | 43.1                       | 40.9                     | 8.1                              | 7.8                                             | 412           |
| Himachal Pradesh       | 66.9                       | 13.5                     | 13.9                             | 5.5                                             | 556           | 58.7                       | 14.8                     | 16.9                             | 9.7                                             | 353           | 63.6                       | 14.0                     | 15.1                             | 7.2                                             | 909           |
| Jammu & Kashmir        | 74.9                       | 11.0                     | 10.7                             | 3.5                                             | 531           | 72.7                       | 10.5                     | 13.2                             | 3.6                                             | 310           | 74.0                       | 10.8                     | 11.7                             | 3.5                                             | 841           |
| Punjab                 | 55.3                       | 35.4                     | 4.2                              | 5.2                                             | 840           | 48.9                       | 41.8                     | 3.5                              | 5.9                                             | 597           | 52.6                       | 38.0                     | 3.9                              | 5.5                                             | 1,437         |
| Rajasthan              | 45.2                       | 43.3                     | 5.7                              | 5.8                                             | 211           | 39.3                       | 51.3                     | [3.8]                            | 5.5                                             | 140           | 42.8                       | 46.6                     | 4.9                              | 5.7                                             | 351           |
| Uttarakhand            | 62.7                       | 27.2                     | 5.9                              | 4.2                                             | 577           | 61.5                       | 24.3                     | 5.4                              | 8.7                                             | 444           | 62.2                       | 25.9                     | 5.7                              | 6.2                                             | 1,021         |
| <b>Central</b>         |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |
| Chhattisgarh           | 56.1                       | 39.5                     | 2.4                              | 2.0                                             | 263           | 48.0                       | 44.8                     | [1.6]                            | 5.6                                             | 137           | 53.2                       | 41.4                     | 2.1                              | 3.3                                             | 400           |
| Madhya Pradesh         | 47.7                       | 38.4                     | 8.7                              | 5.2                                             | 373           | 54.8                       | 38.6                     | 2.8                              | 3.8                                             | 266           | 50.7                       | 38.5                     | 6.2                              | 4.6                                             | 639           |
| Uttar Pradesh          | 59.9                       | 28.9                     | 4.9                              | 6.3                                             | 1,060         | 51.1                       | 36.0                     | 3.9                              | 9.0                                             | 663           | 56.3                       | 31.8                     | 4.5                              | 7.4                                             | 1,723         |
| <b>East</b>            |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |
| Bihar                  | 66.3                       | 26.4                     | 4.4                              | 2.8                                             | 744           | 70.6                       | 21.7                     | 3.9                              | 3.9                                             | 564           | 68.2                       | 24.3                     | 4.2                              | 3.3                                             | 1,308         |
| Jharkhand              | 47.6                       | 48.6                     | 1.8                              | 2.0                                             | 1,063         | 48.9                       | 47.2                     | 2.0                              | 1.9                                             | 879           | 48.2                       | 48.0                     | 1.9                              | 1.9                                             | 1,942         |
| Odisha                 | 44.8                       | 48.4                     | 2.6                              | 4.2                                             | 1,396         | 47.5                       | 47.6                     | 1.5                              | 3.3                                             | 710           | 45.8                       | 48.1                     | 2.2                              | 3.9                                             | 2,106         |
| West Bengal            | 58.8                       | 35.3                     | 3.2                              | 2.7                                             | 1,869         | 56.6                       | 34.6                     | 3.7                              | 5.0                                             | 951           | 58.0                       | 35.1                     | 3.4                              | 3.5                                             | 2,820         |
| <b>Northeast</b>       |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |
| Arunachal Pradesh      | 58.4                       | 39.4                     | 1.4                              | [0.7]                                           | 662           | 55.2                       | 44.0                     | [0.8]                            | -                                               | 194           | 57.7                       | 40.5                     | 1.3                              | [0.5]                                           | 856           |
| Assam                  | 64.8                       | 29.4                     | 2.6                              | 3.2                                             | 1,184         | 62.6                       | 26.8                     | 4.5                              | 6.1                                             | 419           | 64.3                       | 28.7                     | 3.1                              | 4.0                                             | 1,603         |
| Manipur                | 69.6                       | 26.1                     | 2.5                              | 1.8                                             | 547           | 66.6                       | 24.8                     | 3.6                              | 5.0                                             | 337           | 68.4                       | 25.6                     | 3.0                              | 3.1                                             | 884           |
| Meghalaya              | 48.3                       | 50.2                     | [0.6]                            | [0.9]                                           | 376           | 46.2                       | 52.6                     | -                                | [1.1]                                           | 196           | 47.6                       | 51.1                     | [0.4]                            | 1.0                                             | 572           |
| Mizoram                | 72.4                       | 23.4                     | 3.0                              | 1.2                                             | 476           | 63.1                       | 29.2                     | 4.2                              | 3.5                                             | 268           | 68.8                       | 25.6                     | 3.5                              | 2.1                                             | 744           |
| Nagaland               | 79.7                       | 18.9                     | 1.0                              | [0.4]                                           | 546           | 82.1                       | 17.9                     | -                                | -                                               | 354           | 80.7                       | 18.5                     | 0.6                              | [0.2]                                           | 900           |
| Tripura                | 66.8                       | 24.8                     | 4.5                              | 3.9                                             | 653           | 50.3                       | 33.5                     | 7.9                              | 8.3                                             | 359           | 60.7                       | 28.0                     | 5.7                              | 5.5                                             | 1,012         |
| <b>West</b>            |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |                            |                          |                                  |                                                 |               |
| Dadra & Nagar Haveli   | 39.5                       | 54.2                     | 3.0                              | 3.3                                             | 274           | 57.2                       | 37.3                     | [1.4]                            | 4.1                                             | 136           | 45.3                       | 48.7                     | 2.5                              | 3.6                                             | 410           |
| Daman & Diu            | 46.6                       | 41.9                     | 9.0                              | 2.4                                             | 227           | 43.8                       | 48.1                     | [2.6]                            | 5.4                                             | 142           | 45.5                       | 44.4                     | 6.5                              | 3.6                                             | 369           |
| Goa                    | 42.0                       | 48.5                     | 5.2                              | 4.3                                             | 213           | 41.5                       | 55.2                     | [2.6]                            | [0.7]                                           | 118           | 41.8                       | 51.0                     | 4.2                              | 3.0                                             | 331           |
| Gujarat                | 54.7                       | 31.6                     | 6.8                              | 7.0                                             | 442           | 47.0                       | 40.7                     | 5.7                              | 6.7                                             | 210           | 51.9                       | 34.8                     | 6.4                              | 6.9                                             | 652           |
| Maharashtra            | 44.6                       | 47.1                     | 3.7                              | 4.6                                             | 1,401         | 45.8                       | 46.4                     | 2.9                              | 4.9                                             | 931           | 45.1                       | 46.8                     | 3.3                              | 4.8                                             | 2,332         |

continued

continued

| State/ Union Territory    | Age 45-59*                 |                          |                                  |                                                 |        | Age ≥ 60                   |                          |                                  |                                                 |        | Total                      |                          |                                  |                                                 |        |
|---------------------------|----------------------------|--------------------------|----------------------------------|-------------------------------------------------|--------|----------------------------|--------------------------|----------------------------------|-------------------------------------------------|--------|----------------------------|--------------------------|----------------------------------|-------------------------------------------------|--------|
|                           | Normal<br>LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild<br>obstructive <sup>3</sup> | Moderate-<br>severe<br>obstructive <sup>4</sup> | Number | Normal<br>LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild<br>obstructive <sup>3</sup> | Moderate-<br>severe<br>obstructive <sup>4</sup> | Number | Normal<br>LFT <sup>1</sup> | Restrictive <sup>2</sup> | Mild<br>obstructive <sup>3</sup> | Moderate-<br>severe<br>obstructive <sup>4</sup> | Number |
| <b>South</b>              |                            |                          |                                  |                                                 |        |                            |                          |                                  |                                                 |        |                            |                          |                                  |                                                 |        |
| Andaman & Nicobar Islands | 51.4                       | 37.6                     | 5.8                              | 5.2                                             | 597    | 50.5                       | 38.3                     | 5.0                              | 6.2                                             | 362    | 51.1                       | 37.9                     | 5.5                              | 5.6                                             | 959    |
| Andhra Pradesh            | 40.8                       | 51.4                     | 4.6                              | 3.2                                             | 915    | 40.4                       | 48.1                     | 3.9                              | 7.6                                             | 417    | 40.7                       | 50.4                     | 4.4                              | 4.6                                             | 1,332  |
| Karnataka                 | 42.7                       | 48.7                     | 2.7                              | 5.9                                             | 417    | 37.7                       | 49.5                     | 5.7                              | 7.0                                             | 193    | 40.8                       | 49.0                     | 3.8                              | 6.3                                             | 610    |
| Kerala                    | 42.5                       | 52.5                     | 2.8                              | 2.2                                             | 355    | 42.6                       | 47.9                     | -                                | 9.5                                             | 185    | 42.5                       | 50.8                     | 1.8                              | 4.8                                             | 540    |
| Lakshadweep               | 22.7                       | 71.4                     | [1.5]                            | 4.5                                             | 124    | 36.2                       | 55.0                     | 8.8                              | -                                               | 75     | 27.7                       | 65.3                     | 4.2                              | 2.8                                             | 199    |
| Puducherry                | 32.4                       | 48.7                     | 5.6                              | 13.4                                            | 421    | 34.5                       | 33.6                     | 5.2                              | 26.6                                            | 179    | 33.1                       | 43.8                     | 5.4                              | 17.7                                            | 600    |
| Tamil Nadu                | 39.5                       | 48.6                     | 5.9                              | 6.0                                             | 865    | 45.7                       | 44.1                     | 4.5                              | 5.7                                             | 476    | 41.8                       | 46.9                     | 5.4                              | 5.9                                             | 1,341  |
| Telangana                 | 41.0                       | 51.5                     | 4.5                              | 3.0                                             | 776    | 44.4                       | 46.4                     | 4.8                              | 4.4                                             | 331    | 42.1                       | 49.8                     | 4.6                              | 3.5                                             | 1,107  |

Note

\* Including spouse irrespective of age. “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

| Parameter         | Normal PFT <sup>1</sup>                 | Restrictive <sup>2</sup>                 | Mild obstructive <sup>3</sup>            | Moderate-severe obstructive <sup>4</sup> |
|-------------------|-----------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| % predicted FVC   | ≥ 80%                                   | < 80%                                    | ≥ 80%                                    | < 80%                                    |
| Absolute FEV1/FVC | ≥ 70 (Age 45-59*) &<br>≥ 65% (Age ≥ 60) | ≥ 70% (Age 45-59*) &<br>≥ 65% (Age ≥ 60) | < 70% (Age 45-59*) &<br>< 65% (Age ≥ 60) | < 70% (Age 45-59*) &<br>< 65% (Age ≥ 60) |

### 9.3 VISUAL ACUITY

Vision function is an important component of functional and general health, particularly in old age. Low vision or visual impairment is associated with a number of adverse outcomes on physical and mental health measures, such as lower cognitive functioning, depression (Choi et al., 2018), mortality (Wang et al., 2001), and poor general health (Wang et al., 2000). Visual impairment in the elderly significantly increases the risk of reduced functional ability over time independent of many demographics, lifestyle, and clinical factors (Peres et al., 2017).

According to the WHO, International Classification of Diseases (ICD) - 10th Revision, ‘a person with low vision is one who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception, or a visual field of less than 10 degree from the point of fixation, but uses, or is potentially able to use, vision for planning and/or execution of a task’ (Pizzarello et al., 2004). Further, ‘blindness’ is defined as visual acuity of less than 3/60 or a corresponding visual field loss of less than 10° in the better eye with the best possible correction. ‘Visual impairment’ includes both low vision (near or distance vision) and blindness.

In the LASI, for all consenting survey respondents, near vision and distance vision were measured for both eyes with the best correction available using the computer-assisted personal interviewing (CAPI)-based tumbling E log medicine administration record (MAR) chart. Near vision and distance vision were measured at 40 cm and 3 m, respectively. The scale orientations used in the E log MAR chart are 20/20, 20/25, 20/32, 20/40, 20/50, 20/63, 20/80, 20/125, 20/160, 20/250, 20/320, and 20/400 for near vision and 20/20, 20/25, 20/32, 20/40, 20/50, 20/63, 20/80, 20/125, 20/160, 20/250, and 20/320 for distance vision.

In the LASI, the vision function is categorised as:

- **Low near vision:** near vision equal to or poorer than 20/80 and equal to or better than 20/400 in the better eye with the best correction available with respondent.
- **Low distance vision:** distance vision equal to or poorer than 20/80 and equal to or better than 20/200 in the better eye with the best correction available with respondent.
- **Low vision:** either low near or low distance vision in the better eye with the best correction available with the respondent.
- **Blindness:** distance vision lower than 20/200 or could not count fingers or perceive light.

### 9.3.1 Prevalence of visual impairment

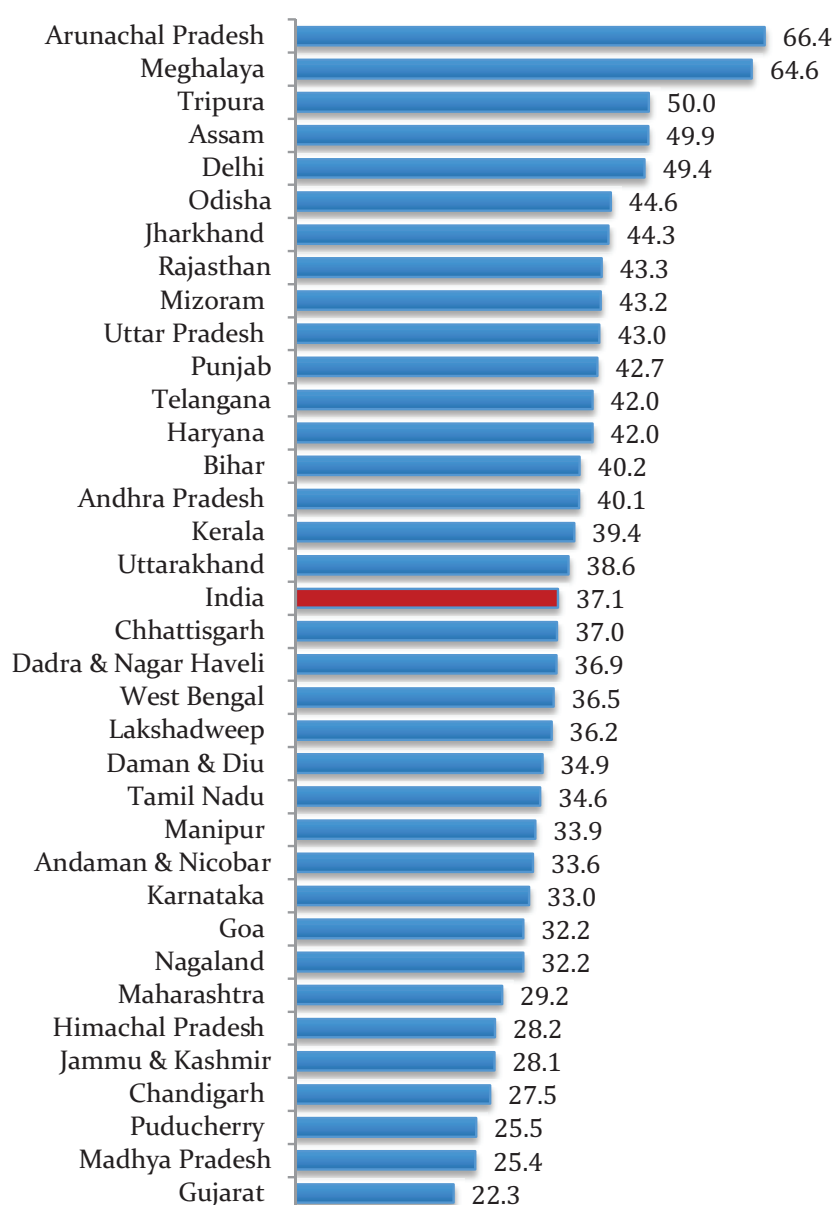
This section presents the prevalence of low vision (near, distance, and overall). The prevalence of each type of low vision (measured) is presented by background characteristics in Table 9.17. The prevalence of low vision (low near or low distance) with best correction among older adults age 45 and above is 31% in India. The prevalence of low vision is much higher among elderly age 60 and above (37%), particularly among elderly women (40%). The prevalence of low vision is higher among elderly living in rural areas (40%) than among those living in urban areas (31%) and higher among those living with others only (43%) than among those living with spouse and children (34%). The prevalence of low visual acuity among elderly age 60 and above decreases with increasing educational attainment and household MPCE quintile. A higher proportion of elderly age 60 and above with no schooling (43%) and those in the poorest MPCE quintile (40%) have low visual acuity compared to those with 10 or more years of schooling (21%) and those in the richest quintile (34%), suggesting better access to healthcare and better correction of vision among the latter groups.

Overall, the prevalence of low near vision (28%) among older adults age 45 and above in India is three-fold higher than the prevalence of low distance vision (9%). This difference is consistent in both older adults age 45-59 and the elderly age 60 and above. The prevalence of low near and low distance vision is higher among elderly age 60 and above (32% and 15%, respectively) than among older adults age 45-59 (24% and 4% respectively). The rural elderly (34% and 16%, respectively) and elderly women (36% and 16%, respectively) age 60 and above have higher prevalence of low near and low distance visual acuity than do the urban elderly (27% and 10%, respectively) and elderly men (29% and 14%, respectively). Among elderly age 60 and above, the prevalence of both low near and low distance vision is higher among divorced/deserted/separated, those living with others only, and those from a Scheduled caste/tribe (compared to those of other caste), and the prevalence rate decreases with increases in educational attainment.

The cross-state variations in the measured prevalence of low vision, low near, and low distance visual acuity are presented in Table 9.18. The prevalence of low vision (either low near or low distance) among older adults age 45 and above varies from 53% in Meghalaya to 17% in Gujarat. The prevalence of low near vision among elderly age 60 and above is much higher in the states of Meghalaya (60%), Arunachal Pradesh (58%), Delhi (47%), Tripura (45%), and Assam (44%). More than one-fifth of elderly age 60 and above have low distance vision in Arunachal Pradesh (38%), Dadra & Nagar Haveli (24%), Assam (22%), Daman & Diu (22%), Tripura (22%), and Telangana (21%).



**Figure 9.10 Measured prevalence (%) of low vision\* (near and/or distance) among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



Note

\* Low vision refers to either low near vision or low distance vision in the better eye with best correction available for the respondent.

**Table 9.18 Prevalence (%) of low vision, low near vision and low distance vision among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*                   |                                  |                         |        | Age ≥ 60                     |                                  |                         |        | Total                        |                                  |                         |        |
|------------------------------------------|------------------------------|----------------------------------|-------------------------|--------|------------------------------|----------------------------------|-------------------------|--------|------------------------------|----------------------------------|-------------------------|--------|
|                                          | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number |
| <b>Place of residence</b>                |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Rural                                    | 26.2                         | 4.2                              | 28.1                    | 23,859 | 34.3                         | 16.4                             | 39.5                    | 18,955 | 30.0                         | 10.0                             | 33.4                    | 42,814 |
| Urban                                    | 18.9                         | 3.4                              | 20.7                    | 13,393 | 27.1                         | 10.3                             | 31.0                    | 9,523  | 22.4                         | 6.3                              | 25.1                    | 22,916 |
| <b>Sex</b>                               |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Male                                     | 19.9                         | 3.7                              | 22.0                    | 13,974 | 28.6                         | 13.8                             | 33.8                    | 13,712 | 24.4                         | 8.9                              | 28.1                    | 27,686 |
| Female                                   | 26.2                         | 4.1                              | 27.8                    | 23,278 | 35.5                         | 15.5                             | 40.0                    | 14,766 | 30.1                         | 8.8                              | 32.9                    | 38,044 |
| <b>Marital status</b>                    |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Currently married                        | 23.1                         | 3.7                              | 24.8                    | 32,432 | 29.7                         | 12.8                             | 34.5                    | 18,173 | 25.6                         | 7.1                              | 28.4                    | 50,605 |
| Widowed                                  | 30.7                         | 6.2                              | 33.8                    | 3,575  | 36.2                         | 17.6                             | 41.1                    | 9,579  | 34.9                         | 14.9                             | 39.4                    | 13,154 |
| Divorced/Separated/Deserted/ Others      | 24.1                         | 4.5                              | 25.9                    | 1,245  | 37.9                         | 21.0                             | 44.0                    | 726    | 29.3                         | 10.7                             | 32.6                    | 1,971  |
| <b>Living arrangement</b>                |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Living alone                             | 27.1                         | 8.0                              | 32.2                    | 643    | 35.0                         | 17.4                             | 39.8                    | 1,480  | 33.2                         | 15.2                             | 38.1                    | 2,123  |
| Living with spouse and/or others         | 24.7                         | 4.2                              | 26.5                    | 3,944  | 31.0                         | 14.7                             | 36.5                    | 5,558  | 28.5                         | 10.4                             | 32.4                    | 9,502  |
| Living with spouse and children          | 22.8                         | 3.6                              | 24.5                    | 27,896 | 29.0                         | 11.9                             | 33.5                    | 12,407 | 24.8                         | 6.2                              | 27.3                    | 40,303 |
| Living with children and others          | 30.8                         | 5.8                              | 33.5                    | 3,770  | 36.3                         | 17.4                             | 41.2                    | 7,570  | 34.8                         | 14.1                             | 39.0                    | 11,340 |
| Living with others only                  | 24.6                         | 4.5                              | 26.0                    | 999    | 37.8                         | 19.5                             | 43.1                    | 1,463  | 32.7                         | 13.7                             | 36.6                    | 2,462  |
| <b>Religion</b>                          |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Hindu                                    | 23.7                         | 4.0                              | 25.6                    | 27,340 | 32.4                         | 14.5                             | 37.0                    | 20,849 | 27.7                         | 8.8                              | 30.9                    | 48,189 |
| Muslim                                   | 25.0                         | 3.5                              | 26.0                    | 4,496  | 29.0                         | 15.5                             | 35.1                    | 3,389  | 26.8                         | 8.9                              | 30.1                    | 7,885  |
| Christian                                | 20.7                         | 4.6                              | 23.2                    | 3,735  | 35.9                         | 14.7                             | 41.8                    | 2,851  | 27.5                         | 9.1                              | 31.5                    | 6,586  |
| Others                                   | 26.5                         | 4.4                              | 27.8                    | 1,681  | 35.5                         | 16.0                             | 40.6                    | 1,389  | 30.8                         | 10.0                             | 34.0                    | 3,070  |
| <b>Caste/tribe</b>                       |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Scheduled tribe                          | 24.2                         | 4.1                              | 25.9                    | 6,818  | 35.2                         | 17.9                             | 40.5                    | 4,684  | 28.9                         | 10.0                             | 32.2                    | 11,502 |
| Scheduled caste                          | 27.0                         | 4.9                              | 29.4                    | 6,387  | 36.3                         | 17.5                             | 41.6                    | 4,657  | 31.2                         | 10.5                             | 34.9                    | 11,044 |
| Other backward class                     | 22.8                         | 3.9                              | 24.8                    | 13,972 | 31.5                         | 14.0                             | 36.3                    | 10,841 | 26.8                         | 8.5                              | 30.0                    | 24,813 |
| None of the above                        | 23.3                         | 3.3                              | 24.4                    | 10,075 | 29.8                         | 13.0                             | 34.2                    | 8,296  | 26.4                         | 7.9                              | 29.0                    | 18,371 |
| <b>Education</b>                         |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| No schooling                             | 30.3                         | 5.5                              | 32.6                    | 15,006 | 37.7                         | 17.3                             | 42.5                    | 15,243 | 34.2                         | 11.6                             | 37.8                    | 30,249 |
| Less than 5 years complete               | 24.7                         | 3.9                              | 26.2                    | 3,975  | 29.9                         | 16.0                             | 36.3                    | 3,491  | 27.2                         | 9.7                              | 31.1                    | 7,466  |
| 5-9 years complete                       | 21.0                         | 2.9                              | 22.5                    | 10,038 | 27.4                         | 11.6                             | 32.7                    | 5,500  | 23.5                         | 6.2                              | 26.4                    | 15,538 |
| 10 or more years complete                | 13.4                         | 1.9                              | 14.8                    | 8,233  | 17.9                         | 7.0                              | 20.9                    | 4,244  | 15.0                         | 3.7                              | 17.0                    | 12,477 |
| <b>Work status</b>                       |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Currently working                        | 21.7                         | 3.7                              | 23.6                    | 21,599 | 27.4                         | 12.4                             | 32.5                    | 8,542  | 23.4                         | 6.4                              | 26.4                    | 30,141 |
| Worked in past but currently not working | 26.1                         | 6.0                              | 28.7                    | 4,186  | 32.5                         | 16.6                             | 37.6                    | 12,048 | 30.9                         | 14.0                             | 35.5                    | 16,234 |
| Never worked                             | 27.5                         | 3.6                              | 28.7                    | 11,467 | 37.7                         | 14.4                             | 41.6                    | 7,888  | 31.9                         | 8.3                              | 34.3                    | 19,355 |

continued

continued

| Background characteristics | Age 45-59*                   |                                  |                         | Age ≥ 60 |                              |                                  | Total                   |        |                              |                                  |                         |        |
|----------------------------|------------------------------|----------------------------------|-------------------------|----------|------------------------------|----------------------------------|-------------------------|--------|------------------------------|----------------------------------|-------------------------|--------|
|                            | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number   | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number |
| MPCE quintile              |                              |                                  |                         |          |                              |                                  |                         |        |                              |                                  |                         |        |
| Poorest                    | 26.3                         | 4.7                              | 28.5                    | 7,102    | 34.9                         | 16.0                             | 40.2                    | 5,827  | 30.4                         | 10.0                             | 34.0                    | 12,929 |
| Poorer                     | 25.7                         | 4.5                              | 27.5                    | 7,385    | 35.0                         | 16.3                             | 39.9                    | 5,881  | 30.0                         | 10.0                             | 33.3                    | 13,266 |
| Middle                     | 24.8                         | 4.7                              | 27.2                    | 7,435    | 32.2                         | 14.1                             | 36.6                    | 5,854  | 28.2                         | 9.1                              | 31.6                    | 13,289 |
| Richer                     | 22.3                         | 3.0                              | 23.6                    | 7,739    | 28.6                         | 13.3                             | 33.9                    | 5,609  | 25.2                         | 7.7                              | 28.3                    | 13,348 |
| Richest                    | 19.9                         | 2.6                              | 21.2                    | 7,591    | 29.3                         | 13.2                             | 33.5                    | 5,307  | 23.9                         | 7.1                              | 26.4                    | 12,898 |
| Total                      | 23.9                         | 3.9                              | 25.7                    | 37,252   | 32.2                         | 14.7                             | 37.1                    | 28,478 | 27.7                         | 8.9                              | 30.9                    | 65,730 |

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Note

\* Including spouse irrespective of age.

<sup>1</sup> Low near vision refers to near vision equal to or poorer than 20/80 and equal to or better than 20/400 in the better eye with the best correction available for the respondent.

<sup>2</sup> Low distance vision refers to distance vision equal to or poorer than 20/80 and equal to or better than 20/200 in the better eye with the best correction available for the respondent.

<sup>3</sup> Low vision refers to either low near vision or low distant vision in the better eye with the best correction available for the respondent.

**Table 9.19 Prevalence (%) of low vision, low near vision and low distance vision among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*                   |                                  |                         |               |                              | Age ≥ 60                         |                         |               |                              |                                  | Total                   |               |        |
|-----------------------|------------------------------|----------------------------------|-------------------------|---------------|------------------------------|----------------------------------|-------------------------|---------------|------------------------------|----------------------------------|-------------------------|---------------|--------|
|                       | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number        | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number        | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number        | Number |
| <b>India</b>          | <b>23.9</b>                  | <b>3.9</b>                       | <b>25.7</b>             | <b>37,252</b> | <b>32.2</b>                  | <b>14.7</b>                      | <b>37.1</b>             | <b>28,478</b> | <b>27.7</b>                  | <b>8.9</b>                       | <b>30.9</b>             | <b>65,730</b> |        |
| <b>North</b>          |                              |                                  |                         |               |                              |                                  |                         |               |                              |                                  |                         |               |        |
| Chandigarh            | 18.9                         | 4.1                              | 20.5                    | 536           | 24.8                         | 7.6                              | 27.5                    | 333           | 21.2                         | 5.5                              | 23.3                    | 869           |        |
| Delhi                 | 28.4                         | 2.4                              | 29.8                    | 805           | 46.8                         | 13.8                             | 49.4                    | 482           | 35.3                         | 6.7                              | 37.2                    | 1,287         |        |
| Haryana               | 34.6                         | 4.1                              | 36.1                    | 945           | 37.0                         | 13.9                             | 42.0                    | 767           | 35.8                         | 8.8                              | 39.0                    | 1,712         |        |
| Himachal Pradesh      | 13.3                         | 0.6                              | 13.3                    | 733           | 26.0                         | 9.0                              | 28.2                    | 579           | 19.2                         | 4.6                              | 20.3                    | 1,312         |        |
| Jammu & Kashmir       | 19.6                         | 2.9                              | 21.3                    | 770           | 25.4                         | 9.6                              | 28.1                    | 628           | 22.5                         | 6.2                              | 24.6                    | 1,398         |        |
| Punjab                | 28.1                         | 3.0                              | 29.4                    | 1,045         | 37.9                         | 16.6                             | 42.7                    | 925           | 32.8                         | 9.5                              | 35.7                    | 1,970         |        |
| Rajasthan             | 30.2                         | 4.2                              | 31.3                    | 1,098         | 39.8                         | 14.0                             | 43.3                    | 988           | 35.0                         | 9.0                              | 37.2                    | 2,086         |        |
| Uttarakhand           | 28.3                         | 4.6                              | 31.1                    | 669           | 33.8                         | 12.1                             | 38.6                    | 607           | 31.1                         | 8.3                              | 34.8                    | 1,276         |        |
| <b>Central</b>        |                              |                                  |                         |               |                              |                                  |                         |               |                              |                                  |                         |               |        |
| Chhattisgarh          | 23.3                         | 3.4                              | 25.2                    | 1,218         | 32.1                         | 17.1                             | 37.0                    | 731           | 26.6                         | 8.6                              | 29.7                    | 1,949         |        |
| Madhya Pradesh        | 19.0                         | 1.8                              | 19.6                    | 1,458         | 20.1                         | 11.2                             | 25.4                    | 1,172         | 19.5                         | 6.2                              | 22.4                    | 2,630         |        |
| Uttar Pradesh         | 34.2                         | 4.6                              | 35.5                    | 2,216         | 37.9                         | 18.4                             | 43.0                    | 1,962         | 36.0                         | 11.4                             | 39.2                    | 4,178         |        |
| <b>East</b>           |                              |                                  |                         |               |                              |                                  |                         |               |                              |                                  |                         |               |        |
| Bihar                 | 31.0                         | 3.0                              | 32.3                    | 1,667         | 37.3                         | 12.1                             | 40.2                    | 1,744         | 34.4                         | 7.8                              | 36.5                    | 3,411         |        |
| Jharkhand             | 29.3                         | 5.7                              | 31.7                    | 1,217         | 38.2                         | 17.7                             | 44.3                    | 1,096         | 33.6                         | 11.5                             | 37.8                    | 2,313         |        |
| Odisha                | 25.1                         | 3.2                              | 26.5                    | 1,561         | 38.1                         | 19.8                             | 44.6                    | 1,101         | 30.7                         | 10.3                             | 34.3                    | 2,662         |        |
| West Bengal           | 20.1                         | 3.7                              | 21.6                    | 2,154         | 31.8                         | 15.5                             | 36.5                    | 1,383         | 24.8                         | 8.4                              | 27.6                    | 3,537         |        |
| <b>Northeast</b>      |                              |                                  |                         |               |                              |                                  |                         |               |                              |                                  |                         |               |        |
| Arunachal Pradesh     | 13.9                         | 7.2                              | 18.4                    | 852           | 58.4                         | 38.3                             | 66.4                    | 295           | 24.7                         | 14.8                             | 30.1                    | 1,147         |        |
| Assam                 | 24.6                         | 3.4                              | 25.8                    | 1,401         | 43.5                         | 21.8                             | 49.9                    | 728           | 31.3                         | 9.9                              | 34.3                    | 2,129         |        |
| Manipur               | 19.2                         | 2.2                              | 21.0                    | 663           | 27.5                         | 12.6                             | 33.9                    | 527           | 23.1                         | 7.0                              | 27.0                    | 1,190         |        |
| Meghalaya             | 42.6                         | 3.0                              | 43.8                    | 506           | 59.8                         | 15.4                             | 64.6                    | 376           | 49.9                         | 8.2                              | 52.6                    | 882           |        |
| Mizoram               | 27.7                         | 2.5                              | 28.8                    | 659           | 36.8                         | 17.3                             | 43.2                    | 470           | 31.7                         | 9.0                              | 35.1                    | 1,129         |        |
| Nagaland              | 15.5                         | 2.6                              | 17.5                    | 660           | 30.0                         | 10.4                             | 32.2                    | 564           | 22.6                         | 6.4                              | 24.7                    | 1,224         |        |
| Tripura               | 26.6                         | 4.2                              | 28.0                    | 676           | 44.5                         | 21.5                             | 50.0                    | 424           | 33.8                         | 11.1                             | 36.8                    | 1,100         |        |
| <b>West</b>           |                              |                                  |                         |               |                              |                                  |                         |               |                              |                                  |                         |               |        |
| Dadra & Nagar Haveli  | 18.3                         | 5.0                              | 20.8                    | 592           | 27.4                         | 23.7                             | 36.9                    | 408           | 21.8                         | 12.2                             | 27.0                    | 1,000         |        |
| Daman & Diu           | 17.0                         | 4.8                              | 18.7                    | 533           | 28.1                         | 21.6                             | 34.9                    | 398           | 22.1                         | 12.5                             | 26.2                    | 931           |        |
| Goa                   | 20.9                         | 1.4                              | 21.2                    | 689           | 30.1                         | 13.4                             | 32.2                    | 563           | 25.1                         | 6.9                              | 26.2                    | 1,252         |        |
| Gujarat               | 11.5                         | 3.2                              | 13.0                    | 1,191         | 15.4                         | 12.8                             | 22.3                    | 882           | 13.2                         | 7.5                              | 17.2                    | 2,073         |        |
| Maharashtra           | 19.6                         | 3.1                              | 20.4                    | 1,852         | 24.9                         | 12.2                             | 29.2                    | 1,529         | 22.2                         | 7.6                              | 24.7                    | 3,381         |        |

continued

continued

| State/Union Territory     | Age 45-59*                   |                                  |                         |        | Age ≥ 60                     |                                  |                         |        | Total                        |                                  |                         |        |
|---------------------------|------------------------------|----------------------------------|-------------------------|--------|------------------------------|----------------------------------|-------------------------|--------|------------------------------|----------------------------------|-------------------------|--------|
|                           | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number | Low near vision <sup>1</sup> | Low distance vision <sup>2</sup> | Low vision <sup>3</sup> | Number |
| South                     |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |
| Andaman & Nicobar Islands | 20.5                         | 2.6                              | 21.6                    | 666    | 27.8                         | 14.6                             | 33.6                    | 475    | 23.5                         | 7.6                              | 26.6                    | 1,141  |
| Andhra Pradesh            | 24.9                         | 7.1                              | 27.5                    | 1,307  | 32.8                         | 18.0                             | 40.1                    | 935    | 28.2                         | 11.7                             | 32.9                    | 2,242  |
| Karnataka                 | 20.6                         | 4.4                              | 23.7                    | 1,297  | 28.7                         | 11.8                             | 33.0                    | 921    | 23.9                         | 7.4                              | 27.5                    | 2,218  |
| Kerala                    | 29.3                         | 3.6                              | 30.9                    | 1,197  | 34.9                         | 15.6                             | 39.4                    | 1,094  | 32.2                         | 9.8                              | 35.2                    | 2,291  |
| Lakshadweep               | 24.8                         | 2.9                              | 26.1                    | 611    | 33.5                         | 8.4                              | 36.2                    | 475    | 28.9                         | 5.5                              | 30.9                    | 1,086  |
| Puducherry                | 13.9                         | 2.9                              | 15.7                    | 726    | 22.1                         | 9.7                              | 25.5                    | 571    | 17.7                         | 6.0                              | 20.2                    | 1,297  |
| Tamil Nadu                | 19.4                         | 4.3                              | 22.3                    | 1,890  | 29.7                         | 12.2                             | 34.6                    | 1,408  | 24.0                         | 7.9                              | 27.8                    | 3,298  |
| Telangana                 | 23.2                         | 6.0                              | 27.0                    | 1,192  | 34.3                         | 21.3                             | 42.0                    | 937    | 28.3                         | 13.0                             | 33.9                    | 2,129  |
| Note                      |                              |                                  |                         |        |                              |                                  |                         |        |                              |                                  |                         |        |

\* Including spouse irrespective of age.

<sup>1</sup>Low near vision refers to near vision equal to or poorer than 20/80 and equal to or better than 20/400 in the better eye with the best correction available with respondent.

<sup>2</sup>Low distance vision refers to distance vision equal to or poorer than 20/80 and equal to or better than 20/200 in the better eye with the best correction available with respondent.

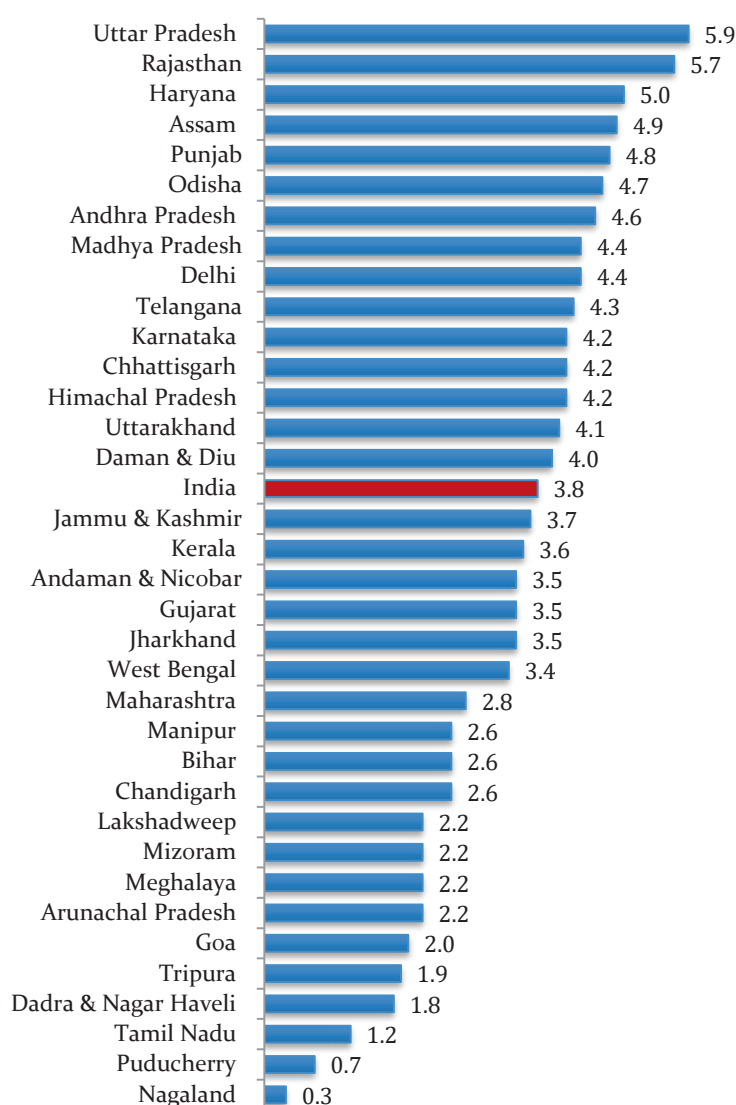
<sup>3</sup>Low vision refers to either low near vision or low distant vision in the better eye with the best correction available with the respondent.

### 9.3.2 Prevalence of blindness

The LASI also assessed the prevalence of blindness, in addition to vision measurement using the E Log MAR chart. To assess blindness, the survey participants were asked to count the fingers of a hand held at 2 feet in front of the respondent's eye. Respondents who failed to visualise the fingers or light were categorised as blind. When the respondent was able to count fingers, a vision test was conducted. Blindness was assessed based on distance vision measurement of less than 20/200.

Table 9.20 presents the results of the measured prevalence of blindness by background characteristics. The prevalence of blindness among older adults age 45 and above in India is 2%. The prevalence of blindness is more than six-fold higher among elderly age 60 and or above (3.8%) than among older adults age 45-59 (0.6%). Elderly age 60 and above from rural areas (4.3%) have a higher prevalence of blindness than those from urban areas (2.7%). The prevalence of blindness is higher among elderly living with others only (7.4%) than among those living with spouse and children (2.7%). Among elderly age 60 and above, the prevalence of blindness declines with education and household MPCE quintiles, ranging from 5% among elderly with no schooling and in the poorest MPCE quintile to 1% in those with 10 or more years of schooling and 3% in the richest MPCE quintile.

**Figure 9.11 Prevalence (%) of blindness\* among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18**



Note

\*Blindness refers to those with vision less than 20/200 in distance vision or could not count finger or perceive light.

The cross-state difference in the prevalence of blindness (measured) is presented in Table 9.20. The prevalence of blindness among older adults age 45 and above is the highest in Uttar Pradesh (3.5%), followed by Rajasthan (3.2%) and is the lowest in Nagaland (0.2%). Among elderly age 60 and above, the prevalence of blindness is more than 5% in Uttar Pradesh (5.9%), and Rajasthan (5.7%) whereas it is lower than 1% in Nagaland (0.3%) and Puducherry (0.7%). Among older adults age 45-59, the prevalence of blindness is lower than 1% in most states/UTs in India, with the exception of Uttar Pradesh (1.2%) and Chandigarh (1.2%).

**Table 9.20 Prevalence (%) of blindness among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Blindness <sup>1</sup> |               |            |               |            |               |
|------------------------------------------|------------------------|---------------|------------|---------------|------------|---------------|
|                                          | Age 45-59*             | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>Place of residence</b>                |                        |               |            |               |            |               |
| Rural                                    | 0.7                    | 23,859        | 4.3        | 18,955        | 2.4        | 42,814        |
| Urban                                    | 0.3                    | 13,393        | 2.7        | 9,523         | 1.3        | 22,916        |
| <b>Sex</b>                               |                        |               |            |               |            |               |
| Male                                     | 0.7                    | 13,974        | 3.2        | 13,712        | 2.0        | 27,686        |
| Female                                   | 0.6                    | 23,278        | 4.4        | 14,766        | 2.2        | 38,044        |
| <b>Marital status</b>                    |                        |               |            |               |            |               |
| Currently married                        | 0.5                    | 32,432        | 2.6        | 18,173        | 1.3        | 50,605        |
| Widowed                                  | 1.3                    | 3,575         | 5.9        | 9,579         | 4.8        | 13,154        |
| Divorced/Separated/Deserted/Others       | 0.6                    | 1,245         | 4.9        | 726           | 2.2        | 1,971         |
| <b>Living arrangement</b>                |                        |               |            |               |            |               |
| Living alone                             | [1.2]                  | 643           | 3.6        | 1,480         | 3.1        | 2,123         |
| Living with spouse and/or others         | 0.7                    | 3,944         | 2.4        | 5,558         | 1.7        | 9,502         |
| Living with spouse and children          | 0.5                    | 27,896        | 2.7        | 12,407        | 1.2        | 40,303        |
| Living with children and others          | 1.1                    | 3,770         | 5.9        | 7,570         | 4.6        | 11,340        |
| Living with others only                  | 0.9                    | 999           | 7.4        | 1,463         | 4.9        | 2,462         |
| <b>Religion</b>                          |                        |               |            |               |            |               |
| Hindu                                    | 0.6                    | 27,340        | 4.0        | 20,849        | 2.1        | 48,189        |
| Muslim                                   | 0.6                    | 4,496         | 2.8        | 3,389         | 1.6        | 7,885         |
| Christian                                | 0.6                    | 3,735         | 2.3        | 2,851         | 1.4        | 6,586         |
| Others                                   | 0.6                    | 1,681         | 4.9        | 1,389         | 2.7        | 3,070         |
| <b>Caste/tribe</b>                       |                        |               |            |               |            |               |
| Scheduled tribe                          | 0.5                    | 6,818         | 4.2        | 4,684         | 2.1        | 11,502        |
| Scheduled caste                          | 1.0                    | 6,387         | 5.0        | 4,657         | 2.8        | 11,044        |
| Other backward class                     | 0.5                    | 13,972        | 3.5        | 10,841        | 1.9        | 24,813        |
| None of the above                        | 0.5                    | 10,075        | 3.5        | 8,296         | 1.9        | 18,371        |
| <b>Education</b>                         |                        |               |            |               |            |               |
| No schooling                             | 0.8                    | 15,006        | 5.0        | 15,243        | 3.0        | 30,249        |
| Less than 5 years complete               | 0.4                    | 3,975         | 3.4        | 3,491         | 1.9        | 7,466         |
| 5-9 years complete                       | 0.5                    | 10,038        | 2.5        | 5,500         | 1.3        | 15,538        |
| 10 or more years complete                | 0.4                    | 8,233         | 1.3        | 4,244         | 0.7        | 12,477        |
| <b>Work status</b>                       |                        |               |            |               |            |               |
| Currently working                        | 0.4                    | 21,599        | 1.3        | 8,542         | 0.7        | 30,141        |
| Worked in past but currently not working | 1.4                    | 4,186         | 5.2        | 12,048        | 4.3        | 16,234        |
| Never worked                             | 0.6                    | 11,467        | 4.7        | 7,888         | 2.4        | 19,355        |
| <b>MPCE quintile</b>                     |                        |               |            |               |            |               |
| Poorest                                  | 0.8                    | 7,102         | 5.1        | 5,827         | 2.9        | 12,929        |
| Poorer                                   | 0.5                    | 7,385         | 4.2        | 5,881         | 2.2        | 13,266        |
| Middle                                   | 0.5                    | 7,435         | 3.4        | 5,854         | 1.9        | 13,289        |
| Richer                                   | 0.8                    | 7,739         | 3.1        | 5,609         | 1.9        | 13,348        |
| Richest                                  | 0.3                    | 7,591         | 3.0        | 5,307         | 1.5        | 12,898        |
| <b>Total</b>                             | <b>0.6</b>             | <b>37,252</b> | <b>3.8</b> | <b>28,478</b> | <b>2.1</b> | <b>65,730</b> |

Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

<sup>1</sup> Blindness refers to distance vision less than 20/200 or could not count finger or perceive light.



**Table 9.21 Prevalence (%) of blindness among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Blindness <sup>1</sup> |               |            |               |            |               |
|---------------------------|------------------------|---------------|------------|---------------|------------|---------------|
|                           | Age 45-59*             | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>India</b>              | <b>0.6</b>             | <b>37,252</b> | <b>3.8</b> | <b>28,478</b> | <b>2.1</b> | <b>65,730</b> |
| North                     |                        |               |            |               |            |               |
| Chandigarh                | 1.2                    | 536           | 2.6        | 333           | 1.7        | 869           |
| Delhi                     | [0.5]                  | 805           | 4.4        | 482           | 2.0        | 1,287         |
| Haryana                   | [0.4]                  | 945           | 5.0        | 767           | 2.6        | 1,712         |
| Himachal Pradesh          | 0.7                    | 733           | 4.2        | 579           | 2.3        | 1,312         |
| Jammu & Kashmir           | [0.3]                  | 770           | 3.7        | 628           | 2.0        | 1,398         |
| Punjab                    | 0.4                    | 1,045         | 4.8        | 925           | 2.5        | 1,970         |
| Rajasthan                 | 0.8                    | 1,098         | 5.7        | 988           | 3.2        | 2,086         |
| Uttarakhand               | 0.8                    | 669           | 4.1        | 607           | 2.4        | 1,276         |
| <b>Central</b>            |                        |               |            |               |            |               |
| Chhattisgarh              | 0.7                    | 1,218         | 4.2        | 731           | 2.0        | 1,949         |
| Madhya Pradesh            | 0.7                    | 1,458         | 4.4        | 1,172         | 2.4        | 2,630         |
| Uttar Pradesh             | 1.2                    | 2,216         | 5.9        | 1,962         | 3.5        | 4,178         |
| <b>East</b>               |                        |               |            |               |            |               |
| Bihar                     | [0.3]                  | 1,667         | 2.6        | 1,744         | 1.5        | 3,411         |
| Jharkhand                 | [0.3]                  | 1,217         | 3.5        | 1,096         | 1.9        | 2,313         |
| Odisha                    | 0.8                    | 1,561         | 4.7        | 1,101         | 2.5        | 2,662         |
| West Bengal               | 0.3                    | 2,154         | 3.4        | 1,383         | 1.6        | 3,537         |
| <b>Northeast</b>          |                        |               |            |               |            |               |
| Arunachal Pradesh         | [0.3]                  | 852           | 2.2        | 295           | 0.7        | 1,147         |
| Assam                     | 0.3                    | 1,401         | 4.9        | 728           | 1.9        | 2,129         |
| Manipur                   | [0.6]                  | 663           | 2.6        | 527           | 1.5        | 1,190         |
| Meghalaya                 | [0.7]                  | 506           | 2.2        | 376           | 1.3        | 882           |
| Mizoram                   | -                      | 659           | 2.2        | 470           | 1.0        | 1,129         |
| Nagaland                  | -                      | 660           | [0.3]      | 564           | [0.2]      | 1,224         |
| Tripura                   | [0.3]                  | 676           | 1.9        | 424           | 0.9        | 1,100         |
| <b>West</b>               |                        |               |            |               |            |               |
| Dadra & Nagar Haveli      | [0.2]                  | 592           | 1.8        | 408           | 0.8        | 1,000         |
| Daman & Diu               | [0.3]                  | 533           | 4.0        | 398           | 2.0        | 931           |
| Goa                       | [0.1]                  | 689           | 2.0        | 563           | 1.0        | 1,252         |
| Gujarat                   | 0.7                    | 1,191         | 3.5        | 882           | 2.0        | 2,073         |
| Maharashtra               | 0.5                    | 1,852         | 2.8        | 1,529         | 1.7        | 3,381         |
| <b>South</b>              |                        |               |            |               |            |               |
| Andaman & Nicobar Islands | 0.7                    | 666           | 3.5        | 475           | 1.9        | 1,141         |
| Andhra Pradesh            | 0.9                    | 1,307         | 4.6        | 935           | 2.5        | 2,242         |
| Karnataka                 | 0.8                    | 1,297         | 4.2        | 921           | 2.2        | 2,218         |
| Kerala                    | 0.9                    | 1,197         | 3.6        | 1,094         | 2.3        | 2,291         |
| Lakshadweep               | [0.2]                  | 611           | 2.2        | 475           | 1.1        | 1,086         |
| Puducherry                | [0.3]                  | 726           | 0.7        | 571           | 0.5        | 1,297         |
| Tamil Nadu                | 0.6                    | 1,890         | 1.2        | 1,408         | 0.8        | 3,298         |
| Telangana                 | 0.5                    | 1,192         | 4.3        | 937           | 2.2        | 2,129         |

Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

<sup>1</sup> Blindness refers to distance vision less than 20/200 or could not count fingers or perceive light.

### Key findings: visual acuity

- Overall, 31% of older adults age 45 and above in India have low near or low distance vision (measured). Among elderly age 60 and above in India, 37% have low vision, compared to 26% of older adults age 45-59. The prevalence of low vision (low near or low distance) among elderly age 60 and above is comparatively higher in the states of Arunachal Pradesh (66%), Meghalaya (65%), Tripura (50%), and Delhi (49%).
- More than a quarter of older adults age 45 and above in India have low near vision and 9% have low distance vision. The prevalence of low near and low distance vision among elderly age 60 and above is 32% and 15% respectively.
- The prevalence of blindness among older adults age 45 and above in India is 2%. The prevalence of blindness is more than six times higher among elderly age 60 or above (3.8%) than among older adults age 45-59 (0.6%).
- The prevalence of blindness is higher among elderly residing in rural areas (4.3%) than among those in urban areas (2.7%). It is also higher among those with no schooling (5%) and those in the poorest MPCE quintile (5.1%). The prevalence of blindness among elderly age 60 and above is greater than 5% in the states of Uttar Pradesh (5.9%) and Rajasthan (5.7%).

## 9.4 ANTHROPOMETRY

Anthropometric measures are important for the assessment of the nutritional status of the elderly population. Diet and lifestyle, coupled with the maintenance of a healthy body weight, are important for the maintenance of good health for all age groups, but are crucial for healthy ageing (Leslie and Hankey, 2015). Anthropometric measurements, such as height, weight, waist circumference, and hip circumference, were performed for all LASI survey participants. Height was measured in centimetres using a stadiometer, and weight was measured in kilograms using a Seca 803 digital weighing scale. Waist and hip circumferences were measured in centimetres using a Gulick tape according to standard protocols.

### 9.4.1 Height, weight, and body mass index

Body mass index (BMI) is an important indicator of an individual's nutritional status. BMI is calculated by dividing an individual's weight (in kilograms) by the square of their height (in metres). In this section, we present the mean height, weight, and BMI by age and sex of older adults for the states/UTs of India.

Table 9.22 presents the mean height, weight, and BMI of older adult men and women by background characteristics. The mean height and weight of older adult men age 45 and above in India is 162.3 cm and 57.7 kg, respectively. Older women age 45 and above are 12 cm shorter and weigh 5 kg on average lower than older adult men. The mean height, weight, and BMI are lower among elderly men and women age 60 and above than among older adult men and women age 45-59.

The mean BMI of older adult women (23.1) is higher than that of older adult men age 45 and above (21.8). The mean BMI of elderly men and women age 60 and above (21.2 and 22.3, respectively) is slightly lower than that of older adult men and women age 45-59 (22.5 and 23.7, respectively). Elderly

men and women age 60 and above residing in urban areas have higher BMI (23.1 and 25, respectively) than their counterparts in rural areas (20.5 and 21.1, respectively). The mean BMI for both men and women increases with education and household MPCE quintile.

Tables 9.23 and 9.24 present the cross-state differences in the mean height, weight, and BMI of older adult men and women. The mean height among older adult men and women age 45 and above varies from 166.7 cm and 153.9 cm, respectively, in Haryana to 158.4 cm and 147.4 cm, respectively, in Meghalaya. Among older adult men age 45 and above, the mean weight is the highest in Punjab (66.9 kg) and the lowest in Meghalaya (54.1 kg), while among older adult women, the mean weight ranges from 64.1 kg in Chandigarh to 46.8 kg in Jharkhand and Meghalaya.

The mean BMI among older adult men age 45 and above varies from 24.8 in Delhi to 20.6 in Chhattisgarh and Madhya Pradesh. Among elderly men age 60 and above, the mean BMI is higher than 23 in Delhi (24.3), Lakshadweep (24), Chandigarh (23.8), Puducherry (23.6), Punjab (23.3), and Kerala (23.2). Among older adult women age 45 and above, the mean BMI ranges from 27.5 in Chandigarh to 21 in Chhattisgarh. Among elderly women age 60 and above, the mean BMI is in the overweight category (BMI >25) in the states/UTs of Chandigarh (26.8), Delhi (26), Daman & Diu (25.4), Punjab (25.3), and Puducherry (25.2).

**Table 9.22 Mean values of height, weight and Body Mass Index (BMI) among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics | Male         |             |                       |               |              |             |                       |               |              |             |                       |               |
|----------------------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|
|                            | Age 45-59*   |             |                       |               | Age ≥ 60     |             |                       |               | Total        |             |                       |               |
|                            | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        |
| <b>Place of residence</b>  |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Rural                      | 163.1        | 57.8        | 21.7                  | 8,996         | 161.1        | 53.4        | 20.5                  | 9,133         | 162.0        | 55.4        | 21.1                  | 18,129        |
| Urban                      | 163.9        | 65.2        | 24.2                  | 4,915         | 162.1        | 60.9        | 23.1                  | 4,376         | 163.1        | 63.1        | 23.7                  | 9,291         |
| <b>Religion</b>            |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Hindu                      | 163.3        | 59.8        | 22.3                  | 10,270        | 161.2        | 55.1        | 21.1                  | 9,879         | 162.2        | 57.3        | 21.7                  | 20,149        |
| Muslim                     | 163.0        | 61.3        | 23.0                  | 1,552         | 161.7        | 56.1        | 21.4                  | 1,618         | 162.3        | 58.6        | 22.2                  | 3,170         |
| Christian                  | 161.8        | 60.0        | 22.8                  | 1,428         | 160.6        | 55.6        | 21.5                  | 1,337         | 161.2        | 57.7        | 22.1                  | 2,765         |
| Others                     | 165.7        | 65.6        | 23.8                  | 661           | 163.6        | 59.0        | 21.9                  | 675           | 164.6        | 62.0        | 22.8                  | 1,336         |
| <b>Caste/tribe</b>         |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Scheduled tribe            | 161.2        | 54.2        | 20.8                  | 2,640         | 159.8        | 50.0        | 19.5                  | 2,203         | 160.5        | 52.2        | 20.2                  | 4,843         |
| Scheduled caste            | 162.0        | 56.7        | 21.6                  | 2,365         | 160.3        | 52.0        | 20.2                  | 2,203         | 161.1        | 54.3        | 20.9                  | 4,568         |
| Other backward class       | 163.6        | 61.1        | 22.8                  | 5,178         | 161.3        | 55.5        | 21.3                  | 5,193         | 162.4        | 58.2        | 22.0                  | 10,371        |
| None of the above          | 164.7        | 63.2        | 23.2                  | 3,728         | 162.6        | 58.9        | 22.2                  | 3,910         | 163.6        | 60.9        | 22.7                  | 7,638         |
| <b>Education</b>           |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| No schooling               | 161.9        | 55.5        | 21.1                  | 3,622         | 160.2        | 51.3        | 19.9                  | 4,860         | 160.9        | 53.0        | 20.4                  | 8,482         |
| Less than 5 years complete | 162.5        | 56.8        | 21.5                  | 1,740         | 160.5        | 53.5        | 20.7                  | 2,000         | 161.4        | 54.9        | 21.0                  | 3,740         |
| 5-9 years complete         | 163.5        | 60.3        | 22.5                  | 4,319         | 162.1        | 56.6        | 21.5                  | 3,492         | 162.8        | 58.6        | 22.0                  | 7,811         |
| 10 or more years complete  | 164.8        | 65.5        | 24.1                  | 4,230         | 163.2        | 62.4        | 23.4                  | 3,157         | 164.1        | 64.1        | 23.8                  | 7,387         |
| <b>MPCE quintile</b>       |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Poorest                    | 162.0        | 57.3        | 21.8                  | 2,677         | 159.9        | 51.9        | 20.3                  | 2,696         | 160.9        | 54.6        | 21.0                  | 5,373         |
| Poorer                     | 162.6        | 57.6        | 21.7                  | 2,751         | 160.6        | 53.4        | 20.7                  | 2,759         | 161.6        | 55.4        | 21.2                  | 5,510         |
| Middle                     | 163.2        | 59.0        | 22.1                  | 2,768         | 161.7        | 55.7        | 21.2                  | 2,762         | 162.4        | 57.2        | 21.6                  | 5,530         |
| Richer                     | 164.0        | 62.3        | 23.1                  | 2,890         | 162.1        | 56.8        | 21.6                  | 2,692         | 163.0        | 59.4        | 22.3                  | 5,582         |
| Richest                    | 165.0        | 64.9        | 23.8                  | 2,825         | 162.9        | 60.0        | 22.5                  | 2,600         | 164.0        | 62.5        | 23.2                  | 5,425         |
| <b>Total</b>               | <b>163.3</b> | <b>60.1</b> | <b>22.5</b>           | <b>13,911</b> | <b>161.4</b> | <b>55.3</b> | <b>21.2</b>           | <b>13,509</b> | <b>162.3</b> | <b>57.7</b> | <b>21.8</b>           | <b>27,420</b> |

continued

continued

| Background characteristics | Female       |             |                       |               |              |             |                       |               |              |             |                       |               |
|----------------------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|
|                            | Age 45-59*   |             |                       |               | Age ≥ 60     |             |                       |               | Total        |             |                       |               |
|                            | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        |
| <b>Place of residence</b>  |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Rural                      | 151.0        | 51.6        | 22.6                  | 14,791        | 148.0        | 46.4        | 21.1                  | 9,556         | 149.7        | 49.4        | 21.9                  | 24,347        |
| Urban                      | 152.0        | 60.7        | 26.2                  | 8,431         | 149.2        | 55.8        | 25.0                  | 4,985         | 150.9        | 58.8        | 25.7                  | 13,416        |
| <b>Religion</b>            |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Hindu                      | 151.2        | 54.2        | 23.6                  | 16,984        | 148.3        | 49.0        | 22.2                  | 10,644        | 150.0        | 52.1        | 23.0                  | 27,628        |
| Muslim                     | 151.5        | 56.6        | 24.6                  | 2,924         | 148.0        | 49.1        | 22.3                  | 1,704         | 150.1        | 53.7        | 23.7                  | 4,628         |
| Christian                  | 151.1        | 51.5        | 22.5                  | 2,301         | 148.5        | 49.5        | 22.4                  | 1,489         | 150.1        | 50.7        | 22.4                  | 3,790         |
| Others                     | 153.1        | 58.5        | 24.9                  | 1,013         | 150.8        | 54.2        | 23.7                  | 704           | 152.1        | 56.7        | 24.4                  | 1,717         |
| <b>Caste/tribe</b>         |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Scheduled tribe            | 150.5        | 48.5        | 21.4                  | 4,158         | 147.8        | 43.6        | 19.9                  | 2,431         | 149.4        | 46.5        | 20.8                  | 6,589         |
| Scheduled caste            | 150.2        | 51.8        | 22.9                  | 4,005         | 147.3        | 45.7        | 21.0                  | 2,376         | 149.0        | 49.4        | 22.1                  | 6,381         |
| Other backward class       | 151.7        | 55.5        | 24.1                  | 8,753         | 148.6        | 50.2        | 22.6                  | 5,470         | 150.4        | 53.3        | 23.5                  | 14,223        |
| None of the above          | 151.9        | 57.1        | 24.6                  | 6,306         | 148.9        | 51.8        | 23.3                  | 4,264         | 150.6        | 54.8        | 24.1                  | 10,570        |
| <b>Education</b>           |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| No schooling               | 150.5        | 51.0        | 22.5                  | 11,341        | 147.9        | 46.5        | 21.2                  | 10,124        | 149.2        | 48.8        | 21.9                  | 21,465        |
| Less than 5 years complete | 150.9        | 53.7        | 23.5                  | 2,224         | 148.0        | 51.4        | 23.3                  | 1,449         | 149.7        | 52.8        | 23.5                  | 3,673         |
| 5-9 years complete         | 151.6        | 57.4        | 24.9                  | 5,685         | 150.1        | 56.2        | 24.8                  | 1,932         | 151.2        | 57.1        | 24.9                  | 7,617         |
| 10 or more years complete  | 153.9        | 63.0        | 26.5                  | 3,972         | 151.1        | 63.4        | 27.7                  | 1,036         | 153.3        | 63.1        | 26.8                  | 5,008         |
| <b>MPCE quintile</b>       |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Poorest                    | 150.8        | 51.5        | 22.6                  | 4,392         | 147.4        | 45.3        | 20.8                  | 3,026         | 149.3        | 48.8        | 21.8                  | 7,418         |
| Poorer                     | 150.7        | 53.1        | 23.3                  | 4,617         | 147.9        | 47.4        | 21.6                  | 3,038         | 149.5        | 50.7        | 22.6                  | 7,655         |
| Middle                     | 151.5        | 54.3        | 23.6                  | 4,652         | 148.4        | 48.6        | 22.0                  | 3,007         | 150.2        | 51.9        | 22.9                  | 7,659         |
| Richer                     | 151.5        | 54.9        | 23.9                  | 4,822         | 149.0        | 52.0        | 23.3                  | 2,836         | 150.5        | 53.7        | 23.6                  | 7,658         |
| Richest                    | 152.3        | 59.4        | 25.6                  | 4,739         | 149.6        | 54.6        | 24.3                  | 2,634         | 151.3        | 57.6        | 25.1                  | 7,373         |
| <b>Total</b>               | <b>151.3</b> | <b>54.5</b> | <b>23.7</b>           | <b>23,222</b> | <b>148.4</b> | <b>49.2</b> | <b>22.3</b>           | <b>14,541</b> | <b>150.1</b> | <b>52.4</b> | <b>23.1</b>           | <b>37,763</b> |

Note

\* Including spouse irrespective of age.

<sup>1</sup> Body Mass Index (BMI) refers to weight in kilograms divided by height in meters squared (kg/m<sup>2</sup>).

**Table 9.23 Mean values of height, weight and Body Mass Index (BMI) among older adult male, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory    | Male         |             |                       |               |              |             |                       |               |              |             |                       |               |
|---------------------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|
|                           | Age 45-59*   |             |                       |               | Age ≥ 60     |             |                       |               | Total        |             |                       |               |
|                           | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        |
| <b>India</b>              | <b>163.3</b> | <b>60.1</b> | <b>22.5</b>           | <b>13,911</b> | <b>161.4</b> | <b>55.3</b> | <b>21.2</b>           | <b>13,509</b> | <b>162.3</b> | <b>57.7</b> | <b>21.8</b>           | <b>27,420</b> |
| <b>North</b>              |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Chandigarh                | 163.9        | 67.6        | 25.1                  | 218           | 164.8        | 65.0        | 23.8                  | 155           | 164.3        | 66.5        | 24.5                  | 373           |
| Delhi                     | 162.8        | 66.9        | 25.2                  | 335           | 161.8        | 63.6        | 24.3                  | 239           | 162.4        | 65.5        | 24.8                  | 574           |
| Haryana                   | 167.3        | 64.8        | 23.1                  | 371           | 166.0        | 59.5        | 21.5                  | 309           | 166.7        | 62.2        | 22.3                  | 680           |
| Himachal Pradesh          | 165.4        | 64.9        | 23.7                  | 238           | 162.3        | 59.5        | 22.4                  | 288           | 163.6        | 61.7        | 22.9                  | 526           |
| Jammu & Kashmir           | 165.8        | 64.1        | 23.3                  | 282           | 162.7        | 59.3        | 22.3                  | 327           | 164.0        | 61.3        | 22.7                  | 609           |
| Punjab                    | 167.5        | 70.6        | 25.1                  | 393           | 165.6        | 63.9        | 23.3                  | 457           | 166.5        | 66.9        | 24.1                  | 850           |
| Rajasthan                 | 165.7        | 60.3        | 21.9                  | 421           | 164.6        | 56.7        | 20.9                  | 456           | 165.1        | 58.4        | 21.4                  | 877           |
| Uttarakhand               | 164.0        | 62.3        | 23.1                  | 230           | 161.6        | 55.9        | 21.4                  | 283           | 162.6        | 58.6        | 22.1                  | 513           |
| <b>Central</b>            |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Chhattisgarh              | 163.4        | 56.0        | 20.9                  | 493           | 161.6        | 52.6        | 20.1                  | 365           | 162.6        | 54.6        | 20.6                  | 858           |
| Madhya Pradesh            | 164.5        | 58.4        | 21.5                  | 615           | 162.6        | 52.1        | 19.7                  | 563           | 163.6        | 55.2        | 20.6                  | 1,178         |
| Uttar Pradesh             | 163.2        | 57.0        | 21.4                  | 881           | 161.1        | 52.4        | 20.1                  | 1,010         | 162.1        | 54.5        | 20.7                  | 1,891         |
| <b>East</b>               |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Bihar                     | 162.8        | 58.6        | 22.1                  | 612           | 159.7        | 53.5        | 20.9                  | 883           | 160.9        | 55.5        | 21.4                  | 1,495         |
| Jharkhand                 | 161.5        | 57.6        | 22.0                  | 427           | 159.4        | 53.1        | 20.8                  | 543           | 160.3        | 55.1        | 21.3                  | 970           |
| Odisha                    | 161.6        | 56.3        | 21.4                  | 602           | 159.2        | 52.3        | 20.5                  | 526           | 160.5        | 54.4        | 21.0                  | 1,128         |
| West Bengal               | 161.7        | 57.5        | 21.9                  | 785           | 160.0        | 52.7        | 20.5                  | 671           | 160.9        | 55.3        | 21.3                  | 1,456         |
| <b>Northeast</b>          |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Arunachal Pradesh         | 159.9        | 59.4        | 23.2                  | 346           | 156.2        | 53.2        | 21.7                  | 162           | 158.8        | 57.5        | 22.7                  | 508           |
| Assam                     | 162.0        | 56.5        | 21.5                  | 517           | 161.1        | 53.2        | 20.5                  | 350           | 161.7        | 55.1        | 21.0                  | 867           |
| Manipur                   | 163.3        | 63.3        | 23.7                  | 282           | 161.0        | 57.4        | 22.1                  | 233           | 162.2        | 60.5        | 22.9                  | 515           |
| Meghalaya                 | 158.7        | 54.8        | 21.7                  | 186           | 157.9        | 53.1        | 21.2                  | 147           | 158.4        | 54.1        | 21.5                  | 333           |
| Mizoram                   | 161.8        | 61.7        | 23.5                  | 266           | 159.7        | 56.4        | 22.1                  | 233           | 160.7        | 59.0        | 22.8                  | 499           |
| Nagaland                  | 161.2        | 59.8        | 23.0                  | 275           | 159.8        | 57.8        | 22.6                  | 283           | 160.4        | 58.7        | 22.8                  | 558           |
| Tripura                   | 160.7        | 55.8        | 21.5                  | 241           | 159.7        | 52.6        | 20.5                  | 206           | 160.2        | 54.3        | 21.1                  | 447           |
| <b>West</b>               |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Dadra & Nagar Haveli      | 162.9        | 60.5        | 22.7                  | 254           | 159.9        | 54.2        | 21.1                  | 177           | 161.8        | 58.1        | 22.1                  | 431           |
| Daman & Diu               | 163.9        | 66.5        | 24.7                  | 209           | 162.0        | 60.7        | 23.0                  | 160           | 163.0        | 63.8        | 23.9                  | 369           |
| Goa                       | 164.0        | 64.8        | 24.0                  | 239           | 161.9        | 60.5        | 23.0                  | 256           | 162.8        | 62.5        | 23.5                  | 495           |
| Gujarat                   | 163.9        | 60.0        | 22.2                  | 470           | 161.1        | 57.1        | 21.9                  | 401           | 162.5        | 58.6        | 22.1                  | 871           |
| Maharashtra               | 163.5        | 61.4        | 23.0                  | 647           | 161.6        | 58.2        | 22.2                  | 703           | 162.5        | 59.6        | 22.5                  | 1,350         |
| <b>South</b>              |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Andaman & Nicobar Islands | 162.0        | 64.3        | 24.5                  | 265           | 160.4        | 59.1        | 22.9                  | 249           | 161.2        | 61.8        | 23.7                  | 514           |
| Andhra Pradesh            | 163.2        | 65.0        | 24.3                  | 455           | 161.1        | 58.1        | 22.3                  | 455           | 162.1        | 61.5        | 23.3                  | 910           |
| Karnataka                 | 163.5        | 62.3        | 23.3                  | 447           | 161.4        | 56.1        | 21.5                  | 429           | 162.5        | 59.4        | 22.5                  | 876           |
| Kerala                    | 165.4        | 66.0        | 24.1                  | 406           | 162.6        | 61.6        | 23.2                  | 484           | 163.8        | 63.5        | 23.6                  | 890           |
| Lakshadweep               | 163.8        | 65.2        | 24.3                  | 192           | 160.7        | 62.2        | 24.0                  | 227           | 162.0        | 63.4        | 24.1                  | 419           |
| Puducherry                | 164.8        | 66.4        | 24.4                  | 253           | 162.2        | 62.1        | 23.6                  | 239           | 163.5        | 64.3        | 24.0                  | 492           |
| Tamil Nadu                | 162.6        | 62.5        | 23.6                  | 655           | 161.4        | 58.3        | 22.3                  | 611           | 162.0        | 60.4        | 23.0                  | 1,266         |
| Telangana                 | 162.8        | 62.3        | 23.4                  | 403           | 161.0        | 57.2        | 21.9                  | 429           | 161.8        | 59.5        | 22.6                  | 832           |

Note

\* Including spouse irrespective of age.

<sup>1</sup> Body Mass Index (BMI) refers to weight in kilograms divided by height in meters squared (kg/m<sup>2</sup>).

**Table 9.24 Mean values of height, weight and Body Mass Index (BMI) among older adult female, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory    | Female       |             |                       |               |              |             |                       |               |              |             |                       |               |
|---------------------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|--------------|-------------|-----------------------|---------------|
|                           | Age 45-59*   |             |                       |               | Age ≥ 60     |             |                       |               | Total        |             |                       |               |
|                           | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        | Mean height  | Mean weight | Mean BMI <sup>1</sup> | Number        |
| <b>India</b>              | <b>151.3</b> | <b>54.5</b> | <b>23.7</b>           | <b>23,222</b> | <b>148.4</b> | <b>49.2</b> | <b>22.3</b>           | <b>14,541</b> | <b>150.1</b> | <b>52.4</b> | <b>23.1</b>           | <b>37,763</b> |
| <b>North</b>              |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Chandigarh                | 152.7        | 65.4        | 27.9                  | 316           | 151.4        | 61.8        | 26.8                  | 168           | 152.2        | 64.1        | 27.5                  | 484           |
| Delhi                     | 152.4        | 63.0        | 27.1                  | 466           | 150.5        | 58.7        | 26.0                  | 230           | 151.8        | 61.6        | 26.7                  | 696           |
| Haryana                   | 154.6        | 58.7        | 24.5                  | 565           | 153.1        | 53.2        | 22.7                  | 435           | 153.9        | 56.1        | 23.6                  | 1,000         |
| Himachal Pradesh          | 152.6        | 59.5        | 25.5                  | 494           | 149.1        | 53.8        | 24.1                  | 289           | 151.3        | 57.3        | 25.0                  | 783           |
| Jammu & Kashmir           | 154.2        | 62.1        | 26.1                  | 488           | 151.3        | 53.1        | 23.2                  | 284           | 152.9        | 58.3        | 24.9                  | 772           |
| Punjab                    | 154.1        | 64.1        | 27.0                  | 651           | 152.3        | 59.0        | 25.3                  | 460           | 153.3        | 62.0        | 26.3                  | 1,111         |
| Rajasthan                 | 153.9        | 53.7        | 22.6                  | 670           | 151.3        | 51.1        | 22.3                  | 526           | 152.7        | 52.5        | 22.5                  | 1,196         |
| Uttarakhand               | 151.8        | 56.6        | 24.5                  | 439           | 149.0        | 48.7        | 21.8                  | 320           | 150.6        | 53.2        | 23.4                  | 759           |
| <b>Central</b>            |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Chhattisgarh              | 152.0        | 49.3        | 21.3                  | 718           | 149.5        | 46.0        | 20.5                  | 352           | 151.2        | 48.2        | 21.0                  | 1,070         |
| Madhya Pradesh            | 151.9        | 53.2        | 23.0                  | 839           | 147.8        | 46.7        | 21.3                  | 590           | 150.2        | 50.4        | 22.3                  | 1,429         |
| Uttar Pradesh             | 150.0        | 51.5        | 22.8                  | 1,324         | 147.2        | 45.2        | 20.8                  | 916           | 148.8        | 48.8        | 21.9                  | 2,240         |
| <b>East</b>               |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Bihar                     | 150.2        | 50.9        | 22.5                  | 1,055         | 147.3        | 45.3        | 20.8                  | 843           | 148.9        | 48.3        | 21.7                  | 1,898         |
| Jharkhand                 | 149.6        | 48.5        | 21.6                  | 785           | 146.5        | 44.5        | 20.7                  | 543           | 148.2        | 46.8        | 21.2                  | 1,328         |
| Odisha                    | 150.2        | 49.9        | 22.0                  | 953           | 146.0        | 43.7        | 20.4                  | 551           | 148.6        | 47.5        | 21.4                  | 1,504         |
| West Bengal               | 150.1        | 52.2        | 23.1                  | 1,362         | 146.1        | 45.2        | 21.1                  | 694           | 148.7        | 49.7        | 22.4                  | 2,056         |
| <b>Northeast</b>          |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Arunachal Pradesh         | 151.2        | 54.7        | 23.9                  | 502           | 149.2        | 50.8        | 22.7                  | 127           | 150.8        | 54.0        | 23.6                  | 629           |
| Assam                     | 150.7        | 49.9        | 21.9                  | 882           | 147.5        | 44.6        | 20.4                  | 370           | 149.7        | 48.3        | 21.5                  | 1,252         |
| Manipur                   | 152.3        | 57.6        | 24.8                  | 380           | 149.0        | 51.0        | 22.9                  | 284           | 150.8        | 54.6        | 23.9                  | 664           |
| Meghalaya                 | 148.7        | 49.0        | 22.2                  | 318           | 145.5        | 43.7        | 20.6                  | 226           | 147.4        | 46.8        | 21.5                  | 544           |
| Mizoram                   | 151.5        | 53.8        | 23.4                  | 390           | 148.7        | 48.4        | 21.8                  | 234           | 150.5        | 51.7        | 22.8                  | 624           |
| Nagaland                  | 152.3        | 54.0        | 23.3                  | 387           | 149.1        | 49.5        | 22.2                  | 281           | 150.9        | 52.1        | 22.8                  | 668           |
| Tripura                   | 149.5        | 50.1        | 22.4                  | 435           | 144.5        | 42.3        | 20.2                  | 217           | 147.7        | 47.4        | 21.6                  | 652           |
| <b>West</b>               |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Dadra & Nagar Haveli      | 151.0        | 52.9        | 23.1                  | 336           | 148.7        | 45.9        | 20.7                  | 223           | 150.1        | 50.2        | 22.2                  | 559           |
| Daman & Diu               | 152.0        | 60.4        | 26.1                  | 323           | 149.0        | 56.5        | 25.4                  | 218           | 150.7        | 58.7        | 25.8                  | 541           |
| Goa                       | 152.2        | 58.6        | 25.2                  | 449           | 148.8        | 53.9        | 24.2                  | 312           | 150.8        | 56.6        | 24.8                  | 761           |
| Gujarat                   | 150.9        | 55.2        | 24.2                  | 718           | 148.5        | 50.8        | 23.0                  | 475           | 149.9        | 53.3        | 23.7                  | 1,193         |
| Maharashtra               | 151.2        | 55.9        | 24.4                  | 1,204         | 148.3        | 50.2        | 22.7                  | 805           | 149.9        | 53.3        | 23.6                  | 2,009         |
| <b>South</b>              |              |             |                       |               |              |             |                       |               |              |             |                       |               |
| Andaman & Nicobar Islands | 151.8        | 59.5        | 25.7                  | 399           | 149.3        | 52.5        | 23.5                  | 223           | 150.9        | 57.0        | 25.0                  | 622           |
| Andhra Pradesh            | 151.3        | 58.8        | 25.6                  | 843           | 147.8        | 52.6        | 24.0                  | 458           | 150.0        | 56.6        | 25.1                  | 1,301         |
| Karnataka                 | 152.5        | 56.8        | 24.3                  | 850           | 149.3        | 53.7        | 23.9                  | 475           | 151.3        | 55.6        | 24.2                  | 1,325         |
| Kerala                    | 153.5        | 60.5        | 25.7                  | 782           | 149.1        | 53.8        | 24.1                  | 588           | 151.4        | 57.4        | 24.9                  | 1,370         |
| Lakshadweep               | 151.0        | 59.0        | 25.9                  | 413           | 148.0        | 54.6        | 24.9                  | 235           | 149.8        | 57.3        | 25.5                  | 648           |
| Puducherry                | 151.8        | 60.3        | 26.2                  | 471           | 148.0        | 55.3        | 25.2                  | 324           | 150.2        | 58.2        | 25.7                  | 795           |
| Tamil Nadu                | 151.7        | 58.5        | 25.4                  | 1,231         | 149.3        | 52.5        | 23.6                  | 772           | 150.7        | 56.0        | 24.6                  | 2,003         |
| Telangana                 | 150.2        | 54.9        | 24.3                  | 784           | 147.5        | 51.5        | 23.6                  | 493           | 149.2        | 53.5        | 24.0                  | 1,277         |

Note

\* Including spouse irrespective of age.

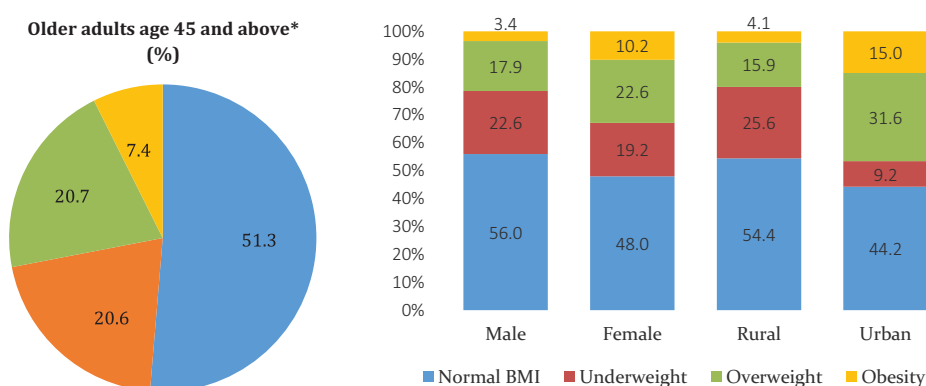
<sup>1</sup>Body Mass Index refers to weight in kilograms divided by height in meters squared (kg/m<sup>2</sup>).

### 9.4.2 Nutritional status

Based on the WHO classification, BMI levels are classified as underweight (BMI  $\leq 18.4$ ), normal (BMI 18.5 to 24.9), overweight (BMI 25 to 29.9), and obese (BMI  $\geq 30$ ). This section presents the prevalence of underweight, overweight, and obesity in India.

Figure 9.12 shows that half of older adults age 45 and above in India have BMI within the normal range (51%), while 21% are underweight, 21% are overweight, and 7% are obese. The prevalence of underweight, overweight, and obesity among older adults by background characteristics is presented in Table 9.25. A higher proportion of elderly age 60 and above (27%) than older adults age 45-59 (16%) are underweight. In contrast, a higher proportion of older adults age 45-59 are overweight and obese (24% and 9%, respectively) compared to elderly age 60 and above (17% and 6%, respectively). The proportion of underweight elderly age 60 and above residing in rural areas (32%) is almost three-fold the rate among those residing in urban areas (12%). In contrast, overweight and obesity are much more prevalent among elderly in urban areas (27% and 12%, respectively) than among those in rural areas (12% and 3%, respectively). The proportion of underweight elderly age 60 and above is higher among Scheduled tribe (41%) than among other caste, higher among those with no schooling (33%) than among those with 10 or more years of schooling (9%), and higher among those in the poorest MPCE quintile (35%) than among those in the richest MPCE quintile (16%). Among elderly age 60 and above, overweight and obesity are more common among women (18% and 8%, respectively) than among men (15% and 3%, respectively) and more common among elderly who have never worked (22% and 10%, respectively) than among those currently working (14% and 2%, respectively). A higher proportion of elderly age 60 and above with 10 or more years of schooling are overweight and obese (29% and 12%, respectively) than those with no schooling (12% and 4%, respectively). Similarly, a higher proportion of elderly age 60 and above in the richest MPCE quintile are overweight and obese (22% and 10%, respectively) compared to those in the poorest MPCE quintile (11% and 3%, respectively).

**Figure 9.12 Percent distribution of older adults age 45 and above\* according to their nutritional status (BMI) by sex and place of residence, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age.

The cross-state variations in the prevalence of underweight, overweight, and obesity are presented in Table 9.26. The prevalence of underweight among older adults age 45 and above is higher in the demographically less advanced eastern and central Indian states/UTs and much lower in the demographically advanced southern and northern Indian states/UTs, ranging from 32% in Chhattisgarh to 5% in Chandigarh, Delhi, and Lakshadweep. More than one-third of elderly age 60 and above are underweight in the states/UTs of Dadra & Nagar Haveli (40%), Odisha (37%), Tripura (37%), Uttar Pradesh (37%), Chhattisgarh (36%), Madhya Pradesh (35%), and Assam (34%).



**Table 9.25 Prevalence (%) of underweight, overweight and obesity among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59*               |                         |                      |        |                          |                         | Age ≥ 60             |        |                          |                         |                      |        | Total                |        |
|---------------------------------------------|--------------------------|-------------------------|----------------------|--------|--------------------------|-------------------------|----------------------|--------|--------------------------|-------------------------|----------------------|--------|----------------------|--------|
|                                             | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number | Obesity <sup>3</sup> | Number |
| <b>Place of residence</b>                   |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Rural                                       | 19.7                     | 18.9                    | 5.0                  | 23,787 | 32.4                     | 12.4                    | 3.0                  | 18,689 | 25.6                     | 15.9                    | 4.1                  | 42,476 |                      |        |
| Urban                                       | 7.0                      | 34.6                    | 17.4                 | 13,346 | 12.2                     | 27.4                    | 11.6                 | 9,361  | 9.2                      | 31.6                    | 15.0                 | 22,707 |                      |        |
| <b>Sex</b>                                  |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Male                                        | 16.6                     | 21.3                    | 4.2                  | 13,911 | 28.3                     | 14.8                    | 2.8                  | 13,509 | 22.6                     | 17.9                    | 3.4                  | 27,420 |                      |        |
| Female                                      | 15.0                     | 25.6                    | 11.8                 | 23,222 | 25.3                     | 18.3                    | 7.9                  | 14,541 | 19.2                     | 22.6                    | 10.2                 | 37,763 |                      |        |
| <b>Marital status</b>                       |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Currently married                           | 14.7                     | 24.4                    | 8.9                  | 32,341 | 24.6                     | 17.3                    | 5.4                  | 17,952 | 18.4                     | 21.8                    | 7.6                  | 50,293 |                      |        |
| Widowed                                     | 19.2                     | 23.2                    | 9.5                  | 3,558  | 30.0                     | 15.8                    | 5.7                  | 9,389  | 27.4                     | 17.6                    | 6.6                  | 12,947 |                      |        |
| Divorced/Separated/Deserted/<br>Others      | 30.5                     | 14.6                    | 8.3                  | 1,234  | 32.1                     | 12.4                    | 4.1                  | 709    | 31.1                     | 13.8                    | 6.7                  | 1,943  |                      |        |
| <b>Living arrangement</b>                   |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Living alone                                | 18.8                     | 18.2                    | 8.2                  | 641    | 30.9                     | 15.5                    | 3.9                  | 1,459  | 28.1                     | 16.2                    | 4.9                  | 2,100  |                      |        |
| Living with spouse and/or others            | 15.5                     | 23.4                    | 9.9                  | 3,926  | 25.2                     | 17.2                    | 4.4                  | 5,499  | 21.2                     | 19.7                    | 6.7                  | 9,425  |                      |        |
| Living with spouse and children             | 14.6                     | 24.5                    | 8.8                  | 27,824 | 24.4                     | 17.4                    | 5.9                  | 12,251 | 17.7                     | 22.3                    | 7.9                  | 40,075 |                      |        |
| Living with children and others             | 18.3                     | 24.1                    | 9.8                  | 3,751  | 28.8                     | 16.2                    | 6.4                  | 7,417  | 25.8                     | 18.4                    | 7.3                  | 11,168 |                      |        |
| Living with others only                     | 33.2                     | 14.3                    | 6.7                  | 991    | 35.0                     | 12.6                    | 3.2                  | 1,424  | 34.3                     | 13.2                    | 4.5                  | 2,415  |                      |        |
| <b>Religion</b>                             |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Hindu                                       | 15.9                     | 23.6                    | 8.3                  | 27,254 | 27.3                     | 16.4                    | 5.4                  | 20,523 | 21.1                     | 20.3                    | 7.0                  | 47,777 |                      |        |
| Muslim                                      | 13.1                     | 25.7                    | 13.2                 | 4,476  | 24.8                     | 16.5                    | 5.3                  | 3,322  | 18.2                     | 21.7                    | 9.7                  | 7,798  |                      |        |
| Christian                                   | 24.0                     | 20.7                    | 6.6                  | 3,729  | 23.2                     | 16.3                    | 4.9                  | 2,826  | 23.7                     | 18.8                    | 5.9                  | 6,555  |                      |        |
| Others                                      | 9.3                      | 30.0                    | 13.2                 | 1,674  | 20.6                     | 23.1                    | 8.4                  | 1,379  | 14.7                     | 26.6                    | 10.8                 | 3,053  |                      |        |
| <b>Caste/tribe</b>                          |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Scheduled tribe                             | 28.8                     | 13.1                    | 3.2                  | 6,798  | 40.6                     | 6.7                     | 1.0                  | 4,634  | 33.9                     | 10.4                    | 2.3                  | 11,432 |                      |        |
| Scheduled caste                             | 18.8                     | 19.3                    | 6.1                  | 6,370  | 33.7                     | 12.3                    | 3.0                  | 4,579  | 25.5                     | 16.2                    | 4.7                  | 10,949 |                      |        |
| Other backward class                        | 13.8                     | 25.9                    | 9.8                  | 13,931 | 25.8                     | 17.6                    | 5.9                  | 10,663 | 19.3                     | 22.1                    | 8.1                  | 24,594 |                      |        |
| None of the above                           | 11.6                     | 28.0                    | 11.7                 | 10,034 | 19.1                     | 21.0                    | 7.7                  | 8,174  | 15.2                     | 24.7                    | 9.8                  | 18,208 |                      |        |
| <b>Education</b>                            |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| No schooling                                | 21.2                     | 18.6                    | 5.4                  | 14,963 | 33.3                     | 11.9                    | 3.6                  | 14,984 | 27.5                     | 15.1                    | 4.5                  | 29,947 |                      |        |
| Less than 5 years complete                  | 18.6                     | 19.7                    | 7.0                  | 3,964  | 25.2                     | 16.5                    | 5.4                  | 3,449  | 21.8                     | 18.2                    | 6.2                  | 7,413  |                      |        |
| 5-9 years complete                          | 11.4                     | 27.3                    | 10.3                 | 10,004 | 20.4                     | 22.5                    | 6.2                  | 5,424  | 14.8                     | 25.5                    | 8.7                  | 15,428 |                      |        |
| 10 or more years complete                   | 7.3                      | 33.4                    | 15.8                 | 8,202  | 9.1                      | 28.8                    | 12.3                 | 4,193  | 8.0                      | 31.8                    | 14.6                 | 12,395 |                      |        |
| <b>Work status</b>                          |                          |                         |                      |        |                          |                         |                      |        |                          |                         |                      |        |                      |        |
| Currently working                           | 16.6                     | 21.6                    | 5.7                  | 21,571 | 28.6                     | 14.3                    | 2.2                  | 8,527  | 20.3                     | 19.4                    | 4.6                  | 30,098 |                      |        |
| Worked in past but currently not<br>working | 17.7                     | 24.1                    | 11.8                 | 4,135  | 27.9                     | 15.4                    | 5.0                  | 11,764 | 25.5                     | 17.6                    | 6.7                  | 15,899 |                      |        |
| Never worked                                | 12.7                     | 28.9                    | 14.7                 | 11,427 | 22.3                     | 21.5                    | 10.2                 | 7,759  | 16.9                     | 25.7                    | 12.8                 | 19,186 |                      |        |

continued

continued

| Background characteristics | Age 45-59*               |                         |                      |               |  | Age ≥ 60                 |                         |                      |               |  | Total                    |                         |                      |
|----------------------------|--------------------------|-------------------------|----------------------|---------------|--|--------------------------|-------------------------|----------------------|---------------|--|--------------------------|-------------------------|----------------------|
|                            | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number        |  | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number        |  | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> |
| <b>MPCE quintile</b>       |                          |                         |                      |               |  |                          |                         |                      |               |  |                          |                         |                      |
| Poorest                    | 20.8                     | 17.9                    | 5.8                  | 7,069         |  | 35.3                     | 10.7                    | 3.3                  | 5,722         |  | 27.6                     | 14.6                    | 4.7                  |
| Poorer                     | 18.1                     | 20.5                    | 7.5                  | 7,368         |  | 31.5                     | 13.4                    | 4.7                  | 5,797         |  | 24.3                     | 17.2                    | 6.2                  |
| Middle                     | 16.3                     | 23.5                    | 7.4                  | 7,420         |  | 26.7                     | 17.7                    | 4.2                  | 5,769         |  | 21.1                     | 20.8                    | 5.9                  |
| Richer                     | 14.3                     | 25.6                    | 10.0                 | 7,712         |  | 20.8                     | 21.0                    | 6.1                  | 5,528         |  | 17.2                     | 23.6                    | 8.3                  |
| Richest                    | 7.9                      | 33.2                    | 14.6                 | 7,564         |  | 15.9                     | 22.3                    | 10.2                 | 5,234         |  | 11.2                     | 28.6                    | 12.7                 |
| <b>Total</b>               | <b>15.6</b>              | <b>24.0</b>             | <b>9.0</b>           | <b>37,133</b> |  | <b>26.7</b>              | <b>16.7</b>             | <b>5.5</b>           | <b>28,050</b> |  | <b>20.6</b>              | <b>20.7</b>             | <b>7.4</b>           |
| <b>65,183</b>              |                          |                         |                      |               |  |                          |                         |                      |               |  |                          |                         |                      |

Note

\* Including spouse irrespective of age.

BMI levels have been classified according to the WHO classifications: <sup>1</sup>underweight ≤ 18.4; normal=18.5 to 24.9; <sup>2</sup>overweight=25.0 to 29.9; <sup>3</sup>obese ≥30.0

**Table 9.26 Prevalence (%) of underweight, overweight and obesity among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory | Age 45-59*               |                         |                      |               |                          |                         | Age ≥ 60             |               |                          |                         |                      |               | Total                    |                         |                      |
|------------------------|--------------------------|-------------------------|----------------------|---------------|--------------------------|-------------------------|----------------------|---------------|--------------------------|-------------------------|----------------------|---------------|--------------------------|-------------------------|----------------------|
|                        | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number        | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number        | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number        | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> |
| <b>India</b>           | <b>15.6</b>              | <b>24.0</b>             | <b>9.0</b>           | <b>37,133</b> | <b>26.7</b>              | <b>16.7</b>             | <b>5.5</b>           | <b>28,050</b> | <b>20.6</b>              | <b>20.7</b>             | <b>7.4</b>           | <b>65,183</b> |                          |                         |                      |
| <b>North</b>           |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |
| Chandigarh             | 3.7                      | 35.2                    | 25.9                 | 534           | 6.1                      | 26.1                    | 21.5                 | 323           | 4.7                      | 31.6                    | 24.2                 | 857           |                          |                         |                      |
| Delhi                  | 3.6                      | 37.7                    | 19.3                 | 801           | 8.4                      | 27.3                    | 18.2                 | 469           | 5.4                      | 33.8                    | 18.9                 | 1,270         |                          |                         |                      |
| Haryana                | 13.0                     | 24.4                    | 12.3                 | 936           | 22.1                     | 20.4                    | 4.9                  | 744           | 17.3                     | 22.5                    | 8.8                  | 1,680         |                          |                         |                      |
| Himachal Pradesh       | 5.6                      | 34.2                    | 14.2                 | 732           | 16.8                     | 27.0                    | 8.2                  | 577           | 10.8                     | 30.8                    | 11.4                 | 1,309         |                          |                         |                      |
| Jammu & Kashmir        | 6.7                      | 32.2                    | 16.1                 | 770           | 15.6                     | 22.4                    | 5.3                  | 611           | 11.0                     | 27.4                    | 10.8                 | 1,381         |                          |                         |                      |
| Punjab                 | 5.0                      | 35.8                    | 21.3                 | 1,044         | 11.3                     | 28.0                    | 12.8                 | 917           | 8.0                      | 32.1                    | 17.2                 | 1,961         |                          |                         |                      |
| Rajasthan              | 19.1                     | 18.8                    | 4.9                  | 1,091         | 26.0                     | 14.4                    | 5.1                  | 982           | 22.5                     | 16.6                    | 5.0                  | 2,073         |                          |                         |                      |
| Uttarakhand            | 11.2                     | 26.1                    | 11.1                 | 669           | 25.0                     | 15.7                    | 3.6                  | 603           | 18.0                     | 21.0                    | 7.4                  | 1,272         |                          |                         |                      |
| <b>Central</b>         |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |
| Chhattisgarh           | 29.7                     | 14.0                    | 2.6                  | 1,211         | 36.2                     | 11.1                    | 1.6                  | 717           | 32.2                     | 12.9                    | 2.2                  | 1,928         |                          |                         |                      |
| Madhya Pradesh         | 19.2                     | 18.8                    | 4.9                  | 1,454         | 35.3                     | 12.1                    | 2.8                  | 1,153         | 26.7                     | 15.7                    | 3.9                  | 2,607         |                          |                         |                      |
| Uttar Pradesh          | 21.5                     | 18.9                    | 6.0                  | 2,205         | 36.6                     | 11.5                    | 3.0                  | 1,926         | 28.9                     | 15.3                    | 4.5                  | 4,131         |                          |                         |                      |
| <b>East</b>            |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |
| Bihar                  | 17.9                     | 18.0                    | 5.7                  | 1,667         | 31.3                     | 10.8                    | 3.7                  | 1,726         | 25.1                     | 14.1                    | 4.6                  | 3,393         |                          |                         |                      |
| Jharkhand              | 22.2                     | 15.2                    | 4.1                  | 1,212         | 33.0                     | 12.3                    | 2.8                  | 1,086         | 27.4                     | 13.8                    | 3.5                  | 2,298         |                          |                         |                      |
| Odisha                 | 24.4                     | 16.1                    | 4.8                  | 1,555         | 37.1                     | 11.6                    | 3.4                  | 1,077         | 29.8                     | 14.2                    | 4.2                  | 2,632         |                          |                         |                      |
| West Bengal            | 16.6                     | 22.8                    | 5.5                  | 2,147         | 31.5                     | 11.9                    | 2.4                  | 1,365         | 22.6                     | 18.4                    | 4.3                  | 3,512         |                          |                         |                      |
| <b>Northeast</b>       |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |
| Arunachal Pradesh      | 7.0                      | 27.6                    | 5.8                  | 848           | 10.8                     | 14.4                    | 3.6                  | 289           | 7.9                      | 24.4                    | 5.2                  | 1,137         |                          |                         |                      |
| Assam                  | 19.8                     | 15.5                    | 2.5                  | 1,399         | 33.7                     | 11.0                    | 1.1                  | 720           | 24.7                     | 13.9                    | 2.0                  | 2,119         |                          |                         |                      |
| Manipur                | 5.8                      | 32.8                    | 8.4                  | 662           | 19.4                     | 21.7                    | 4.8                  | 517           | 12.1                     | 27.7                    | 6.7                  | 1,179         |                          |                         |                      |
| Meghalaya              | 13.4                     | 12.1                    | 2.8                  | 504           | 28.3                     | 10.2                    | 1.5                  | 373           | 19.7                     | 11.3                    | 2.2                  | 877           |                          |                         |                      |
| Mizoram                | 6.5                      | 22.4                    | 6.8                  | 656           | 18.2                     | 16.4                    | 4.8                  | 467           | 11.6                     | 19.8                    | 5.9                  | 1,123         |                          |                         |                      |
| Nagaland               | 4.7                      | 21.1                    | 3.0                  | 662           | 11.2                     | 15.9                    | 4.5                  | 564           | 7.9                      | 18.5                    | 3.7                  | 1,226         |                          |                         |                      |
| Tripura                | 20.2                     | 19.8                    | 3.7                  | 676           | 37.3                     | 12.8                    | [0.7]                | 423           | 27.0                     | 17.0                    | 2.5                  | 1,099         |                          |                         |                      |
| <b>West</b>            |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |               |                          |                         |                      |
| Dadra & Nagar Haveli   | 18.8                     | 21.9                    | 8.4                  | 590           | 40.1                     | 11.9                    | 6.5                  | 400           | 26.9                     | 18.0                    | 7.7                  | 990           |                          |                         |                      |
| Daman & Diu            | 7.4                      | 36.4                    | 17.9                 | 532           | 12.8                     | 27.1                    | 14.7                 | 378           | 9.8                      | 32.2                    | 16.5                 | 910           |                          |                         |                      |
| Goa                    | 7.9                      | 35.8                    | 12.1                 | 688           | 12.6                     | 23.9                    | 10.6                 | 568           | 10.1                     | 30.3                    | 11.4                 | 1,256         |                          |                         |                      |
| Gujarat                | 16.4                     | 25.2                    | 10.0                 | 1,188         | 21.7                     | 20.4                    | 7.5                  | 876           | 18.8                     | 23.0                    | 8.9                  | 2,064         |                          |                         |                      |
| Maharashtra            | 12.6                     | 27.0                    | 10.3                 | 1,851         | 20.2                     | 21.1                    | 6.7                  | 1,508         | 16.3                     | 24.1                    | 8.6                  | 3,359         |                          |                         |                      |

continued

continued

| State/ Union Territory    | Age 45-59*               |                         |                      |        |  | Age ≥ 60                 |                         |                      |        |  | Total                    |                         |                      |        |
|---------------------------|--------------------------|-------------------------|----------------------|--------|--|--------------------------|-------------------------|----------------------|--------|--|--------------------------|-------------------------|----------------------|--------|
|                           | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number |  | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number |  | Underweight <sup>1</sup> | Overweight <sup>2</sup> | Obesity <sup>3</sup> | Number |
| South                     |                          |                         |                      |        |  |                          |                         |                      |        |  |                          |                         |                      |        |
| Andaman & Nicobar Islands | 7.6                      | 35.6                    | 14.1                 | 664    |  | 14.8                     | 21.9                    | 7.2                  | 472    |  | 10.6                     | 30.0                    | 11.3                 | 1,136  |
| Andhra Pradesh            | 8.1                      | 35.8                    | 15.3                 | 1,298  |  | 15.3                     | 23.0                    | 9.3                  | 913    |  | 11.1                     | 30.4                    | 12.8                 | 2,211  |
| Karnataka                 | 11.9                     | 27.0                    | 12.7                 | 1,297  |  | 22.3                     | 21.4                    | 9.0                  | 904    |  | 16.1                     | 24.7                    | 11.2                 | 2,201  |
| Kerala                    | 4.1                      | 38.6                    | 10.6                 | 1,188  |  | 9.5                      | 28.8                    | 6.3                  | 1,072  |  | 6.8                      | 33.7                    | 8.4                  | 2,260  |
| Lakshadweep               | 5.0                      | 35.9                    | 13.3                 | 605    |  | 4.7                      | 28.8                    | 10.0                 | 462    |  | 4.8                      | 32.5                    | 11.8                 | 1,067  |
| Puducherry                | 6.0                      | 38.7                    | 14.9                 | 724    |  | 8.7                      | 26.9                    | 15.1                 | 563    |  | 7.2                      | 33.3                    | 15.0                 | 1,287  |
| Tamil Nadu                | 8.0                      | 30.0                    | 14.1                 | 1,886  |  | 18.5                     | 21.7                    | 7.4                  | 1,383  |  | 12.7                     | 26.3                    | 11.1                 | 3,269  |
| Telangana                 | 13.4                     | 26.6                    | 11.6                 | 1,187  |  | 19.7                     | 21.8                    | 7.2                  | 922    |  | 16.3                     | 24.4                    | 9.6                  | 2,109  |

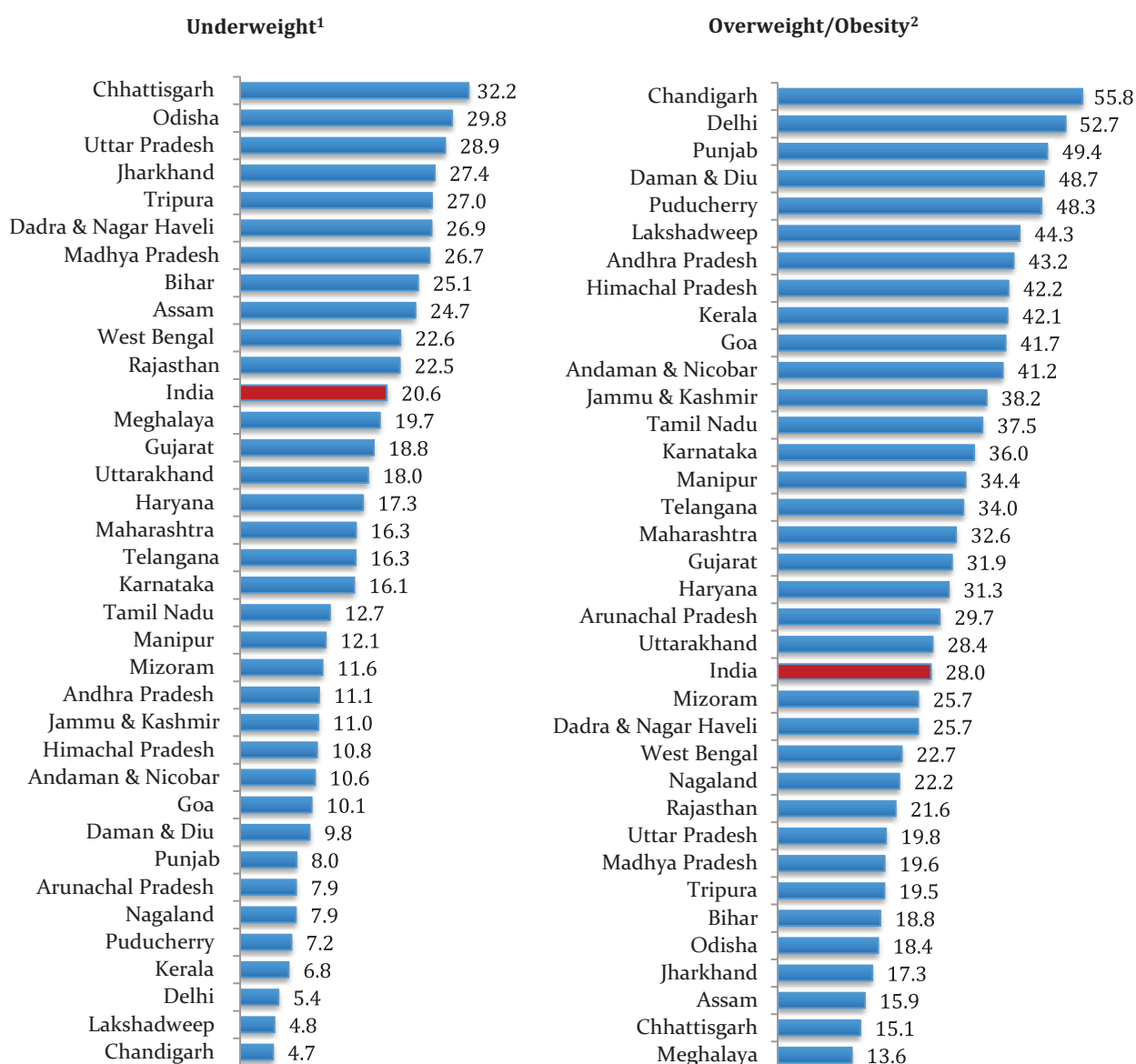
Note

\* *Including spouse irrespective of age*, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

BMI levels have been classified according to the WHO classifications: <sup>1</sup>underweight ≤ 18.4; normal= 18.5 to 24.9; <sup>2</sup>overweight=25.0 to 29.9; <sup>3</sup>obese ≥30.0

Figure 9.13 shows the cross-state variations in the prevalence of undernutrition (underweight) and overnutrition (overweight/obesity). Overall, the prevalence of overweight/obesity among older adults age 45 and above in India is 28%. Around half of older adults age 45 and above in Chandigarh (56%), Delhi (53%), and Punjab (49%) are either overweight or obese (Figure 9.13). Across the states of India, the prevalence of obesity among older adults age 45 and above ranges from 24% in Chandigarh to 2% in (Table 9.26). The prevalence of obesity among elderly age 60 and above is higher in the states/UTs of Chandigarh (22%), Delhi (18%), Puducherry (15%) and Daman & Diu (15%).

**Figure 9.13 Prevalence (%) of undernutrition (underweight) and overnutrition (overweight/obesity) among older adults age 45 and above\*, states/UTs, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age.

<sup>1</sup> Underweight refers to BMI  $\leq 18.4$ .

<sup>2</sup> Overweight/obesity refers to BMI  $\geq 25$

### 9.4.3 Waist and hip circumference

Body fat distribution is also an important risk factor for obesity-related diseases. Excess abdominal fat (also known as central or upper body fat) is associated with an increased risk of a cardio-metabolic disease. However, the precise measurement of abdominal fat content requires the use of expensive radiological imaging techniques. Therefore, waist circumference is often used as a surrogate marker of abdominal fat mass (Klein et al., 2007). Men and women who have waist circumferences of >102 cm and 88 cm, respectively, are considered to be at an increased risk of metabolic complications (WHO, 2011b).

Table 9.27 presents the mean waist and hip circumference for men and women by background characteristics. The mean waist and hip circumferences among older adult men age 45 and above in India are 85.3 cm and 89.4 cm, respectively, and those among older adult women are 84.5 cm and 93.0 cm, respectively. The mean waist and hip circumferences are lower among elderly men and women age 60 and above than among older adult men and women age 45-59. The mean waist and hip circumferences are higher among older adult men age 45 and above residing in urban than for those residing in rural areas. This urban-rural difference is even more pronounced among older adult women.

Cross-state variations in the mean waist and hip circumferences and waist-to-hip ratio of older adult men and women are presented in Table 9.28 and Table 9.29. Among older adult men and women age 45 and above, the mean waist and hip circumferences are comparatively higher in Delhi, Chandigarh, Punjab, and Puducherry.

Table 9.30 presents the prevalence of high-risk waist circumference among older adult men and women by background characteristics. The prevalence of a high-risk waist circumference among older women age 45 and above (39%) is four-fold the rate among older men (9%). The prevalence of high-risk waist circumference is lower among elderly women age 60 and above (37%) than among older women age 45-59 (41%). Among elderly men and women, the prevalence of a high-risk waist circumference is much higher among those residing in urban areas (17% and 58%, respectively) than among those residing in rural areas (6% and 28%, respectively). It is also higher among elderly men and women with 10 or more years of schooling (18% and 73%, respectively) than among those with no schooling (4% and 29%, respectively) and those in the richest MPCE quintile (14% and 52%, respectively) than among those in the poorest MPCE quintile (5% and 25%, respectively).

The state/UTs-level prevalence of high-risk waist circumference by sex is presented in Table 9.31. Among elderly men age 60 and above, the prevalence of high-risk waist circumference is the highest in Delhi (21%), followed by Punjab (19%), Chandigarh (18%), and Haryana (16%). Among older adult women age 45 and above, the prevalence of high-risk waist circumference ranges from 22% in Assam to 73% in Chandigarh. In 13 states/UTs, more than half of elderly women age 60 and above have high-risk waist circumference, with the highest prevalence observed in Chandigarh (76%), followed by Delhi (67%), Punjab (65%), and Kerala (64%).

**Table 9.27 Mean values of waist circumference, hip circumference and waist-to-hip ratio among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Male                     |                        |                         |               |                          |                        |                         |               |                          |                        |
|------------------------------------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|
|                                          | Age 45-59*               |                        |                         |               |                          | Age ≥ 60               |                         |               |                          |                        |
|                                          | Mean waist circumference | Mean hip circumference | Mean waist to hip ratio | Number        | Mean waist circumference | Mean hip circumference | Mean waist to hip ratio | Number        | Mean waist circumference | Mean hip circumference |
| <b>Place of residence</b>                |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Rural                                    | 84.1                     | 88.8                   | 0.95                    | 8,995         | 82.3                     | 87.0                   | 0.94                    | 9,131         | 83.1                     | 87.8                   |
| Urban                                    | 90.9                     | 94.5                   | 0.96                    | 4,913         | 90.4                     | 92.2                   | 0.98                    | 4,371         | 90.7                     | 93.4                   |
| <b>Marital status</b>                    |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Currently married                        | 86.5                     | 90.7                   | 0.95                    | 12,976        | 84.9                     | 88.8                   | 0.95                    | 11,122        | 85.7                     | 89.8                   |
| Widowed                                  | 82.9                     | 87.8                   | 0.94                    | 446           | 82.4                     | 86.9                   | 0.95                    | 2,032         | 82.5                     | 87.0                   |
| Divorced/Separated/<br>Deserted/Others   | 82.7                     | 88.3                   | 0.93                    | 486           | 81.6                     | 86.0                   | 0.95                    | 348           | 82.1                     | 87.2                   |
| <b>Education</b>                         |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| No schooling                             | 82.1                     | 87.4                   | 0.94                    | 3,621         | 80.3                     | 85.8                   | 0.93                    | 4,857         | 81.0                     | 86.4                   |
| Less than 5 years complete               | 83.5                     | 88.4                   | 0.94                    | 1,740         | 83.3                     | 87.4                   | 0.95                    | 1,998         | 83.4                     | 87.9                   |
| 5-9 years complete                       | 86.7                     | 90.7                   | 0.95                    | 4,318         | 85.6                     | 89.1                   | 0.96                    | 3,493         | 86.2                     | 90.0                   |
| 10 or more years complete                | 90.6                     | 94.2                   | 0.96                    | 4,229         | 91.0                     | 92.8                   | 0.98                    | 3,154         | 90.8                     | 93.6                   |
| <b>Work status</b>                       |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Currently working                        | 86.2                     | 90.6                   | 0.95                    | 12,235        | 83.5                     | 87.9                   | 0.95                    | 5,796         | 85.3                     | 89.7                   |
| Worked in past but currently not working | 86.6                     | 90.2                   | 0.96                    | 1,250         | 85.3                     | 88.9                   | 0.96                    | 7,059         | 85.5                     | 89.0                   |
| Never worked                             | 85.2                     | 90.0                   | 0.94                    | 423           | 83.2                     | 87.7                   | 0.95                    | 647           | 83.9                     | 88.5                   |
| <b>MPCE quintile</b>                     |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Poorest                                  | 83.6                     | 88.8                   | 0.94                    | 2,677         | 81.4                     | 86.3                   | 0.94                    | 2,695         | 82.5                     | 87.5                   |
| Poorer                                   | 84.5                     | 89.1                   | 0.95                    | 2,751         | 82.5                     | 87.0                   | 0.95                    | 2,760         | 83.5                     | 88.0                   |
| Middle                                   | 85.3                     | 89.7                   | 0.95                    | 2,768         | 84.6                     | 88.5                   | 0.95                    | 2,759         | 84.9                     | 89.1                   |
| Richer                                   | 88.1                     | 91.7                   | 0.96                    | 2,889         | 85.9                     | 89.4                   | 0.96                    | 2,691         | 87.0                     | 90.5                   |
| Richest                                  | 90.1                     | 94.0                   | 0.96                    | 2,823         | 88.4                     | 91.4                   | 0.97                    | 2,597         | 89.3                     | 92.7                   |
| <b>Total</b>                             | <b>86.2</b>              | <b>90.6</b>            | <b>0.95</b>             | <b>13,908</b> | <b>84.4</b>              | <b>88.4</b>            | <b>0.95</b>             | <b>13,502</b> | <b>85.3</b>              | <b>89.4</b>            |

continued



continued

| Background characteristics               | Female                   |                        |                         |               |                          |                        |                         |               |                          |                        |                         |               |
|------------------------------------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|-------------------------|---------------|
|                                          | Age 45-59*               |                        |                         |               |                          | Age ≥ 60               |                         |               |                          |                        | Total                   |               |
|                                          | Mean waist circumference | Mean hip circumference | Mean waist to hip ratio | Number        | Mean waist circumference | Mean hip circumference | Mean waist to hip ratio | Number        | Mean waist circumference | Mean hip circumference | Mean waist to hip ratio | Number        |
| <b>Place of residence</b>                |                          |                        |                         |               |                          |                        |                         |               |                          |                        |                         |               |
| Rural                                    | 82.0                     | 91.4                   | 0.90                    | 14,787        | 80.6                     | 88.6                   | 0.91                    | 9,548         | 81.4                     | 90.2                   | 0.90                    | 24,335        |
| Urban                                    | 91.5                     | 99.6                   | 0.92                    | 8,429         | 90.7                     | 97.6                   | 0.93                    | 4,977         | 91.2                     | 98.8                   | 0.92                    | 13,406        |
| <b>Marital status</b>                    |                          |                        |                         |               |                          |                        |                         |               |                          |                        |                         |               |
| Currently married                        | 85.3                     | 94.3                   | 0.90                    | 19,357        | 84.4                     | 92.2                   | 0.91                    | 6,822         | 85.1                     | 93.7                   | 0.91                    | 26,179        |
| Widowed                                  | 84.4                     | 93.5                   | 0.90                    | 3,111         | 83.1                     | 90.6                   | 0.92                    | 7,342         | 83.4                     | 91.3                   | 0.91                    | 10,453        |
| Divorced/Separated/<br>Deserted/Others   | 82.3                     | 91.3                   | 0.90                    | 748           | 81.8                     | 90.6                   | 0.90                    | 361           | 82.2                     | 91.1                   | 0.90                    | 1,109         |
| <b>Education</b>                         |                          |                        |                         |               |                          |                        |                         |               |                          |                        |                         |               |
| No schooling                             | 81.9                     | 91.1                   | 0.90                    | 11,339        | 81.0                     | 88.9                   | 0.91                    | 10,115        | 81.5                     | 90.1                   | 0.90                    | 21,454        |
| Less than 5 years complete               | 84.4                     | 94.0                   | 0.90                    | 2,224         | 87.0                     | 94.0                   | 0.92                    | 1,447         | 85.4                     | 94.0                   | 0.91                    | 3,671         |
| 5-9 years complete                       | 87.7                     | 96.7                   | 0.91                    | 5,682         | 91.2                     | 97.3                   | 0.93                    | 1,928         | 88.7                     | 96.8                   | 0.91                    | 7,610         |
| 10 or more years complete                | 92.7                     | 100.7                  | 0.92                    | 3,971         | 94.5                     | 103.4                  | 0.92                    | 1,035         | 93.1                     | 101.3                  | 0.92                    | 5,006         |
| <b>Work status</b>                       |                          |                        |                         |               |                          |                        |                         |               |                          |                        |                         |               |
| Currently working                        | 82.4                     | 92.3                   | 0.89                    | 9,331         | 79.8                     | 88.9                   | 0.90                    | 2,730         | 81.8                     | 91.4                   | 0.89                    | 12,061        |
| Worked in past but currently not working | 86.1                     | 95.2                   | 0.90                    | 2,884         | 82.4                     | 90.7                   | 0.91                    | 4,693         | 83.7                     | 92.3                   | 0.91                    | 7,577         |
| Never worked                             | 87.4                     | 95.5                   | 0.91                    | 11,001        | 86.2                     | 92.8                   | 0.93                    | 7,102         | 86.9                     | 94.4                   | 0.92                    | 18,103        |
| <b>MPCE quintile</b>                     |                          |                        |                         |               |                          |                        |                         |               |                          |                        |                         |               |
| Poorest                                  | 82.1                     | 91.4                   | 0.90                    | 4,392         | 79.6                     | 87.9                   | 0.90                    | 3,023         | 81.0                     | 89.9                   | 0.90                    | 7,415         |
| Poorer                                   | 83.8                     | 93.0                   | 0.90                    | 4,614         | 81.9                     | 89.8                   | 0.91                    | 3,033         | 83.0                     | 91.6                   | 0.90                    | 7,647         |
| Middle                                   | 84.7                     | 93.7                   | 0.90                    | 4,651         | 83.1                     | 90.7                   | 0.92                    | 3,005         | 84.1                     | 92.5                   | 0.91                    | 7,656         |
| Richer                                   | 85.6                     | 94.6                   | 0.90                    | 4,821         | 87.3                     | 93.8                   | 0.93                    | 2,834         | 86.3                     | 94.3                   | 0.91                    | 7,655         |
| Richest                                  | 89.7                     | 98.2                   | 0.91                    | 4,738         | 88.0                     | 96.1                   | 0.92                    | 2,630         | 89.1                     | 97.4                   | 0.91                    | 7,368         |
| <b>Total</b>                             | <b>85.1</b>              | <b>94.1</b>            | <b>0.90</b>             | <b>23,216</b> | <b>83.7</b>              | <b>91.3</b>            | <b>0.91</b>             | <b>14,525</b> | <b>84.5</b>              | <b>93.0</b>            | <b>0.91</b>             | <b>37,741</b> |

Table 9.28 Mean values of waist circumference, hip circumference and waist-to-hip ratio among older adult male, states/UTs, LASI Wave 1, 2017-18

| State/ Union Territory | Male                     |                        |                         |               |                          |                        |                         |               |                          |                        |
|------------------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|
|                        | Age 45-59*               |                        |                         |               |                          | Age ≥ 60               |                         |               |                          |                        |
|                        | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number        | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number        | Mean waist circumference | Mean hip circumference |
|                        |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| <b>India</b>           | <b>86.2</b>              | <b>90.6</b>            | <b>0.95</b>             | <b>13,908</b> | <b>84.4</b>              | <b>88.4</b>            | <b>0.95</b>             | <b>13,502</b> | <b>85.3</b>              | <b>89.4</b>            |
| <b>North</b>           |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Chandigarh             | 90.5                     | 91.4                   | 0.99                    | 217           | 91.9                     | 91.6                   | 1.00                    | 155           | 91.1                     | 91.5                   |
| Delhi                  | 93.9                     | 96.1                   | 0.98                    | 335           | 93.9                     | 95.6                   | 0.98                    | 239           | 93.9                     | 95.9                   |
| Haryana                | 91.1                     | 94.7                   | 0.96                    | 371           | 89.1                     | 91.9                   | 0.97                    | 308           | 90.2                     | 93.4                   |
| Himachal Pradesh       | 89.5                     | 93.1                   | 0.96                    | 238           | 88.7                     | 91.0                   | 0.97                    | 288           | 89.0                     | 91.9                   |
| Jammu & Kashmir        | 89.9                     | 93.1                   | 0.97                    | 282           | 88.6                     | 91.4                   | 0.97                    | 327           | 89.1                     | 92.1                   |
| Punjab                 | 93.4                     | 93.7                   | 0.99                    | 393           | 90.8                     | 91.4                   | 0.99                    | 456           | 92.0                     | 92.5                   |
| Rajasthan              | 85.7                     | 90.2                   | 0.95                    | 421           | 84.5                     | 89.3                   | 0.94                    | 456           | 85.1                     | 89.7                   |
| Uttarakhand            | 91.1                     | 93.0                   | 0.98                    | 230           | 89.5                     | 90.7                   | 0.99                    | 283           | 90.2                     | 91.7                   |
| <b>Central</b>         |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Chhattisgarh           | 82.0                     | 87.7                   | 0.93                    | 493           | 81.7                     | 86.9                   | 0.94                    | 365           | 81.9                     | 87.3                   |
| Madhya Pradesh         | 85.2                     | 90.6                   | 0.94                    | 614           | 81.4                     | 88.0                   | 0.92                    | 563           | 83.3                     | 89.3                   |
| Uttar Pradesh          | 84.1                     | 87.7                   | 0.96                    | 881           | 81.9                     | 85.9                   | 0.95                    | 1,010         | 82.9                     | 86.7                   |
| <b>East</b>            |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Bihar                  | 84.4                     | 88.1                   | 0.96                    | 612           | 81.9                     | 86.0                   | 0.95                    | 883           | 82.9                     | 86.8                   |
| Jharkhand              | 84.0                     | 88.2                   | 0.95                    | 427           | 82.2                     | 86.0                   | 0.95                    | 543           | 83.0                     | 87.0                   |
| Odisha                 | 82.2                     | 87.2                   | 0.94                    | 602           | 80.8                     | 85.7                   | 0.94                    | 526           | 81.5                     | 86.5                   |
| West Bengal            | 84.4                     | 88.2                   | 0.95                    | 785           | 82.2                     | 86.3                   | 0.95                    | 671           | 83.3                     | 87.3                   |
| <b>Northeast</b>       |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Arunachal Pradesh      | 82.7                     | 89.1                   | 0.93                    | 346           | 79.6                     | 85.7                   | 0.93                    | 162           | 81.7                     | 88.1                   |
| Assam                  | 80.6                     | 85.1                   | 0.95                    | 517           | 79.6                     | 83.9                   | 0.95                    | 350           | 80.2                     | 84.6                   |
| Manipur                | 86.9                     | 91.2                   | 0.95                    | 282           | 84.8                     | 89.3                   | 0.95                    | 233           | 85.9                     | 90.3                   |
| Meghalaya              | 79.4                     | 86.3                   | 0.92                    | 186           | 81.0                     | 85.8                   | 0.94                    | 147           | 80.1                     | 86.1                   |
| Mizoram                | 85.0                     | 92.5                   | 0.92                    | 266           | 82.8                     | 89.6                   | 0.92                    | 233           | 83.9                     | 91.0                   |
| Nagaland               | 82.8                     | 89.2                   | 0.93                    | 275           | 83.4                     | 87.9                   | 0.95                    | 283           | 83.2                     | 88.4                   |
| Tripura                | 82.6                     | 87.8                   | 0.94                    | 241           | 81.8                     | 86.6                   | 0.94                    | 206           | 82.2                     | 87.2                   |
| <b>West</b>            |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Dadra & Nagar Haveli   | 87.9                     | 92.3                   | 0.95                    | 254           | 84.5                     | 89.1                   | 0.94                    | 176           | 86.6                     | 91.1                   |
| Daman & Diu            | 92.4                     | 94.3                   | 0.98                    | 209           | 90.6                     | 92.1                   | 0.98                    | 160           | 91.6                     | 93.3                   |
| Goa                    | 91.3                     | 94.3                   | 0.97                    | 239           | 91.1                     | 92.4                   | 0.98                    | 255           | 91.2                     | 93.3                   |
| Gujarat                | 87.0                     | 92.2                   | 0.94                    | 470           | 87.8                     | 91.0                   | 0.96                    | 401           | 87.4                     | 91.6                   |
| Maharashtra            |                          |                        |                         |               |                          |                        |                         |               |                          |                        |

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continued

| State/ Union Territory    | Male                     |                        |                         |        |                          |                        |                         |        |                          |                        |
|---------------------------|--------------------------|------------------------|-------------------------|--------|--------------------------|------------------------|-------------------------|--------|--------------------------|------------------------|
|                           | Age 45-59*               |                        |                         |        |                          | Age ≥ 60               |                         |        |                          |                        |
|                           | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number | Mean waist circumference | Mean hip circumference |
| <b>South</b>              |                          |                        |                         |        |                          |                        |                         |        |                          | <b>Total</b>           |
| Andaman & Nicobar Islands | 88.0                     | 92.2                   | 0.95                    | 647    | 88.0                     | 90.9                   | 0.97                    | 702    | 88.0                     | 91.5                   |
|                           | 87.7                     | 92.1                   | 0.95                    | 265    | 86.0                     | 88.7                   | 0.97                    | 248    | 86.9                     | 90.5                   |
| Andhra Pradesh            | 91.9                     | 94.2                   | 0.97                    | 455    | 87.5                     | 91.2                   | 0.96                    | 455    | 89.7                     | 92.7                   |
| Karnataka                 | 87.5                     | 93.5                   | 0.93                    | 447    | 84.2                     | 88.8                   | 0.95                    | 429    | 85.9                     | 91.3                   |
| Kerala                    | 91.2                     | 93.3                   | 0.98                    | 405    | 91.4                     | 92.0                   | 0.99                    | 483    | 91.3                     | 92.5                   |
| Lakshadweep               | 90.5                     | 92.2                   | 0.98                    | 192    | 89.6                     | 89.2                   | 1.01                    | 227    | 90.0                     | 90.4                   |
| Puducherry                | 90.4                     | 94.7                   | 0.95                    | 253    | 90.0                     | 93.8                   | 0.96                    | 239    | 90.2                     | 94.3                   |
| Tamil Nadu                | 87.9                     | 92.2                   | 0.95                    | 655    | 86.8                     | 90.8                   | 0.95                    | 611    | 87.4                     | 91.5                   |
| Telangana                 | 89.0                     | 93.0                   | 0.95                    | 403    | 86.5                     | 90.4                   | 0.95                    | 429    | 87.6                     | 91.6                   |
|                           |                          |                        |                         |        |                          |                        |                         |        |                          | 832                    |

Note

\* Including spouse irrespective of age.

**Table 9.29 Mean values of waist circumference, hip circumference and waist-to-hip ratio among older adult female, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory | Female                   |                        |                         |               |                          |                        |                         |               |                          |                        |
|------------------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|-------------------------|---------------|--------------------------|------------------------|
|                        | Age 45-59*               |                        |                         |               |                          | Age ≥ 60               |                         |               |                          |                        |
|                        | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number        | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number        | Mean waist circumference | Mean hip circumference |
| <b>India</b>           | <b>85.1</b>              | <b>94.1</b>            | <b>0.90</b>             | <b>23,216</b> | <b>83.7</b>              | <b>91.3</b>            | <b>0.91</b>             | <b>14,525</b> | <b>84.5</b>              | <b>93.0</b>            |
| <b>North</b>           |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Chandigarh             | 95.1                     | 98.4                   | 0.97                    | 316           | 96.7                     | 98.0                   | 0.99                    | 168           | 95.7                     | 98.3                   |
| Delhi                  | 93.5                     | 101.3                  | 0.92                    | 466           | 93.5                     | 99.6                   | 0.94                    | 230           | 93.5                     | 100.7                  |
| Haryana                | 89.6                     | 97.0                   | 0.92                    | 564           | 88.5                     | 93.9                   | 0.94                    | 433           | 89.1                     | 95.5                   |
| Himachal Pradesh       | 90.0                     | 95.4                   | 0.94                    | 494           | 90.1                     | 93.7                   | 0.96                    | 289           | 90.0                     | 94.8                   |
| Jammu & Kashmir        | 95.0                     | 97.5                   | 0.97                    | 488           | 91.0                     | 92.8                   | 0.98                    | 284           | 93.3                     | 95.6                   |
| Punjab                 | 94.3                     | 97.2                   | 0.97                    | 651           | 93.7                     | 94.9                   | 0.99                    | 460           | 94.0                     | 96.2                   |
| Rajasthan              | 82.0                     | 91.3                   | 0.90                    | 670           | 83.6                     | 90.8                   | 0.92                    | 526           | 82.8                     | 91.1                   |
| Uttarakhand            | 89.5                     | 97.4                   | 0.92                    | 439           | 87.0                     | 93.4                   | 0.93                    | 320           | 88.4                     | 95.6                   |
| <b>Central</b>         |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Chhattisgarh           | 80.1                     | 90.2                   | 0.89                    | 718           | 81.0                     | 88.3                   | 0.92                    | 352           | 80.4                     | 89.5                   |
| Madhya Pradesh         | 82.7                     | 94.8                   | 0.87                    | 839           | 82.2                     | 91.4                   | 0.90                    | 590           | 82.4                     | 93.3                   |
| Uttar Pradesh          | 82.6                     | 91.3                   | 0.90                    | 1,323         | 79.7                     | 87.7                   | 0.91                    | 913           | 81.4                     | 89.7                   |
| <b>East</b>            |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Bihar                  | 81.6                     | 88.8                   | 0.92                    | 1,055         | 77.7                     | 84.9                   | 0.91                    | 843           | 79.8                     | 87.0                   |
| Jharkhand              | 79.3                     | 87.1                   | 0.91                    | 785           | 78.5                     | 84.9                   | 0.92                    | 543           | 79.0                     | 86.2                   |
| Odisha                 | 82.1                     | 90.4                   | 0.91                    | 953           | 79.6                     | 86.2                   | 0.92                    | 551           | 81.1                     | 88.8                   |
| West Bengal            | 85.9                     | 92.2                   | 0.93                    | 1,362         | 83.8                     | 87.8                   | 0.95                    | 694           | 85.2                     | 90.6                   |
| <b>Northeast</b>       |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Arunachal Pradesh      | 83.6                     | 91.4                   | 0.91                    | 502           | 82.5                     | 89.0                   | 0.92                    | 127           | 83.4                     | 90.9                   |
| Assam                  | 79.1                     | 85.9                   | 0.92                    | 882           | 76.6                     | 83.0                   | 0.92                    | 368           | 78.3                     | 85.0                   |
| Manipur                | 88.9                     | 94.4                   | 0.94                    | 380           | 88.0                     | 91.3                   | 0.96                    | 284           | 88.5                     | 93.0                   |
| Meghalaya              | 81.9                     | 88.1                   | 0.93                    | 318           | 79.2                     | 83.8                   | 0.94                    | 226           | 80.8                     | 86.3                   |
| Mizoram                | 84.2                     | 93.3                   | 0.90                    | 390           | 81.6                     | 89.7                   | 0.91                    | 234           | 83.2                     | 92.0                   |
| Nagaland               | 83.2                     | 90.1                   | 0.92                    | 387           | 79.8                     | 86.2                   | 0.93                    | 281           | 81.8                     | 88.5                   |
| Tripura                | 82.6                     | 91.5                   | 0.90                    | 435           | 79.2                     | 86.0                   | 0.92                    | 217           | 81.4                     | 89.6                   |
| <b>West</b>            |                          |                        |                         |               |                          |                        |                         |               |                          |                        |
| Dadra & Nagar Haveli   | 86.0                     | 94.4                   | 0.91                    | 335           | 82.3                     | 89.4                   | 0.92                    | 220           | 84.6                     | 92.5                   |
| Daman & Diu            | 89.7                     | 100.3                  | 0.89                    | 323           | 90.3                     | 98.4                   | 0.92                    | 217           | 90.0                     | 99.5                   |
| Goa                    | 91.4                     | 99.6                   | 0.92                    | 448           | 90.7                     | 99.3                   | 0.91                    | 312           | 91.1                     | 99.5                   |
| Gujarat                | 86.3                     | 96.9                   | 0.89                    | 718           | 86.0                     | 95.0                   | 0.90                    | 474           | 86.2                     | 96.1                   |
| Maharashtra            | 85.7                     | 96.7                   | 0.88                    | 1,202         | 84.1                     | 94.0                   | 0.89                    | 804           | 85.0                     | 95.5                   |

continued

**continued**

| State/ Union Territory    | Female                   |                        |                         |        |                          |                        |                         |        |                          |                        |                         |        |
|---------------------------|--------------------------|------------------------|-------------------------|--------|--------------------------|------------------------|-------------------------|--------|--------------------------|------------------------|-------------------------|--------|
|                           | Age 45-59*               |                        |                         |        |                          |                        | Age ≥ 60                |        |                          |                        |                         |        |
|                           | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number | Mean waist circumference | Mean hip circumference | Mean waist-to-hip ratio | Number |
| South                     |                          |                        |                         |        |                          |                        |                         |        |                          |                        |                         |        |
| Andaman & Nicobar Islands | 87.1                     | 95.7                   | 0.91                    | 399    | 84.6                     | 91.3                   | 0.92                    | 223    | 86.2                     | 94.1                   | 0.91                    | 622    |
| Andhra Pradesh            | 89.3                     | 100.3                  | 0.89                    | 843    | 87.5                     | 97.1                   | 0.90                    | 458    | 88.6                     | 99.2                   | 0.89                    | 1,301  |
| Karnataka                 | 85.3                     | 96.9                   | 0.88                    | 850    | 87.2                     | 97.8                   | 0.89                    | 475    | 86.0                     | 97.2                   | 0.88                    | 1,325  |
| Kerala                    | 94.6                     | 97.6                   | 0.97                    | 782    | 91.3                     | 94.8                   | 0.96                    | 585    | 93.0                     | 96.3                   | 0.97                    | 1,367  |
| Lakshadweep               | 91.9                     | 95.9                   | 0.96                    | 413    | 90.7                     | 93.7                   | 0.97                    | 235    | 91.4                     | 95.0                   | 0.96                    | 648    |
| Puducherry                | 88.9                     | 98.4                   | 0.90                    | 471    | 88.2                     | 97.9                   | 0.90                    | 324    | 88.6                     | 98.2                   | 0.90                    | 795    |
| Tamil Nadu                | 87.1                     | 96.8                   | 0.90                    | 1,231  | 83.7                     | 92.4                   | 0.91                    | 772    | 85.8                     | 95.0                   | 0.90                    | 2,003  |
| Telangana                 | 84.5                     | 96.4                   | 0.88                    | 784    | 85.6                     | 95.2                   | 0.90                    | 493    | 84.9                     | 95.9                   | 0.88                    | 1,277  |

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Note

\* Including spouse irrespective of age.

**Table 9.30 Prevalence (%) of high-risk waist circumference among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | High-risk waist circumference <sup>1</sup> |        |          |        |       |        |            |        |          |       |
|------------------------------------------|--------------------------------------------|--------|----------|--------|-------|--------|------------|--------|----------|-------|
|                                          | Male                                       |        |          |        |       | Female |            |        |          |       |
|                                          | Age 45-59*                                 | Number | Age ≥ 60 | Number | Total | Number | Age 45-59* | Number | Age ≥ 60 | Total |
| <b>Place of residence</b>                |                                            |        |          |        |       |        |            |        |          |       |
| Rural                                    | 6.5                                        | 8,995  | 6.0      | 9,131  | 6.2   | 18,126 | 31.4       | 14,787 | 27.8     | 29.9  |
| Urban                                    | 15.7                                       | 4,913  | 16.9     | 4,371  | 16.3  | 9,284  | 61.3       | 8,429  | 58.1     | 60.0  |
| <b>Marital status</b>                    |                                            |        |          |        |       |        |            |        |          |       |
| Currently married                        | 9.6                                        | 12,976 | 9.3      | 11,122 | 9.5   | 24,098 | 42.1       | 19,357 | 39.2     | 41.3  |
| Widowed                                  | 6.1                                        | 446    | 7.4      | 2,032  | 7.2   | 2,478  | 38.4       | 3,111  | 35.3     | 36.1  |
| Divorced/Separated/Deserted/<br>Others   | 7.2                                        | 486    | 3.7      | 348    | 5.6   | 834    | 28.4       | 748    | 31.6     | 29.4  |
| <b>Living arrangement</b>                |                                            |        |          |        |       |        |            |        |          |       |
| Living alone                             | 4.0                                        | 204    | 10.5     | 324    | 8.8   | 528    | 34.7       | 437    | 27.2     | 28.9  |
| Living with spouse and/or others         | 9.2                                        | 1,388  | 8.5      | 3,264  | 8.7   | 4,652  | 42.9       | 2,538  | 36.8     | 40.0  |
| Living with spouse and children          | 9.6                                        | 11,375 | 9.7      | 7,751  | 9.7   | 19,126 | 41.9       | 16,441 | 40.5     | 41.6  |
| Living with children and others          | 7.1                                        | 557    | 7.5      | 1,714  | 7.4   | 2,271  | 40.1       | 3,193  | 37.7     | 38.4  |
| Living with others only                  | 7.8                                        | 384    | 2.7      | 449    | 4.7   | 833    | 24.3       | 607    | 29.9     | 27.7  |
| <b>Religion</b>                          |                                            |        |          |        |       |        |            |        |          |       |
| Hindu                                    | 8.9                                        | 10,269 | 8.7      | 9,875  | 8.8   | 20,144 | 39.1       | 16,978 | 35.5     | 37.6  |
| Muslim                                   | 10.7                                       | 1,551  | 9.1      | 1,616  | 9.8   | 3,167  | 54.4       | 2,924  | 44.1     | 50.4  |
| Christian                                | 11.1                                       | 1,428  | 7.5      | 1,337  | 9.1   | 2,765  | 34.4       | 2,301  | 38.1     | 35.8  |
| Others                                   | 16.5                                       | 660    | 13.9     | 674    | 15.1  | 1,334  | 51.9       | 1,013  | 49.9     | 51.0  |
| <b>Caste/tribe</b>                       |                                            |        |          |        |       |        |            |        |          |       |
| Scheduled tribe                          | 3.9                                        | 2,639  | 3.0      | 2,202  | 3.5   | 4,841  | 21.6       | 4,157  | 19.6     | 20.8  |
| Scheduled caste                          | 5.8                                        | 2,365  | 6.0      | 2,201  | 5.9   | 4,566  | 34.7       | 4,004  | 28.3     | 32.1  |
| Other backward class                     | 10.0                                       | 5,177  | 8.3      | 5,191  | 9.1   | 10,368 | 42.5       | 8,752  | 37.0     | 40.3  |
| None of the above                        | 13.0                                       | 3,727  | 13.5     | 3,908  | 13.3  | 7,635  | 50.5       | 6,303  | 48.3     | 49.5  |
| <b>Education</b>                         |                                            |        |          |        |       |        |            |        |          |       |
| No schooling                             | 4.3                                        | 3,621  | 4.0      | 4,857  | 4.1   | 8,478  | 31.6       | 11,339 | 29.1     | 30.4  |
| Less than 5 years complete               | 5.1                                        | 1,740  | 8.0      | 1,998  | 6.7   | 3,738  | 39.3       | 2,224  | 46.2     | 42.0  |
| 5-9 years complete                       | 9.8                                        | 4,318  | 9.2      | 3,493  | 9.5   | 7,811  | 49.2       | 5,682  | 58.1     | 51.7  |
| 10 or more years complete                | 15.3                                       | 4,229  | 17.8     | 3,154  | 16.4  | 7,383  | 63.8       | 3,971  | 72.8     | 65.8  |
| <b>Work status</b>                       |                                            |        |          |        |       |        |            |        |          |       |
| Currently working                        | 9.2                                        | 12,235 | 7.5      | 5,796  | 8.6   | 18,031 | 32.3       | 9,331  | 24.7     | 30.5  |
| Worked in past but currently not working | 11.0                                       | 1,250  | 10.4     | 7,059  | 10.5  | 8,309  | 44.8       | 2,884  | 34.5     | 38.2  |
| Never worked                             | 10.3                                       | 423    | 5.5      | 647    | 7.2   | 1,070  | 48.6       | 11,001 | 43.9     | 46.6  |

continued

| continued                  |  | High-risk waist circumference <sup>1</sup> |               |            |               |               |               |             |               |             |               |
|----------------------------|--|--------------------------------------------|---------------|------------|---------------|---------------|---------------|-------------|---------------|-------------|---------------|
| Background characteristics |  | Male                                       |               |            |               |               | Female        |             |               |             |               |
|                            |  | Age 45-59*                                 | Number        | Age ≥ 60   | Number        | Total         | Number        | Age 45-59*  | Number        | Age ≥ 60    | Number        |
| <b>MPCE quintile</b>       |  |                                            |               |            |               |               |               |             |               |             |               |
| Poorest                    |  | 5.8                                        | 2,677         | 5.3        | 2,695         | 5,372         | 5,372         | 30.7        | 4,392         | 24.8        | 3,023         |
| Poorer                     |  | 5.9                                        | 2,751         | 7.1        | 2,760         | 5,511         | 5,511         | 37.2        | 4,614         | 31.5        | 3,033         |
| Middle                     |  | 7.6                                        | 2,768         | 9.1        | 2,759         | 5,527         | 5,527         | 41.4        | 4,651         | 34.9        | 3,005         |
| Richer                     |  | 13.1                                       | 2,889         | 9.9        | 2,691         | 5,580         | 5,580         | 43.2        | 4,821         | 46.6        | 2,834         |
| Richest                    |  | 15.1                                       | 2,823         | 14.2       | 2,597         | 5,420         | 5,420         | 54.5        | 4,738         | 52.3        | 2,630         |
| <b>Total</b>               |  | <b>9.4</b>                                 | <b>13,908</b> | <b>8.9</b> | <b>13,502</b> | <b>27,410</b> | <b>27,410</b> | <b>41.2</b> | <b>23,216</b> | <b>37.0</b> | <b>14,525</b> |
| <b>39.4</b>                |  |                                            |               |            |               |               |               |             |               |             | <b>37,741</b> |

Note

\* Including spouse irrespective of age.

<sup>1</sup> Metabolic complication: critical limit classification for high-risk waist circumference for men is ≥102 cm and for women is ≥88cm.



**Table 9.31 Prevalence (%) of high-risk waist circumference among older adult male and female, states/ UTs, LASI Wave 1, 2017-18**

| State/ Union Territory | High-risk waist circumference <sup>1</sup> |               |            |               |            |               |             |               |             |               |
|------------------------|--------------------------------------------|---------------|------------|---------------|------------|---------------|-------------|---------------|-------------|---------------|
|                        | Male                                       |               |            |               |            | Female        |             |               |             |               |
|                        | Age 45-59*                                 | Number        | Age ≥ 60   | Number        | Total      | Number        | Age 45-59*  | Number        | Age ≥ 60    | Number        |
| <b>India</b>           | <b>9.4</b>                                 | <b>13,908</b> | <b>8.9</b> | <b>13,502</b> | <b>9.1</b> | <b>27,410</b> | <b>41.2</b> | <b>23,216</b> | <b>37.0</b> | <b>14,525</b> |
| <b>North</b>           |                                            |               |            |               |            |               |             |               |             |               |
| Chandigarh             | 18.3                                       | 217           | 18.0       | 155           | 18.2       | 372           | 71.4        | 316           | 75.5        | 168           |
| Delhi                  | 18.1                                       | 335           | 21.4       | 239           | 19.5       | 574           | 71.6        | 466           | 67.3        | 230           |
| Haryana                | 17.2                                       | 371           | 15.9       | 308           | 16.6       | 679           | 55.4        | 564           | 50.0        | 433           |
| Himachal Pradesh       | 12.1                                       | 238           | 13.6       | 288           | 13.0       | 526           | 58.2        | 494           | 58.9        | 289           |
| Jammu & Kashmir        | 9.5                                        | 282           | 10.2       | 327           | 9.9        | 609           | 75.0        | 488           | 60.0        | 284           |
| Punjab                 | 21.8                                       | 393           | 19.2       | 456           | 20.4       | 849           | 67.2        | 651           | 65.0        | 460           |
| Rajasthan              | 6.4                                        | 421           | 10.5       | 456           | 8.6        | 877           | 32.0        | 670           | 36.7        | 526           |
| Uttarakhand            | 18.8                                       | 230           | 13.4       | 283           | 15.7       | 513           | 54.7        | 439           | 50.6        | 320           |
| <b>Central</b>         |                                            |               |            |               |            |               |             |               |             |               |
| Chhattisgarh           | 4.5                                        | 493           | 7.2        | 365           | 5.6        | 858           | 26.2        | 718           | 25.9        | 352           |
| Madhya Pradesh         | 7.9                                        | 614           | 5.9        | 563           | 6.9        | 1,177         | 32.1        | 839           | 31.5        | 590           |
| Uttar Pradesh          | 9.5                                        | 881           | 6.5        | 1,010         | 7.9        | 1,891         | 33.9        | 1,323         | 27.5        | 913           |
| <b>East</b>            |                                            |               |            |               |            |               |             |               |             |               |
| Bihar                  | 5.9                                        | 612           | 6.7        | 883           | 6.4        | 1,495         | 28.2        | 1,055         | 18.4        | 843           |
| Jharkhand              | 6.9                                        | 427           | 7.1        | 543           | 7.0        | 970           | 25.2        | 785           | 23.3        | 543           |
| Odisha                 | 6.1                                        | 602           | 7.2        | 526           | 6.6        | 1,128         | 31.5        | 953           | 23.1        | 551           |
| West Bengal            | 6.2                                        | 785           | 3.7        | 671           | 5.0        | 1,456         | 43.2        | 1,362         | 39.8        | 694           |
| <b>Northeast</b>       |                                            |               |            |               |            |               |             |               |             |               |
| Arunachal Pradesh      | 3.9                                        | 346           | 1.9        | 162           | 3.3        | 508           | 33.0        | 502           | 27.0        | 127           |
| Assam                  | 2.0                                        | 517           | 3.2        | 350           | 2.5        | 867           | 22.6        | 882           | 18.9        | 368           |
| Manipur                | 10.0                                       | 282           | 7.7        | 233           | 8.9        | 515           | 55.3        | 380           | 45.8        | 284           |
| Meghalaya              | 1.4                                        | 186           | 4.2        | 147           | 2.6        | 333           | 24.8        | 318           | 20.4        | 226           |
| Mizoram                | 6.9                                        | 266           | 5.9        | 233           | 6.4        | 499           | 35.1        | 390           | 31.0        | 234           |
| Nagaland               | 1.1                                        | 275           | 10.3       | 283           | 6.4        | 558           | 33.9        | 387           | 17.2        | 281           |
| Tripura                | 5.1                                        | 241           | 4.5        | 206           | 4.8        | 447           | 32.4        | 435           | 23.9        | 217           |
| <b>West</b>            |                                            |               |            |               |            |               |             |               |             |               |
| Dadra & Nagar Haveli   | 13.2                                       | 254           | 12.3       | 176           | 12.8       | 430           | 40.7        | 335           | 28.5        | 220           |
| Daman & Diu            | 19.8                                       | 209           | 12.7       | 160           | 16.5       | 369           | 53.4        | 323           | 56.8        | 217           |
| Goa                    | 15.5                                       | 239           | 15.4       | 255           | 15.4       | 494           | 63.2        | 448           | 57.2        | 312           |
| Gujarat                | 11.7                                       | 470           | 11.7       | 401           | 11.7       | 871           | 46.8        | 718           | 45.7        | 474           |
| Maharashtra            | 11.2                                       | 647           | 14.0       | 702           | 12.8       | 1,349         | 43.2        | 1,202         | 39.1        | 804           |

continued

continued

| State/ Union Territory    | High-risk waist circumference <sup>1</sup> |        |          |        |       |        |            |        |          |       |
|---------------------------|--------------------------------------------|--------|----------|--------|-------|--------|------------|--------|----------|-------|
|                           | Male                                       |        |          |        |       | Female |            |        |          |       |
|                           | Age 45-59*                                 | Number | Age ≥ 60 | Number | Total | Number | Age 45-59* | Number | Age ≥ 60 | Total |
| <b>South</b>              |                                            |        |          |        |       |        |            |        |          |       |
| Andaman & Nicobar Islands | 8.8                                        | 265    | 10.4     | 248    | 9.6   | 513    | 48.6       | 399    | 38.9     | 45.2  |
| Andhra Pradesh            | 22.9                                       | 455    | 14.6     | 455    | 18.7  | 910    | 56.7       | 843    | 50.2     | 54.4  |
| Karnataka                 | 8.2                                        | 447    | 6.1      | 429    | 7.2   | 876    | 41.7       | 850    | 46.2     | 43.3  |
| Kerala                    | 11.6                                       | 405    | 14.0     | 483    | 13.0  | 888    | 74.5       | 782    | 63.6     | 69.3  |
| Lakshadweep               | 8.3                                        | 192    | 9.4      | 227    | 9.0   | 419    | 68.0       | 413    | 60.0     | 64.8  |
| Puducherry                | 11.9                                       | 253    | 13.1     | 239    | 12.5  | 492    | 57.5       | 471    | 52.0     | 55.1  |
| Tamil Nadu                | 10.1                                       | 655    | 9.2      | 611    | 9.6   | 1,266  | 45.5       | 1,231  | 35.0     | 41.3  |
| Telangana                 | 15.4                                       | 403    | 12.0     | 429    | 13.5  | 832    | 38.2       | 784    | 40.0     | 38.9  |
|                           |                                            |        |          |        |       |        |            |        |          | 1,277 |

Note

\* Including spouse irrespective of age.

<sup>1</sup> Metabolic complication: critical limit classification for high-risk waist circumference for men is ≥102 cm and for women is ≥88cm.

#### 9.4.4 Waist-to-hip ratio

The waist-to-hip ratio (WHR) is a quick measure of fat distribution that may indicate a person's overall health. People who carry more weight around their middle than around their hips may be at a higher risk of developing metabolic health conditions. The WHR is calculated by dividing the waist circumference in cm by the hip circumference in cm. According to the WHO, the WHR is classified as follows (WHO, 2011b):

WHR Classification

| Men   | Women | Risk level |
|-------|-------|------------|
| <0.90 | <0.85 | Low        |
| ≥0.90 | ≥0.85 | High       |

The mean WHR among older adult men and women by background characteristics and by states/UTs are presented in Tables 9.26-9.28. The mean WHRs of older men and women age 45 and above are 0.95 and 0.91, respectively. The WHR is higher among older adult men and women age 45 and above residing in urban areas than their rural counterparts. The WHR does not show much variation by age. The elderly men and women age 60 and above in Chandigarh, Kerala, Lakshadweep, and Jammu & Kashmir have a higher mean WHR than those residing in other states/UTs.

Table 9.32 presents the prevalence of low and high-risk WHR among older adults age 45 and above in India by background characteristics. Overall, three-quarters of older adults age 45 and above (79%) as well as elderly age 60 and above (79%) have high-risk WHR. Among elderly age 60 and above, the prevalence of high-risk WHR is higher in urban (86%) than in rural areas (76%) and higher among women (80%) than among men (78%). The prevalence of high-risk WHR increases with educational attainment and MPCE quintile.

Table 9.33 presents the cross-state variations in low and high-risk WHR. The prevalence of high-risk WHR among older adults age 45 and above ranges from 68% in Madhya Pradesh to 96.2% in Lakshadweep.

### Key findings: anthropometry

- In India, more than a quarter of elderly age 60 and above are underweight (27%) and a fifth of elderly are overweight/obese (22%), indicating a dual burden of undernutrition and overnutrition among elderly in India. The prevalence of obesity among elderly is 6%.
- The prevalence of underweight among elderly age 60 and above in rural areas (32%) is almost threefold the rate in urban areas (12%). Underweight is more common among Scheduled tribe (41%), elderly with no schooling (33%), and those in the poorest quintile (35%). In contrast, the prevalence rates of overweight and obesity are more common among elderly in urban areas (27% and 12%, respectively), among women (18% and 8%, respectively), among those who have never worked (22% and 10% respectively), among those with 10 or more years of schooling (29% and 12%, respectively), and among those in the richest MPCE quintile (22% and 10%, respectively).
- The prevalence of obesity among elderly age 60 and above is the highest in the states/UTs of Chandigarh (22%), Delhi (18%), and Puducherry (15%) and Daman & Diu (15%). In contrast, more than a third of elderly age 60 and above are underweight in Dadra & Nagar Haveli (40%), Odisha (37%), Tripura (37%), Uttar Pradesh (37%), Chhattisgarh (36%), Madhya Pradesh (35%), and Assam (34%).
- The prevalence of high-risk waist circumference is much higher among older adult women age 45 and above (39%) than for men (9%). However, the prevalence of high-risk WHR does not vary much between older adult men and women age 45 and above.

**Table 9.32 Prevalence (%) of low risk and high-risk waist-to-hip ratio (WHR) among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*                         |      |                            |      |        |        | Age ≥ 60                           |      |                            |      |        |       | Total                              |        |                            |      |        |      | Male (Age ≥ 45)                    |      |                            |      |        |      | Female (Age ≥ 45)                  |      |                            |      |        |      |
|------------------------------------------|------------------------------------|------|----------------------------|------|--------|--------|------------------------------------|------|----------------------------|------|--------|-------|------------------------------------|--------|----------------------------|------|--------|------|------------------------------------|------|----------------------------|------|--------|------|------------------------------------|------|----------------------------|------|--------|------|
|                                          | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |      | Number |        | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |      | Number |       | <sup>1</sup> Low-risk (normal) WHR |        | <sup>2</sup> High-risk WHR |      | Number |      | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |      | Number |      | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |      | Number |      |
|                                          | WHR                                | risk | WHR                        | risk | WHR    | risk   | WHR                                | risk | WHR                        | risk | WHR    | risk  | WHR                                | risk   | WHR                        | risk | WHR    | risk | WHR                                | risk | WHR                        | risk | WHR    | risk | WHR                                | risk | WHR                        | risk | WHR    | risk |
| <b>Place of residence</b>                |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Rural                                    | 24.2                               | 75.8 | 23,782                     | 24.1 | 75.9   | 18,679 | 24.1                               | 75.9 | 24.1                       | 75.9 | 42,461 | 25.15 | 74.85                              | 18,126 | 23.4                       | 76.6 | 24,335 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Urban                                    | 16.2                               | 83.8 | 13,342                     | 13.6 | 86.4   | 9,348  | 15.1                               | 84.9 | 15.1                       | 84.9 | 22,690 | 13.73 | 86.27                              | 9,284  | 16.0                       | 84.0 | 13,406 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Sex</b>                               |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Male                                     | 21.2                               | 78.8 | 13,908                     | 22.5 | 77.5   | 13,502 | 21.9                               | 78.1 | 21.9                       | 78.1 | 27,410 | 21.87 | 78.13                              | 27,410 | na                         | na   | na     |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Female                                   | 21.9                               | 78.1 | 23,216                     | 19.8 | 80.2   | 14,525 | 21.0                               | 79.0 | 21.0                       | 79.0 | 37,741 | na    | na                                 | na     | 21.0                       | 79.0 | 37,741 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Marital status</b>                    |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Currently married                        | 21.8                               | 78.2 | 32,333                     | 20.7 | 79.3   | 17,944 | 21.4                               | 78.6 | 21.4                       | 78.6 | 50,277 | 21.37 | 78.63                              | 24,098 | 21.4                       | 78.6 | 26,179 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Widowed                                  | 20.9                               | 79.1 | 3,557                      | 21.6 | 78.4   | 9,374  | 21.5                               | 78.5 | 21.5                       | 78.5 | 12,931 | 25.77 | 74.23                              | 2,478  | 20.4                       | 79.6 | 10,453 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Divorced/Separated/Deserted/Others       | 18.0                               | 82.0 | 1,234                      | 22.8 | 77.2   | 709    | 19.8                               | 80.2 | 19.8                       | 80.2 | 1,943  | 23.09 | 76.91                              | 834    | 17.4                       | 82.6 | 1,109  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Living arrangement</b>                |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Living alone                             | 22.8                               | 77.2 | 641                        | 22.6 | 77.4   | 1,456  | 22.6                               | 77.4 | 22.6                       | 77.4 | 2,097  | 29.27 | 70.73                              | 20,144 | 20.8                       | 79.2 | 1,569  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Living with spouse and/or others         | 24.0                               | 76.0 | 3,926                      | 21.7 | 78.3   | 5,497  | 22.7                               | 77.3 | 22.7                       | 77.3 | 9,423  | 24.60 | 75.40                              | 3,167  | 20.8                       | 79.2 | 4,771  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Living with spouse and children          | 21.5                               | 78.5 | 27,816                     | 20.3 | 79.7   | 12,245 | 21.1                               | 78.9 | 21.1                       | 78.9 | 40,061 | 20.56 | 79.44                              | 2,765  | 21.7                       | 78.3 | 20,935 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Living with children and others          | 19.8                               | 80.2 | 3,750                      | 21.4 | 78.6   | 7,407  | 20.9                               | 79.1 | 20.9                       | 79.1 | 11,157 | 23.21 | 76.79                              | 1,334  | 20.3                       | 79.7 | 8,886  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Living with others only                  | 19.0                               | 81.0 | 991                        | 22.0 | 78.0   | 1,422  | 20.8                               | 79.2 | 20.8                       | 79.2 | 2,413  | 26.88 | 73.12                              | 528    | 17.8                       | 82.2 | 1,580  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Religion</b>                          |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Hindu                                    | 23.3                               | 76.7 | 27,247                     | 22.3 | 77.7   | 20,507 | 22.8                               | 77.2 | 22.8                       | 77.2 | 47,754 | 22.52 | 77.48                              | 4,652  | 23.1                       | 76.9 | 27,610 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Muslim                                   | 13.1                               | 86.9 | 4,475                      | 14.5 | 85.5   | 3,318  | 13.7                               | 86.3 | 13.7                       | 86.3 | 7,793  | 17.40 | 82.60                              | 19,126 | 11.2                       | 88.8 | 4,626  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Christian                                | 18.1                               | 81.9 | 3,729                      | 15.2 | 84.8   | 2,824  | 16.8                               | 83.2 | 16.8                       | 83.2 | 6,553  | 24.14 | 75.86                              | 2,271  | 12.5                       | 87.5 | 3,788  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Others                                   | 11.8                               | 88.2 | 1,673                      | 18.5 | 81.5   | 1,378  | 15.0                               | 85.0 | 15.0                       | 85.0 | 3,051  | 18.84 | 81.16                              | 833    | 12.0                       | 88.0 | 1,717  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Caste/tribe</b>                       |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Scheduled tribe                          | 30.0                               | 70.0 | 6,796                      | 25.6 | 74.4   | 4,632  | 28.1                               | 71.9 | 28.1                       | 71.9 | 11,428 | 34.99 | 65.01                              | 4,841  | 23.2                       | 76.8 | 6,587  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Scheduled caste                          | 21.3                               | 78.7 | 6,369                      | 23.6 | 76.4   | 4,576  | 22.3                               | 77.7 | 22.3                       | 77.7 | 10,945 | 24.60 | 75.40                              | 4,566  | 20.7                       | 79.3 | 6,379  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Other backward class                     | 22.4                               | 77.6 | 13,929                     | 22.6 | 77.4   | 10,656 | 22.5                               | 77.5 | 22.5                       | 77.5 | 24,585 | 21.45 | 78.55                              | 10,368 | 23.2                       | 76.8 | 14,217 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| None of the above                        | 17.6                               | 82.4 | 10,030                     | 15.5 | 84.5   | 8,163  | 16.6                               | 83.4 | 16.6                       | 83.4 | 18,193 | 16.39 | 83.61                              | 7,635  | 16.7                       | 83.3 | 10,558 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Education</b>                         |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| No schooling                             | 24.4                               | 75.6 | 14,960                     | 23.4 | 76.6   | 14,972 | 23.9                               | 76.1 | 23.9                       | 76.1 | 29,932 | 27.67 | 72.33                              | 8,478  | 22.4                       | 77.6 | 21,454 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Less than 5 years complete               | 25.7                               | 74.3 | 3,964                      | 21.9 | 78.1   | 3,445  | 23.9                               | 76.1 | 23.9                       | 76.1 | 7,409  | 25.95 | 74.05                              | 3,738  | 21.7                       | 78.3 | 3,671  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| 5-9 years complete                       | 19.9                               | 80.1 | 10,000                     | 18.2 | 81.8   | 5,421  | 19.3                               | 80.7 | 19.3                       | 80.7 | 15,421 | 20.17 | 79.83                              | 7,811  | 18.3                       | 81.7 | 7,610  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| 10 or more years complete                | 15.9                               | 84.1 | 8,200                      | 14.7 | 85.3   | 4,189  | 15.5                               | 84.5 | 15.5                       | 84.5 | 12,389 | 14.07 | 85.93                              | 7,383  | 17.7                       | 82.3 | 5,006  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| <b>Work status</b>                       |                                    |      |                            |      |        |        |                                    |      |                            |      |        |       |                                    |        |                            |      |        |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Currently working                        | 23.7                               | 76.3 | 21,566                     | 24.8 | 75.2   | 8,526  | 24.1                               | 75.9 | 24.1                       | 75.9 | 30,092 | 22.52 | 77.48                              | 18,031 | 26.3                       | 73.7 | 12,061 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Worked in past but currently not working | 22.6                               | 77.4 | 4,134                      | 20.8 | 79.2   | 11,752 | 21.2                               | 78.8 | 21.2                       | 78.8 | 15,886 | 19.92 | 80.08                              | 8,309  | 22.5                       | 77.5 | 7,577  |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |
| Never worked                             | 16.8                               | 83.2 | 11,424                     | 17.1 | 82.9   | 7,749  | 16.9                               | 83.1 | 16.9                       | 83.1 | 19,173 | 27.29 | 72.71                              | 1,070  | 16.5                       | 83.5 | 18,103 |      |                                    |      |                            |      |        |      |                                    |      |                            |      |        |      |

continued

continued

| Background characteristics | Age 45-59*                         |      |                            |      |        | Age ≥ 60                           |      |                            | Total  |        |                                    | Male (Age ≥ 45) |                            |      |        | Female (Age ≥ 45)                  |      |                            |      |
|----------------------------|------------------------------------|------|----------------------------|------|--------|------------------------------------|------|----------------------------|--------|--------|------------------------------------|-----------------|----------------------------|------|--------|------------------------------------|------|----------------------------|------|
|                            | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |      | Number | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |        | Number | <sup>1</sup> Low-risk (normal) WHR |                 | <sup>2</sup> High-risk WHR |      | Number | <sup>1</sup> Low-risk (normal) WHR |      | <sup>2</sup> High-risk WHR |      |
|                            | WHR                                | risk | WHR                        | risk |        | WHR                                | risk | WHR                        | risk   |        | WHR                                | risk            | WHR                        | risk |        | WHR                                | risk | WHR                        | risk |
| <b>MPCE quintile</b>       |                                    |      |                            |      |        |                                    |      |                            |        |        |                                    |                 |                            |      |        |                                    |      |                            |      |
| Poorest                    | 26.1                               | 73.9 | 7,069                      | 24.7 | 75.3   | 5,718                              | 25.4 | 74.6                       | 12,787 | 27.15  | 72.85                              | 5,372           | 24.2                       | 75.8 | 7,415  |                                    |      |                            |      |
| Poorer                     | 22.3                               | 77.7 | 7,365                      | 22.9 | 77.1   | 5,793                              | 22.6 | 77.4                       | 13,158 | 23.67  | 76.33                              | 5,511           | 21.8                       | 78.2 | 7,647  |                                    |      |                            |      |
| Middle                     | 21.5                               | 78.5 | 7,419                      | 20.9 | 79.1   | 5,764                              | 21.2 | 78.8                       | 13,183 | 21.81  | 78.19                              | 5,527           | 20.7                       | 79.3 | 7,656  |                                    |      |                            |      |
| Richer                     | 19.9                               | 80.1 | 7,710                      | 17.8 | 82.2   | 5,525                              | 18.9 | 81.1                       | 13,235 | 18.87  | 81.13                              | 5,580           | 19.0                       | 81.0 | 7,655  |                                    |      |                            |      |
| Richest                    | 18.0                               | 82.0 | 7,561                      | 18.2 | 81.8   | 5,227                              | 18.1 | 81.9                       | 12,788 | 16.92  | 83.08                              | 5,420           | 18.9                       | 81.1 | 7,368  |                                    |      |                            |      |
| Total                      | 21.6                               | 78.4 | 37,124                     | 21.1 | 78.9   | 28,027                             | 21.4 | 78.6                       | 65,151 | 21.87  | 78.13                              | 27,410          | 21.0                       | 79.0 | 37,741 |                                    |      |                            |      |
| Note                       |                                    |      |                            |      |        |                                    |      |                            |        |        |                                    |                 |                            |      |        |                                    |      |                            |      |

\* Including spouse irrespective of age, na "not applicable".

WHO criteria of classification of waist- hip-ratio (WHR)

| Men    | Women  | Risk level        |
|--------|--------|-------------------|
| < 0.90 | < 0.85 | Low <sup>1</sup>  |
| ≥ 0.90 | ≥ 0.85 | High <sup>2</sup> |

**Table 9.33 Prevalence (%) of low risk and high-risk waist to hip ratio (WHR) among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory | Age 45-59*                         |             |                            |             |             |                                    | Age ≥ 60                   |             |               | Total                              |                            |               | Male (Age ≥ 45)                    |                            |               | Female (Age ≥ 45)                  |                            |  |
|------------------------|------------------------------------|-------------|----------------------------|-------------|-------------|------------------------------------|----------------------------|-------------|---------------|------------------------------------|----------------------------|---------------|------------------------------------|----------------------------|---------------|------------------------------------|----------------------------|--|
|                        | <sup>1</sup> Low-risk (normal) WHR |             | <sup>2</sup> High-risk WHR |             | Number      | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR |             | Number        | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR |               | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR |               | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR |  |
|                        |                                    |             |                            |             |             |                                    |                            |             |               |                                    |                            |               |                                    |                            |               |                                    |                            |  |
| <b>India</b>           | <b>21.6</b>                        | <b>78.4</b> | <b>37,124</b>              | <b>21.1</b> | <b>78.9</b> | <b>28,027</b>                      | <b>21.4</b>                | <b>78.6</b> | <b>65,151</b> | <b>21.9</b>                        | <b>78.1</b>                | <b>27,410</b> | <b>21.0</b>                        | <b>79.0</b>                | <b>37,741</b> |                                    |                            |  |
| <b>North</b>           |                                    |             |                            |             |             |                                    |                            |             |               |                                    |                            |               |                                    |                            |               |                                    |                            |  |
| Chandigarh             | 4.6                                | 95.4        | 533                        | 3.8         | 96.2        | 323                                | 4.3                        | 95.7        | 856           | 5.4                                | 94.6                       | 372           | 3.4                                | 96.6                       | 484           |                                    |                            |  |
| Delhi                  | 13.2                               | 86.8        | 801                        | 7.2         | 92.8        | 469                                | 10.9                       | 89.1        | 1,270         | 10.3                               | 89.7                       | 574           | 11.5                               | 88.5                       | 696           |                                    |                            |  |
| Haryana                | 17.8                               | 82.2        | 935                        | 12.4        | 87.6        | 741                                | 15.3                       | 84.7        | 1,676         | 17.7                               | 82.3                       | 679           | 13.7                               | 86.3                       | 997           |                                    |                            |  |
| Himachal Pradesh       | 13.5                               | 86.5        | 732                        | 9.6         | 90.4        | 577                                | 11.7                       | 88.3        | 1,309         | 15.2                               | 84.8                       | 526           | 9.3                                | 90.7                       | 783           |                                    |                            |  |
| Jammu & Kashmir        | 8.9                                | 91.1        | 770                        | 5.6         | 94.4        | 611                                | 7.3                        | 92.7        | 1,381         | 12.2                               | 87.8                       | 609           | 3.6                                | 96.4                       | 772           |                                    |                            |  |
| Punjab                 | 4.6                                | 95.4        | 1,044                      | 6.0         | 94.0        | 916                                | 5.2                        | 94.8        | 1,960         | 8.9                                | 91.1                       | 849           | 2.5                                | 97.5                       | 1,111         |                                    |                            |  |
| Rajasthan              | 21.7                               | 78.3        | 1,091                      | 18.2        | 81.8        | 982                                | 20.0                       | 80.0        | 2,073         | 22.2                               | 77.8                       | 877           | 18.3                               | 81.7                       | 1,196         |                                    |                            |  |
| Uttarakhand            | 14.5                               | 85.5        | 669                        | 12.6        | 87.4        | 603                                | 13.5                       | 86.5        | 1,272         | 11.3                               | 88.7                       | 513           | 15.1                               | 84.9                       | 759           |                                    |                            |  |
| <b>Central</b>         |                                    |             |                            |             |             |                                    |                            |             |               |                                    |                            |               |                                    |                            |               |                                    |                            |  |
| Chhattisgarh           | 30.7                               | 69.3        | 1,211                      | 24.2        | 75.8        | 717                                | 28.2                       | 71.8        | 1,928         | 29.9                               | 70.1                       | 858           | 26.9                               | 73.1                       | 1,070         |                                    |                            |  |
| Madhya Pradesh         | 34.1                               | 65.9        | 1,453                      | 28.9        | 71.1        | 1,153                              | 31.7                       | 68.3        | 2,606         | 30.9                               | 69.1                       | 1,177         | 32.3                               | 67.7                       | 1,429         |                                    |                            |  |
| Uttar Pradesh          | 22.1                               | 77.9        | 2,204                      | 24.3        | 75.7        | 1,923                              | 23.1                       | 76.9        | 4,127         | 23.4                               | 76.6                       | 1,891         | 22.9                               | 77.1                       | 2,236         |                                    |                            |  |
| <b>East</b>            |                                    |             |                            |             |             |                                    |                            |             |               |                                    |                            |               |                                    |                            |               |                                    |                            |  |
| Bihar                  | 14.8                               | 85.2        | 1,667                      | 21.5        | 78.5        | 1,726                              | 18.4                       | 81.6        | 3,393         | 19.9                               | 80.1                       | 1,495         | 17.1                               | 82.9                       | 1,898         |                                    |                            |  |
| Jharkhand              | 20.3                               | 79.7        | 1,212                      | 17.9        | 82.1        | 1,086                              | 19.1                       | 80.9        | 2,298         | 20.3                               | 79.7                       | 970           | 18.2                               | 81.8                       | 1,328         |                                    |                            |  |
| Odisha                 | 23.4                               | 76.6        | 1,555                      | 20.6        | 79.4        | 1,077                              | 22.2                       | 77.8        | 2,632         | 29.6                               | 70.4                       | 1,128         | 16.6                               | 83.4                       | 1,504         |                                    |                            |  |
| West Bengal            | 13.5                               | 86.5        | 2,147                      | 16.8        | 83.2        | 1,365                              | 14.8                       | 85.2        | 3,512         | 22.1                               | 77.9                       | 1,456         | 9.7                                | 90.3                       | 2,056         |                                    |                            |  |
| <b>Northeast</b>       |                                    |             |                            |             |             |                                    |                            |             |               |                                    |                            |               |                                    |                            |               |                                    |                            |  |
| Arunachal Pradesh      | 22.2                               | 77.8        | 848                        | 22.3        | 77.7        | 289                                | 22.2                       | 77.8        | 1,137         | 32.8                               | 67.2                       | 508           | 13.9                               | 86.1                       | 629           |                                    |                            |  |
| Assam                  | 13.3                               | 86.7        | 1,399                      | 15.4        | 84.6        | 718                                | 14.1                       | 85.9        | 2,117         | 17.8                               | 82.2                       | 867           | 11.5                               | 88.5                       | 1,250         |                                    |                            |  |
| Manipur                | 16.4                               | 83.6        | 662                        | 18.7        | 81.3        | 517                                | 17.4                       | 82.6        | 1,179         | 27.2                               | 72.8                       | 515           | 9.8                                | 90.2                       | 664           |                                    |                            |  |
| Meghalaya              | 20.9                               | 79.1        | 504                        | 16.7        | 83.3        | 373                                | 19.1                       | 80.9        | 877           | 32.6                               | 67.4                       | 333           | 10.8                               | 89.2                       | 544           |                                    |                            |  |
| Mizoram                | 30.3                               | 69.7        | 656                        | 31.3        | 68.7        | 467                                | 30.7                       | 69.3        | 1,123         | 40.9                               | 59.1                       | 499           | 22.3                               | 77.7                       | 624           |                                    |                            |  |
| Nagaland               | 18.1                               | 81.9        | 662                        | 19.5        | 80.5        | 564                                | 18.8                       | 81.2        | 1,226         | 28.7                               | 71.3                       | 558           | 11.1                               | 88.9                       | 668           |                                    |                            |  |
| Tripura                | 23.1                               | 76.9        | 676                        | 21.2        | 78.8        | 423                                | 22.4                       | 77.6        | 1,099         | 28.5                               | 71.5                       | 447           | 18.2                               | 81.8                       | 652           |                                    |                            |  |
| <b>West</b>            |                                    |             |                            |             |             |                                    |                            |             |               |                                    |                            |               |                                    |                            |               |                                    |                            |  |
| Dadra & Nagar Haveli   | 18.2                               | 81.8        | 589                        | 18.5        | 81.5        | 396                                | 18.3                       | 81.7        | 985           | 22.2                               | 77.8                       | 430           | 15.2                               | 84.8                       | 555           |                                    |                            |  |
| Daman & Diu            | 20.3                               | 79.7        | 532                        | 12.5        | 87.5        | 377                                | 16.8                       | 83.2        | 909           | 10.7                               | 89.3                       | 369           | 20.6                               | 79.4                       | 540           |                                    |                            |  |
| Goa                    | 14.6                               | 85.4        | 687                        | 14.2        | 85.8        | 567                                | 14.4                       | 85.6        | 1,254         | 9.7                                | 90.3                       | 494           | 17.5                               | 82.5                       | 760           |                                    |                            |  |
| Gujarat                | 27.4                               | 72.6        | 1,188                      | 20.4        | 79.6        | 875                                | 24.2                       | 75.8        | 2,063         | 21.0                               | 79.0                       | 871           | 26.4                               | 73.6                       | 1,192         |                                    |                            |  |
| Maharashtra            | 27.3                               | 72.7        | 1,849                      | 25.5        | 74.5        | 1,506                              | 26.4                       | 73.6        | 3,355         | 19.4                               | 80.6                       | 1,349         | 31.1                               | 68.9                       | 2,006         |                                    |                            |  |

continued



continued

| State/ Union Territory    | Age 45-59*                         |                            |        |                                    | Age ≥ 60                   |        |                                    |                            | Total                              |                            |        |                                    | Male (Age ≥ 45)                    |                            |        |                                    | Female (Age ≥ 45)          |        |                                    |                            |
|---------------------------|------------------------------------|----------------------------|--------|------------------------------------|----------------------------|--------|------------------------------------|----------------------------|------------------------------------|----------------------------|--------|------------------------------------|------------------------------------|----------------------------|--------|------------------------------------|----------------------------|--------|------------------------------------|----------------------------|
|                           | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR | Number | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR | Number | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR | Number | <sup>1</sup> Low-risk (normal) WHR | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR | Number | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR | Number | <sup>1</sup> Low-risk (normal) WHR | <sup>2</sup> High-risk WHR |
| <b>South</b>              |                                    |                            |        |                                    |                            |        |                                    |                            |                                    |                            |        |                                    |                                    |                            |        |                                    |                            |        |                                    |                            |
| Andaman & Nicobar Islands | 18.5                               | 81.5                       | 664    | 14.7                               | 85.3                       | 471    | 16.9                               | 83.1                       | 1,135                              | 16.5                       | 83.5   | 513                                | 17.3                               | 82.7                       | 622    | 17.3                               | 82.7                       | 622    | 17.3                               | 82.7                       |
| Andhra Pradesh            | 21.1                               | 78.9                       | 1,298  | 22.3                               | 77.7                       | 913    | 21.6                               | 78.4                       | 2,211                              | 17.6                       | 82.4   | 910                                | 24.4                               | 75.6                       | 1,301  | 24.4                               | 75.6                       | 1,301  | 24.4                               | 75.6                       |
| Karnataka                 | 32.7                               | 67.3                       | 1,297  | 30.1                               | 69.9                       | 904    | 31.6                               | 68.4                       | 2,201                              | 27.1                       | 72.9   | 876                                | 34.4                               | 65.6                       | 1,325  | 34.4                               | 65.6                       | 1,325  | 34.4                               | 65.6                       |
| Kerala                    | 5.1                                | 94.9                       | 1,187  | 5.9                                | 94.1                       | 1,068  | 5.5                                | 94.5                       | 2,255                              | 8.9                        | 91.1   | 888                                | 3.4                                | 96.6                       | 1,367  | 3.4                                | 96.6                       | 1,367  | 3.4                                | 96.6                       |
| Lakshadweep               | 5.1                                | 94.9                       | 605    | 2.3                                | 97.7                       | 462    | 3.8                                | 96.2                       | 1,067                              | 5.1                        | 94.9   | 419                                | 3.0                                | 97.0                       | 648    | 3.0                                | 97.0                       | 648    | 3.0                                | 97.0                       |
| Puducherry                | 15.1                               | 84.9                       | 724    | 15.7                               | 84.3                       | 563    | 15.3                               | 84.7                       | 1,287                              | 12.8                       | 87.2   | 492                                | 17.0                               | 83.0                       | 795    | 17.0                               | 83.0                       | 795    | 17.0                               | 83.0                       |
| Tamil Nadu                | 16.2                               | 83.8                       | 1,886  | 16.7                               | 83.3                       | 1,383  | 16.4                               | 83.6                       | 3,269                              | 16.4                       | 83.6   | 1,266                              | 16.5                               | 83.5                       | 2,003  | 16.5                               | 83.5                       | 2,003  | 16.5                               | 83.5                       |
| Telangana                 | 29.5                               | 70.5                       | 1,187  | 23.1                               | 76.9                       | 922    | 26.6                               | 73.4                       | 2,109                              | 21.3                       | 78.7   | 832                                | 30.1                               | 69.9                       | 1,277  | 30.1                               | 69.9                       | 1,277  | 30.1                               | 69.9                       |

Note

\* Including spouse irrespective of age.

WHO criteria of classification of waist- hip ratio (WHR)

| Men    | Women  | Risk level        |
|--------|--------|-------------------|
| < 0.90 | < 0.85 | Low <sup>1</sup>  |
| ≥ 0.90 | ≥ 0.85 | High <sup>2</sup> |

## 9.5 GRIP STRENGTH

Grip strength, which measures muscle mass and upper body strength, is an important biomarker of health and ageing. Grip strength is strongly associated with health and mortality outcomes (Leong et al., 2015; Peterson et al., 2016c; Oksuzyan et al., 2017; Celis-Morales et al., 2018). Hand grip strength is a reliable, inexpensive, and easily usable surrogate measure of muscle strength (Whitney et al., 2018). The LASI measured grip strength in kilograms using a handheld dynamometer (Smedley's Hand Dynamometer). Health investigators collected two readings of grip strength for both hands (dominant and non-dominant).

Table 9.34 presents the mean grip strength of dominant and non-dominant hands by sex and background characteristics. The overall mean grip strength of the dominant hand is 27 kg among older men age 45 and above and 18.2 kg among older women age 45 and above in India. The mean grip strength is higher for the dominant hand across sex and age groups. For both dominant and non-dominant hands, the mean grip strength is lower among elderly men and women age 60 and above than among older adult men and women age 45-59. The mean grip strength increases with education and household MPCE quintiles.

The cross-state differences in the mean grip strength are presented in Table 9.34. Overall, the mean grip strength is lower among older adult men and women in southern, western, and eastern Indian states. The mean grip strength of the dominant hand among older adult men and women age 45 and above is the highest in the Andaman & Nicobar Islands (31.5 kg and 22.6 kg, respectively). Among elderly men and women age 60 and above, the mean grip strength of the dominant hand ranges from 28.2 kg in Uttarakhand for elderly men and 19.2 kg in Andaman & Nicobar for elderly women to 19 kg and 11.4 kg for elderly men and women, respectively, in Telangana.

**Table 9.34 Mean grip strength in dominant and non-dominant hand among older adults by sex and background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Male (Mean grip strength) <sup>1</sup> |        |          |        |        |                   |        |          |       |        | Female (Mean grip strength) <sup>1</sup> |        |          |        |        |                   |        |          |       |        |      |        |      |        |
|---------------------------------------|----------------------------------------|--------|----------|--------|--------|-------------------|--------|----------|-------|--------|------------------------------------------|--------|----------|--------|--------|-------------------|--------|----------|-------|--------|------|--------|------|--------|
|                                       | Dominant hand                          |        |          |        |        | Non-dominant hand |        |          |       |        | Dominant hand                            |        |          |        |        | Non-dominant hand |        |          |       |        |      |        |      |        |
|                                       | Age 45-59*                             | Number | Age ≥ 60 | Total  | Number | Age 45-59*        | Number | Age ≥ 60 | Total | Number | Age 45-59*                               | Number | Age ≥ 60 | Total  | Number | Age 45-59*        | Number | Age ≥ 60 | Total | Number |      |        |      |        |
| Place of residence                    |                                        |        |          |        |        |                   |        |          |       |        |                                          |        |          |        |        |                   |        |          |       |        |      |        |      |        |
| Rural                                 | 30.4                                   | 8,939  | 23.7     | 9,064  | 26.8   | 18,003            | 27.9   | 8,775    | 21.5  | 8,847  | 24.5                                     | 17,622 | 20.1     | 14,630 | 15.6   | 9,412             | 18.2   | 24,042   | 18.0  | 14,401 | 13.8 | 9,181  | 16.3 | 23,582 |
| Urban                                 | 30.4                                   | 4,891  | 24.3     | 4,348  | 27.5   | 9,239             | 28.0   | 4,726    | 21.8  | 4,194  | 25.1                                     | 8,920  | 20.0     | 8,328  | 15.6   | 4,915             | 18.3   | 13,243   | 17.9  | 8,138  | 13.7 | 4,716  | 16.3 | 12,854 |
| Marital status                        |                                        |        |          |        |        |                   |        |          |       |        |                                          |        |          |        |        |                   |        |          |       |        |      |        |      |        |
| Currently married                     | 30.5                                   | 12,903 | 24.3     | 11,053 | 27.5   | 23,956            | 28.0   | 12,597   | 22.0  | 10,751 | 25.1                                     | 23,348 | 20.3     | 19,137 | 16.6   | 6,734             | 19.3   | 25,871   | 18.2  | 18,819 | 14.8 | 6,570  | 17.3 | 25,389 |
| Widowed                               | 29.5                                   | 441    | 22.1     | 2,005  | 23.3   | 2,446             | 26.9   | 433      | 19.8  | 1,946  | 21.0                                     | 2,379  | 18.8     | 3,078  | 14.7   | 7,234             | 15.8   | 10,312   | 16.8  | 2,986  | 12.9 | 6,988  | 13.9 | 9,974  |
| Divorced/ Separated/ Deserted/ Others | 29.1                                   | 486    | 21.8     | 354    | 25.6   | 840               | 25.5   | 471      | 19.4  | 344    | 22.6                                     | 815    | 19.6     | 743    | 16.1   | 359               | 18.6   | 1,102    | 17.2  | 734    | 14.4 | 339    | 16.4 | 1,073  |
| Living arrangement                    |                                        |        |          |        |        |                   |        |          |       |        |                                          |        |          |        |        |                   |        |          |       |        |      |        |      |        |
| Living alone                          | 30.3                                   | 202    | 22.6     | 324    | 24.6   | 526               | 27.3   | 200      | 20.2  | 307    | 22.1                                     | 507    | 18.6     | 430    | 14.5   | 1,110             | 15.4   | 1,540    | 16.3  | 415    | 12.7 | 1,054  | 13.5 | 1,469  |
| Living with spouse and/ or others     | 28.1                                   | 1,384  | 23.2     | 3,239  | 24.7   | 4,623             | 26.0   | 1,351    | 21.1  | 3,135  | 22.6                                     | 4,486  | 19.4     | 2,505  | 16.1   | 2,203             | 17.8   | 4,708    | 17.4  | 2,451  | 14.4 | 2,130  | 16.0 | 4,581  |
| Living with spouse and children       | 30.8                                   | 11,308 | 24.7     | 7,704  | 28.3   | 19,012            | 28.3   | 11,041   | 22.4  | 7,510  | 25.8                                     | 18,551 | 20.4     | 16,262 | 16.9   | 4,436             | 19.6   | 20,698   | 18.3  | 16,003 | 15.0 | 4,349  | 17.6 | 20,352 |
| Living with children and others       | 29.7                                   | 554    | 22.2     | 1,697  | 23.7   | 2,251             | 26.8   | 544      | 19.9  | 1,650  | 21.3                                     | 2,194  | 19.1     | 3,160  | 14.9   | 5,621             | 16.2   | 8,781    | 17.2  | 3,084  | 13.0 | 5,441  | 14.3 | 8,525  |
| Living with others only               | 28.3                                   | 382    | 21.8     | 448    | 24.3   | 830               | 25.0   | 365      | 19.4  | 439    | 21.5                                     | 804    | 18.8     | 601    | 14.3   | 957               | 16.1   | 1,558    | 16.7  | 586    | 12.5 | 923    | 14.2 | 1,509  |
| Religion                              |                                        |        |          |        |        |                   |        |          |       |        |                                          |        |          |        |        |                   |        |          |       |        |      |        |      |        |
| Hindu                                 | 30.3                                   | 10,207 | 23.8     | 9,810  | 26.9   | 20,017            | 27.8   | 9,928    | 21.5  | 9,499  | 24.5                                     | 19,427 | 20.0     | 16,781 | 15.5   | 10,487            | 18.2   | 27,268   | 18.0  | 16,440 | 13.7 | 10,143 | 16.2 | 26,583 |
| Muslim                                | 31.2                                   | 1,540  | 24.8     | 1,611  | 27.9   | 3,151             | 28.7   | 1,514    | 22.6  | 1,584  | 25.5                                     | 3,098  | 20.2     | 2,887  | 15.9   | 1,677             | 18.5   | 4,564    | 17.9  | 2,847  | 14.0 | 1,638  | 16.4 | 4,485  |
| Christian                             | 29.3                                   | 1,421  | 22.1     | 1,329  | 25.5   | 2,750             | 26.9   | 1,406    | 20.0  | 1,303  | 23.2                                     | 2,709  | 19.7     | 2,288  | 14.6   | 1,473             | 17.7   | 3,761    | 17.7  | 2,254  | 12.9 | 1,431  | 15.8 | 3,685  |
| Others                                | 32.1                                   | 662    | 24.3     | 662    | 27.9   | 1,324             | 28.9   | 653      | 21.6  | 655    | 25.0                                     | 1,308  | 20.8     | 1,002  | 16.6   | 690               | 19.0   | 1,692    | 18.6  | 998    | 14.8 | 685    | 17.0 | 1,683  |
| Caste/tribe                           |                                        |        |          |        |        |                   |        |          |       |        |                                          |        |          |        |        |                   |        |          |       |        |      |        |      |        |
| Scheduled tribe                       | 29.5                                   | 2,621  | 23.5     | 2,190  | 26.7   | 4,811             | 27.2   | 2,583    | 21.4  | 2,142  | 24.5                                     | 4,725  | 20.1     | 4,119  | 15.4   | 2,409             | 18.2   | 6,528    | 18.1  | 4,078  | 13.9 | 2,358  | 16.4 | 6,436  |
| Scheduled caste                       | 29.7                                   | 2,348  | 23.1     | 2,184  | 26.3   | 4,532             | 27.1   | 2,285    | 20.8  | 2,135  | 23.8                                     | 4,420  | 19.7     | 3,959  | 15.5   | 2,354             | 18.0   | 6,313    | 17.6  | 3,896  | 13.5 | 2,294  | 16.0 | 6,190  |
| Other backward class                  | 30.1                                   | 5,144  | 23.5     | 5,172  | 26.7   | 10,316            | 27.8   | 4,973    | 21.3  | 4,972  | 24.4                                     | 9,945  | 19.8     | 8,650  | 15.3   | 5,390             | 18.0   | 14,040   | 17.8  | 8,415  | 13.5 | 5,151  | 16.0 | 13,566 |
| None of the above                     | 31.8                                   | 3,717  | 25.2     | 3,866  | 28.2   | 7,583             | 29.0   | 3,660    | 22.6  | 3,792  | 25.6                                     | 7,452  | 20.9     | 6,230  | 16.2   | 4,174             | 18.9   | 10,404   | 18.7  | 6,150  | 14.3 | 4,094  | 16.9 | 10,244 |

continued

continued

| Background characteristics               | Male (Mean grip strength) <sup>1</sup> |               |             |               |             |                   |             |               |             |               | Female (Mean grip strength) <sup>1</sup> |               |             |               |             |                   |             |               |             |               |             |               |             |               |
|------------------------------------------|----------------------------------------|---------------|-------------|---------------|-------------|-------------------|-------------|---------------|-------------|---------------|------------------------------------------|---------------|-------------|---------------|-------------|-------------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|
|                                          | Dominant hand                          |               |             |               |             | Non-dominant hand |             |               |             |               | Dominant hand                            |               |             |               |             | Non-dominant hand |             |               |             |               |             |               |             |               |
|                                          | Age 45-59*                             | Number        | Age ≥ 60    | Total         | Number      | Age 45-59*        | Number      | Age ≥ 60      | Total       | Number        | Age 45-59*                               | Number        | Age ≥ 60    | Total         | Number      | Age 45-59*        | Number      | Age ≥ 60      | Total       | Number        |             |               |             |               |
| <b>Education</b>                         |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| No schooling                             | 28.8                                   | 3,593         | 22.5        | 4,818         | 25.0        | 8,411             | 26.6        | 3,496         | 20.3        | 4,690         | 22.8                                     | 8,186         | 19.5        | 11,201        | 15.3        | 9,984             | 17.4        | 21,185        | 17.5        | 11,015        | 13.5        | 9,689         | 15.6        | 20,704        |
| Less than 5 years                        | 29.7                                   | 1,727         | 23.5        | 1,985         | 26.2        | 3,712             | 27.5        | 1,688         | 21.2        | 1,927         | 24.0                                     | 3,615         | 20.3        | 2,210         | 15.6        | 1,421             | 18.5        | 3,631         | 18.3        | 2,162         | 13.9        | 1,392         | 16.6        | 3,554         |
| complete                                 |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| 5-9 years                                | 30.9                                   | 4,302         | 24.7        | 3,468         | 28.0        | 7,770             | 28.3        | 4,189         | 22.3        | 3,372         | 25.5                                     | 7,561         | 20.9        | 5,618         | 16.8        | 1,901             | 19.7        | 7,519         | 18.6        | 5,510         | 15.0        | 1,847         | 17.6        | 7,357         |
| complete                                 |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| 10 or more years                         | 31.8                                   | 4,208         | 25.6        | 3,141         | 29.1        | 7,349             | 28.9        | 4,128         | 23.2        | 3,052         | 26.4                                     | 7,180         | 20.9        | 3,929         | 16.2        | 1,021             | 19.8        | 4,950         | 18.9        | 3,852         | 13.7        | 969           | 17.8        | 4,821         |
| complete                                 |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| <b>Work status</b>                       |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Currently working                        | 30.7                                   | 12,164        | 25.5        | 5,741         | 28.9        | 17,905            | 28.2        | 11,904        | 23.2        | 5,629         | 26.5                                     | 17,533        | 19.8        | 9,249         | 16.5        | 2,688             | 19.0        | 11,937        | 17.8        | 9,114         | 14.7        | 2,630         | 17.1        | 11,744        |
| Worked in past but currently not working | 27.8                                   | 1,248         | 22.4        | 7,032         | 23.1        | 8,280             | 25.3        | 1,183         | 20.2        | 6,784         | 20.8                                     | 7,967         | 19.0        | 2,845         | 14.6        | 4,631             | 16.2        | 7,476         | 17.1        | 2,778         | 12.8        | 4,474         | 14.4        | 7,252         |
| Never worked                             | 28.1                                   | 418           | 23.1        | 639           | 24.8        | 1,057             | 25.8        | 414           | 20.2        | 628           | 22.1                                     | 1,042         | 20.6        | 10,864        | 15.9        | 7,008             | 18.6        | 17,872        | 18.5        | 10,647        | 14.0        | 6,793         | 16.6        | 17,440        |
| <b>MPCE quintile</b>                     |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Poorest                                  | 29.5                                   | 2,655         | 23.2        | 2,684         | 26.3        | 5,339             | 27.4        | 2,572         | 20.8        | 2,610         | 24.0                                     | 5,182         | 19.8        | 4,353         | 15.3        | 2,982             | 17.9        | 7,335         | 17.8        | 4,253         | 13.5        | 2,896         | 15.9        | 7,149         |
| Poorer                                   | 30.2                                   | 2,735         | 23.5        | 2,745         | 26.7        | 5,480             | 27.6        | 2,681         | 21.2        | 2,645         | 24.3                                     | 5,326         | 20.0        | 4,567         | 15.6        | 2,987             | 18.2        | 7,554         | 18.0        | 4,486         | 13.7        | 2,898         | 16.2        | 7,384         |
| Middle                                   | 30.4                                   | 2,749         | 24.1        | 2,740         | 27.0        | 5,489             | 27.9        | 2,676         | 21.9        | 2,665         | 24.7                                     | 5,341         | 20.1        | 4,601         | 15.6        | 2,978             | 18.3        | 7,579         | 18.0        | 4,522         | 13.9        | 2,887         | 16.3        | 7,409         |
| Richer                                   | 30.8                                   | 2,883         | 24.2        | 2,667         | 27.4        | 5,550             | 28.3        | 2,811         | 21.8        | 2,613         | 25.0                                     | 5,424         | 20.3        | 4,750         | 15.7        | 2,797             | 18.5        | 7,547         | 18.2        | 4,672         | 13.9        | 2,706         | 16.5        | 7,378         |
| Richest                                  | 31.3                                   | 2,808         | 24.5        | 2,576         | 28.0        | 5,384             | 28.5        | 2,761         | 22.2        | 2,508         | 25.5                                     | 5,269         | 20.1        | 4,687         | 15.7        | 2,583             | 18.4        | 7,270         | 18.0        | 4,606         | 13.9        | 2,510         | 16.5        | 7,116         |
| <b>Total</b>                             | <b>30.4</b>                            | <b>13,830</b> | <b>23.9</b> | <b>13,412</b> | <b>27.0</b> | <b>27,242</b>     | <b>27.9</b> | <b>13,501</b> | <b>21.6</b> | <b>13,041</b> | <b>24.6</b>                              | <b>26,542</b> | <b>20.1</b> | <b>22,958</b> | <b>15.6</b> | <b>14,327</b>     | <b>18.2</b> | <b>37,285</b> | <b>18.0</b> | <b>22,539</b> | <b>13.8</b> | <b>13,897</b> | <b>16.3</b> | <b>36,436</b> |

Note

\* Including spouse irrespective of age.

<sup>1</sup>Grip strength measures bodily muscle strength and is an overall marker of health among elderly population. Mean grip strength is an average of two readings each for dominant and non-dominant hand

**Table 9.36 Mean grip strength in dominant and non-dominant hand among older adults by sex, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory    | Male (Mean grip strength) <sup>1</sup> |               |             |               |             |                   |             |               |             |               | Female (Mean grip strength) <sup>1</sup> |               |             |               |             |                   |             |               |             |               |             |               |             |               |
|---------------------------|----------------------------------------|---------------|-------------|---------------|-------------|-------------------|-------------|---------------|-------------|---------------|------------------------------------------|---------------|-------------|---------------|-------------|-------------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|
|                           | Dominant hand                          |               |             |               |             | Non-dominant hand |             |               |             |               | Dominant hand                            |               |             |               |             | Non-dominant hand |             |               |             |               |             |               |             |               |
|                           | Age 45-59*                             | Number        | Age ≥ 60    | Total         | Number      | Age 45-59*        | Number      | Age ≥ 60      | Total       | Number        | Age 45-59*                               | Number        | Age ≥ 60    | Total         | Number      | Age 45-59*        | Number      | Age ≥ 60      | Total       | Number        |             |               |             |               |
| <b>India</b>              | <b>30.4</b>                            | <b>13,830</b> | <b>23.9</b> | <b>13,412</b> | <b>27.0</b> | <b>27,242</b>     | <b>27.9</b> | <b>13,501</b> | <b>21.6</b> | <b>13,041</b> | <b>24.6</b>                              | <b>26,542</b> | <b>20.1</b> | <b>22,958</b> | <b>15.6</b> | <b>14,327</b>     | <b>18.2</b> | <b>37,285</b> | <b>18.0</b> | <b>22,539</b> | <b>13.8</b> | <b>13,897</b> | <b>16.3</b> | <b>36,436</b> |
| <b>North</b>              |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Chandigarh                | 32.0                                   | 216           | 26.0        | 157           | 29.4        | 373               | 29.0        | 212           | 23.4        | 154           | 26.5                                     | 366           | 21.9        | 314           | 18.2        | 166               | 20.6        | 480           | 19.4        | 312           | 15.4        | 166           | 18.0        | 478           |
| Delhi                     | 30.4                                   | 332           | 25.3        | 236           | 28.2        | 568               | 29.0        | 327           | 23.1        | 233           | 26.5                                     | 560           | 20.9        | 457           | 16.7        | 226               | 19.5        | 683           | 19.5        | 459           | 15.1        | 221           | 18.0        | 680           |
| Haryana                   | 33.9                                   | 376           | 27.4        | 308           | 30.8        | 684               | 31.4        | 366           | 25.0        | 300           | 28.4                                     | 666           | 22.0        | 553           | 17.6        | 423               | 19.9        | 976           | 19.9        | 554           | 15.5        | 418           | 17.9        | 972           |
| Himachal Pradesh          | 34.9                                   | 239           | 27.7        | 284           | 30.7        | 523               | 32.0        | 236           | 25.1        | 286           | 27.9                                     | 522           | 22.3        | 494           | 16.9        | 284               | 20.2        | 778           | 20.5        | 488           | 15.2        | 283           | 18.4        | 771           |
| Jammu & Kashmir           | 34.1                                   | 273           | 27.2        | 323           | 30.1        | 596               | 30.5        | 275           | 23.9        | 313           | 26.7                                     | 588           | 22.6        | 473           | 17.5        | 280               | 20.4        | 753           | 19.9        | 469           | 15.5        | 279           | 18.1        | 748           |
| Punjab                    | 34.0                                   | 391           | 26.3        | 453           | 29.8        | 844               | 30.4        | 381           | 23.4        | 440           | 26.5                                     | 821           | 22.1        | 648           | 17.0        | 454               | 20.0        | 1,102         | 19.3        | 640           | 14.9        | 448           | 17.5        | 1,088         |
| Rajasthan                 | 28.9                                   | 423           | 23.9        | 451           | 26.3        | 874               | 26.7        | 418           | 21.9        | 447           | 24.1                                     | 865           | 19.9        | 670           | 15.6        | 519               | 17.9        | 1,189         | 18.2        | 661           | 14.0        | 513           | 16.2        | 1,174         |
| Uttarakhand               | 34.3                                   | 228           | 28.2        | 272           | 30.9        | 500               | 31.6        | 223           | 26.1        | 270           | 28.5                                     | 493           | 22.1        | 430           | 18.0        | 305               | 20.3        | 735           | 20.4        | 421           | 16.3        | 294           | 18.6        | 715           |
| <b>Central</b>            |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Chhattisgarh              | 29.5                                   | 489           | 24.2        | 355           | 27.2        | 844               | 27.1        | 479           | 21.7        | 351           | 24.8                                     | 830           | 19.6        | 714           | 15.8        | 348               | 18.3        | 1,062         | 18.3        | 705           | 14.4        | 342           | 17.0        | 1,047         |
| Madhya Pradesh            | 32.3                                   | 610           | 25.4        | 567           | 28.8        | 1,177             | 29.7        | 596           | 24.0        | 546           | 26.9                                     | 1,142         | 20.8        | 827           | 16.3        | 578               | 18.8        | 1,405         | 18.8        | 816           | 14.8        | 564           | 17.1        | 1,380         |
| Uttar Pradesh             | 31.8                                   | 873           | 24.8        | 997           | 27.9        | 1,870             | 29.0        | 869           | 22.2        | 987           | 25.2                                     | 1,856         | 20.5        | 1,302         | 15.9        | 909               | 18.5        | 2,211         | 18.1        | 1,299         | 14.0        | 905           | 16.4        | 2,204         |
| <b>East</b>               |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Bihar                     | 28.0                                   | 611           | 23.2        | 883           | 25.0        | 1,494             | 25.1        | 607           | 20.5        | 875           | 22.2                                     | 1,482         | 19.3        | 1,052         | 15.5        | 851               | 17.6        | 1,903         | 17.0        | 1,048         | 13.5        | 844           | 15.4        | 1,892         |
| Jharkhand                 | 30.6                                   | 422           | 24.2        | 537           | 27.0        | 959               | 29.1        | 397           | 22.7        | 487           | 25.5                                     | 884           | 20.0        | 769           | 15.8        | 524               | 18.3        | 1,293         | 18.9        | 744           | 14.8        | 488           | 17.2        | 1,232         |
| Odisha                    | 31.2                                   | 602           | 23.3        | 534           | 27.3        | 1,136             | 28.4        | 595           | 21.1        | 524           | 24.9                                     | 1,119         | 20.5        | 953           | 15.4        | 549               | 18.5        | 1,502         | 17.8        | 944           | 13.3        | 540           | 16.1        | 1,484         |
| West Bengal               | 31.9                                   | 782           | 25.5        | 670           | 28.9        | 1,452             | 28.9        | 772           | 22.8        | 655           | 26.1                                     | 1,427         | 21.8        | 1,355         | 16.7        | 690               | 20.0        | 2,045         | 19.3        | 1,332         | 14.9        | 654           | 17.8        | 1,986         |
| <b>Northeast</b>          |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Arunachal Pradesh         | 32.6                                   | 345           | 24.7        | 158           | 30.2        | 503               | 29.6        | 347           | 21.5        | 159           | 27.2                                     | 506           | 22.6        | 501           | 17.9        | 125               | 21.7        | 626           | 20.1        | 497           | 15.9        | 120           | 19.3        | 617           |
| Assam                     | 33.4                                   | 513           | 27.5        | 345           | 31.0        | 858               | 30.8        | 510           | 24.9        | 340           | 28.4                                     | 850           | 22.4        | 867           | 17.1        | 365               | 20.7        | 1,232         | 20.2        | 857           | 15.4        | 354           | 18.7        | 1,211         |
| Manipur                   | 34.1                                   | 278           | 26.6        | 229           | 30.6        | 507               | 31.0        | 281           | 24.0        | 228           | 27.7                                     | 509           | 21.3        | 372           | 16.6        | 284               | 19.2        | 656           | 19.5        | 375           | 14.9        | 284           | 17.4        | 659           |
| Meghalaya                 | 30.5                                   | 183           | 25.0        | 146           | 28.1        | 329               | 26.5        | 181           | 21.5        | 145           | 24.4                                     | 326           | 20.6        | 317           | 16.4        | 221               | 18.9        | 539           | 17.5        | 319           | 13.6        | 218           | 15.9        | 537           |
| Mizoram                   | 33.5                                   | 266           | 26.8        | 232           | 30.1        | 498               | 30.4        | 263           | 24.0        | 230           | 27.2                                     | 493           | 20.1        | 390           | 16.3        | 231               | 18.6        | 621           | 18.0        | 386           | 14.5        | 226           | 16.7        | 612           |
| Nagaland                  | 33.0                                   | 275           | 26.6        | 282           | 29.4        | 557               | 30.4        | 274           | 23.5        | 280           | 26.4                                     | 554           | 20.7        | 385           | 16.1        | 279               | 18.8        | 664           | 18.2        | 384           | 13.9        | 278           | 16.4        | 662           |
| Tripura                   | 30.3                                   | 241           | 24.3        | 206           | 27.5        | 447               | 26.8        | 239           | 21.6        | 203           | 24.3                                     | 442           | 21.8        | 434           | 17.5        | 217               | 20.3        | 651           | 18.9        | 435           | 15.2        | 217           | 17.6        | 652           |
| <b>West</b>               |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Dadra & Nagar Haveli      | 30.2                                   | 252           | 23.4        | 174           | 27.7        | 426               | 28.2        | 247           | 22.3        | 168           | 26.0                                     | 415           | 20.0        | 334           | 15.1        | 225               | 18.1        | 559           | 18.3        | 329           | 13.9        | 224           | 16.6        | 553           |
| Daman & Diu               | 28.0                                   | 209           | 22.9        | 167           | 25.5        | 376               | 26.8        | 191           | 20.9        | 151           | 23.9                                     | 342           | 19.5        | 320           | 14.8        | 226               | 17.4        | 546           | 18.1        | 309           | 13.4        | 211           | 16.1        | 520           |
| Goa                       | 31.4                                   | 235           | 24.1        | 251           | 27.6        | 486               | 28.7        | 236           | 22.3        | 245           | 25.4                                     | 481           | 19.6        | 446           | 15.0        | 307               | 17.7        | 753           | 17.7        | 441           | 13.1        | 303           | 15.8        | 744           |
| Gujarat                   | 29.1                                   | 471           | 22.8        | 397           | 26.1        | 868               | 27.1        | 457           | 20.9        | 382           | 24.1                                     | 839           | 18.9        | 704           | 14.8        | 459               | 17.2        | 1,163         | 17.5        | 691           | 13.3        | 441           | 15.7        | 1,132         |
| Maharashtra               | 30.4                                   | 645           | 23.7        | 705           | 26.7        | 1,350             | 27.6        | 638           | 21.1        | 699           | 24.0                                     | 1,337         | 20.0        | 1,193         | 15.4        | 794               | 17.9        | 1,987         | 18.1        | 1,187         | 13.7        | 786           | 16.1        | 1,973         |
| <b>South</b>              |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |
| Andaman & Nicobar Islands | 35.2                                   | 267           | 27.6        | 249           | 31.5        | 516               | 32.9        | 259           | 25.4        | 242           | 29.3                                     | 501           | 24.5        | 393           | 19.2        | 220               | 22.6        | 613           | 21.8        | 388           | 17.2        | 216           | 20.2        | 604           |
| Andhra Pradesh            | 28.4                                   | 451           | 20.8        | 451           | 24.6        | 902               | 26.0        | 444           | 18.6        | 443           | 22.2                                     | 887           | 17.9        | 833           | 13.3        | 445               | 16.2        | 1,278         | 15.9        | 824           | 11.6        | 436           | 14.4        | 1,260         |
| Karnataka                 | 28.8                                   | 440           | 22.5        | 423           | 25.9        | 863               | 27.4        | 435           | 20.8        | 415           | 24.3                                     | 850           | 19.3        | 833           | 14.9        | 461               | 17.7        | 1,294         | 17.7        | 835           | 12.8        | 463           | 15.9        | 1,298         |
| Kerala                    | 28.4                                   | 400           | 22.6        | 478           | 25.2        | 878               | 26.9        | 393           | 21.2        | 461           | 23.7                                     | 854           | 18.9        | 756           | 14.1        | 567               | 16.6        | 1,323         | 17.5        | 735           | 13.0        | 544           | 15.4        | 1,279         |
| Lakshadweep               | 30.7                                   | 193           | 25.7        | 226           | 27.8        | 419               | 28.1        | 186           | 24.0        | 221           | 25.7                                     | 407           | 19.7        | 406           | 15.6        | 235               | 18.1        | 641           | 17.9        | 400           | 14.2        | 227           | 16.4        | 627           |
| Puducherry                | 31.0                                   | 252           | 25.0        | 239           | 28.0        | 491               | 28.5        | 242           | 23.1        | 233           | 25.8                                     | 475           | 21.5        | 467           | 16.7        | 320               | 19.4        | 787           | 19.4        | 464           | 14.7        | 311           | 17.4        | 775           |
| Tamil Nadu                | 28.1                                   | 652           | 21.2        | 623           | 24.6        | 1,275             | 25.2        | 533           | 18.7        | 521           | 21.9                                     | 1,054         | 19.5        | 1,225         | 15.3        | 780               | 17.8        | 2,005         | 17.0        | 1,023         | 12.8        | 633           | 15.3        | 1,656         |
| Telangana                 | 26.3                                   | 395           | 19.0        | 404           | 22.4        | 799               | 24.1        | 392           | 16.9        | 407           | 20.2                                     | 799           | 15.8        | 771           | 11.4        | 459               | 14.1        | 1,230         | 13.9        | 768           | 10.0        | 446           | 12.4        | 1,214         |
| Note                      |                                        |               |             |               |             |                   |             |               |             |               |                                          |               |             |               |             |                   |             |               |             |               |             |               |             |               |

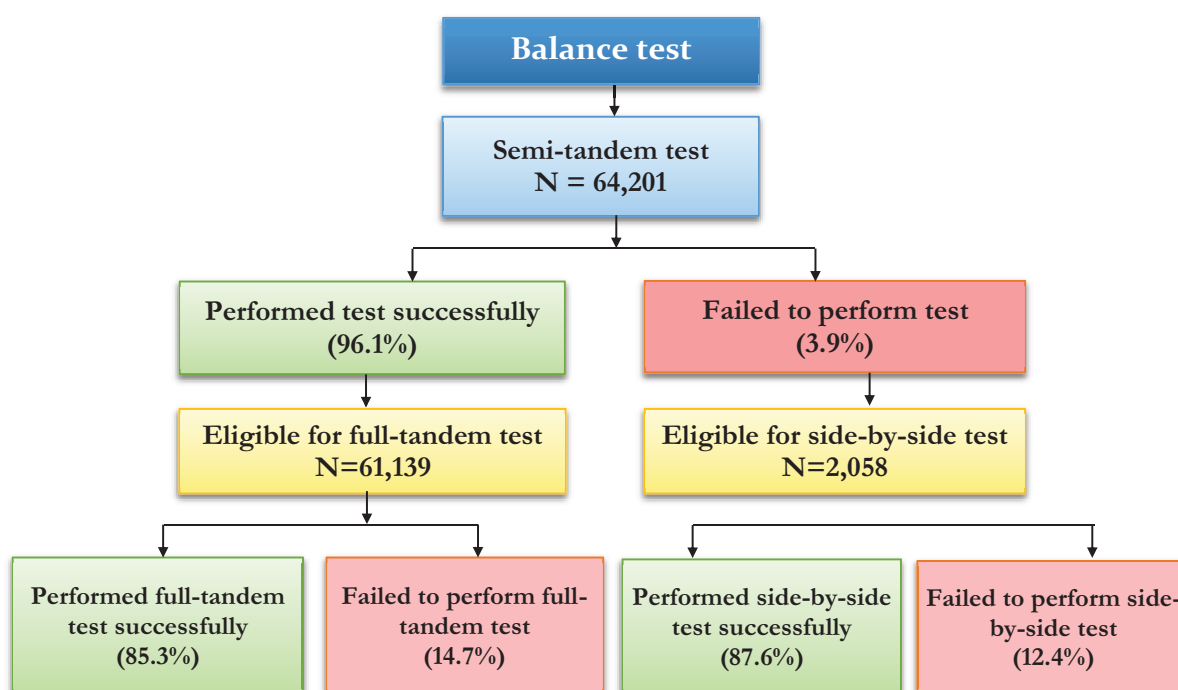
\* Including spouse irrespective of age.

<sup>1</sup> Grip strength measures bodily muscle strength and is an overall marker of health among elderly population. Mean grip strength is an average of two readings each for dominant and non-dominant hand.

## 9.6 BALANCE TEST

Balance tests are useful predictors of health outcomes, such as mortality, disability, institutionalisation, inflammation, risk of falls, decline in cognitive ability, and low physiological reserve (Crimmins et al., 2008). In the LASI, the mid-level balance test (semi-tandem) was conducted first; depending on the participant's performance in the semi-tandem test, either the full-tandem or the side-by-side stance was then performed (as described in flow chart 9.10). The semi-tandem test was successfully performed for 10 seconds by 96% of older adults age 45 and above. In the subsequent full-tandem test, 85% of older adults 45 and above successfully maintained their balance (for 60 and 30 seconds in individuals age <70 and ≥70, respectively). The 4% of older adults age 45 and above who failed to maintain the semi-tandem position for 10 seconds, subsequently performed the side-by-side balance test. Among older adults who performed the side-by-side balance test, 12% failed to maintain the side-by-side position for 10 seconds.

**Chart 9.3: Flow chart of the balance test performed among older adults age 45 and above\*, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age.

## 9.7 TIMED WALK

Walking speed (also known as gait speed) is an indicator of overall health, level of disability, future use of health care, and mortality among older people. Walking speed and steadiness decline with age, a decline which increases the chances of falls and injuries. The timed walk test is a quick, inexpensive, and highly reliable measure of the functional capacity of older persons and can be easily performed in a home interview. It has been shown that gait speed predicts major health outcomes among older people, such as self-reported health (Jylhä et al., 2001) and mortality (Studenski et al., 2011). In the LASI, respondents were asked to walk 4 metres twice. The time taken to walk was recorded in seconds each time, and the mean time was calculated.

Table 9.36 and 9.37 present the mean time taken for a 4-metre walk by older adults age 45 and above according to background characteristics and states/UTs, respectively. Older adults age 45 and above in India take an average of 5.4 seconds to walk 4 metres. Elderly age 60 and above took longer (6 seconds) than older adults age 45-59 (4.9 seconds). The mean time taken to walk 4 metres by older adults does not show pronounced cross-state variation in India, ranging from 4.7 seconds in Puducherry to 6.5 seconds in Delhi. The mean time taken to walk 4 metres among elderly age 60 and above is higher in Delhi (7.2 seconds) and Kerala (7.0 seconds), whereas the time taken to walk 4 metres in all other states/UTs is between 5 to 6 seconds.

**Table 9.36 Mean time taken for 4-metre walk among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Mean time for 4-metre walk |               |            |               |            |               |
|------------------------------------------|----------------------------|---------------|------------|---------------|------------|---------------|
|                                          | Age 45-59*                 | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>Place of residence</b>                |                            |               |            |               |            |               |
| Rural                                    | 4.9                        | 23,662        | 6.0        | 18,359        | 5.4        | 42,021        |
| Urban                                    | 5.0                        | 13,247        | 6.1        | 9,136         | 5.4        | 22,383        |
| <b>Sex</b>                               |                            |               |            |               |            |               |
| Male                                     | 4.7                        | 13,828        | 5.6        | 13,284        | 5.2        | 27,112        |
| Female                                   | 5.0                        | 23,081        | 6.4        | 14,211        | 5.6        | 37,292        |
| <b>Marital status</b>                    |                            |               |            |               |            |               |
| Currently married                        | 4.9                        | 32,164        | 5.7        | 17,677        | 5.2        | 49,841        |
| Widowed                                  | 5.2                        | 3,528         | 6.7        | 9,124         | 6.3        | 12,652        |
| Divorced/Separated/Deserted/Others       | 5.0                        | 1,217         | 5.9        | 694           | 5.3        | 1,911         |
| <b>Living arrangement</b>                |                            |               |            |               |            |               |
| Living alone                             | 5.0                        | 635           | 6.4        | 1,431         | 6.1        | 2,066         |
| Living with spouse and/or others         | 5.0                        | 3,896         | 5.7        | 5,420         | 5.4        | 9,316         |
| Living with spouse and children          | 4.9                        | 27,682        | 5.6        | 12,057        | 5.1        | 39,739        |
| Living with children and others          | 5.1                        | 3,717         | 6.6        | 7,213         | 6.2        | 10,930        |
| Living with others only                  | 5.1                        | 979           | 6.8        | 1,374         | 6.1        | 2,353         |
| <b>Religion</b>                          |                            |               |            |               |            |               |
| Hindu                                    | 4.9                        | 27,099        | 6.0        | 20,152        | 5.4        | 47,251        |
| Muslim                                   | 5.1                        | 4,450         | 6.2        | 3,224         | 5.6        | 7,674         |
| Christian                                | 5.1                        | 3,703         | 6.2        | 2,772         | 5.6        | 6,475         |
| Others                                   | 4.7                        | 1,657         | 6.1        | 1,347         | 5.3        | 3,004         |
| <b>Caste/tribe</b>                       |                            |               |            |               |            |               |
| Scheduled tribe                          | 4.9                        | 6,759         | 6.0        | 4,567         | 5.4        | 11,326        |
| Scheduled caste                          | 4.9                        | 6,332         | 6.0        | 4,492         | 5.4        | 10,824        |
| Other backward class                     | 4.9                        | 13,855        | 6.0        | 10,475        | 5.4        | 24,330        |
| None of the above                        | 4.9                        | 9,963         | 6.0        | 7,961         | 5.4        | 17,924        |
| <b>Education</b>                         |                            |               |            |               |            |               |
| No schooling                             | 5.0                        | 14,871        | 6.3        | 14,664        | 5.7        | 29,535        |
| Less than 5 years complete               | 4.9                        | 3,955         | 6.0        | 3,382         | 5.4        | 7,337         |
| 5-9 years complete                       | 4.8                        | 9,936         | 5.8        | 5,337         | 5.2        | 15,273        |
| 10 or more years complete                | 4.8                        | 8,147         | 5.4        | 4,112         | 5.0        | 12,259        |
| <b>Work status</b>                       |                            |               |            |               |            |               |
| Currently working                        | 4.8                        | 21,484        | 5.3        | 8,484         | 4.9        | 29,968        |
| Worked in past but currently not working | 5.2                        | 4,083         | 6.4        | 11,455        | 6.1        | 15,538        |
| Never worked                             | 5.0                        | 11,342        | 6.4        | 7,556         | 5.6        | 18,898        |
| <b>MPCE quintile</b>                     |                            |               |            |               |            |               |
| Poorest                                  | 4.9                        | 7,029         | 6.1        | 5,624         | 5.4        | 12,653        |
| Poorer                                   | 4.9                        | 7,342         | 6.0        | 5,686         | 5.4        | 13,028        |
| Middle                                   | 4.9                        | 7,383         | 6.0        | 5,671         | 5.4        | 13,054        |
| Richer                                   | 4.9                        | 7,655         | 6.0        | 5,419         | 5.4        | 13,074        |
| Richest                                  | 5.0                        | 7,500         | 6.1        | 5,095         | 5.4        | 12,595        |
| <b>Total</b>                             | <b>4.9</b>                 | <b>36,909</b> | <b>6.0</b> | <b>27,495</b> | <b>5.4</b> | <b>64,404</b> |

Note

\* Including spouse irrespective of age.



**Table 9.37 Mean time taken for 4-metre walk among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/ Union Territory    | Mean time for 4-metre walk |               |            |               |            |               |
|---------------------------|----------------------------|---------------|------------|---------------|------------|---------------|
| <b>India</b>              | <b>4.9</b>                 | <b>36,909</b> | <b>6.0</b> | <b>27,495</b> | <b>5.4</b> | <b>64,404</b> |
| <b>North</b>              |                            |               |            |               |            |               |
| Chandigarh                | 4.9                        | 535           | 6.4        | 321           | 5.5        | 856           |
| Delhi                     | 6.2                        | 781           | 7.2        | 439           | 6.5        | 1,220         |
| Haryana                   | 5.0                        | 930           | 5.9        | 718           | 5.4        | 1,648         |
| Himachal Pradesh          | 4.8                        | 728           | 5.9        | 574           | 5.3        | 1,302         |
| Jammu & Kashmir           | 5.0                        | 758           | 6.0        | 575           | 5.5        | 1,333         |
| Punjab                    | 4.6                        | 1,031         | 6.1        | 896           | 5.3        | 1,927         |
| Rajasthan                 | 4.8                        | 1,085         | 5.9        | 969           | 5.4        | 2,054         |
| Uttarakhand               | 4.6                        | 666           | 5.4        | 596           | 5.0        | 1,262         |
| <b>Central</b>            |                            |               |            |               |            |               |
| Chhattisgarh              | 4.8                        | 1,206         | 5.6        | 710           | 5.1        | 1,916         |
| Madhya Pradesh            | 5.0                        | 1,452         | 6.3        | 1,137         | 5.6        | 2,589         |
| Uttar Pradesh             | 4.6                        | 2,196         | 5.8        | 1,897         | 5.2        | 4,093         |
| <b>East</b>               |                            |               |            |               |            |               |
| Bihar                     | 5.1                        | 1,664         | 6.0        | 1,710         | 5.6        | 3,374         |
| Jharkhand                 | 5.0                        | 1,204         | 5.9        | 1,068         | 5.4        | 2,272         |
| Odisha                    | 4.9                        | 1,555         | 6.2        | 1,074         | 5.4        | 2,629         |
| West Bengal               | 5.0                        | 2,134         | 6.1        | 1,324         | 5.5        | 3,458         |
| <b>Northeast</b>          |                            |               |            |               |            |               |
| Arunachal Pradesh         | 4.5                        | 841           | 6.4        | 286           | 4.9        | 1,127         |
| Assam                     | 4.7                        | 1,393         | 5.9        | 698           | 5.1        | 2,091         |
| Manipur                   | 5.3                        | 658           | 6.3        | 510           | 5.7        | 1,168         |
| Meghalaya                 | 5.5                        | 500           | 6.9        | 368           | 6.1        | 868           |
| Mizoram                   | 5.0                        | 654           | 6.5        | 460           | 5.6        | 1,114         |
| Nagaland                  | 4.7                        | 660           | 5.2        | 558           | 4.9        | 1,218         |
| Tripura                   | 5.0                        | 676           | 6.1        | 422           | 5.4        | 1,098         |
| <b>West</b>               |                            |               |            |               |            |               |
| Dadra & Nagar Haveli      | 4.7                        | 589           | 5.8        | 401           | 5.1        | 990           |
| Daman & Diu               | 5.3                        | 531           | 6.5        | 374           | 5.9        | 905           |
| Goa                       | 4.8                        | 687           | 6.0        | 554           | 5.3        | 1,241         |
| Gujarat                   | 4.9                        | 1,187         | 6.1        | 869           | 5.5        | 2,056         |
| Maharashtra               | 4.5                        | 1,836         | 5.9        | 1,479         | 5.2        | 3,315         |
| <b>South</b>              |                            |               |            |               |            |               |
| Andaman & Nicobar Islands | 4.6                        | 660           | 5.6        | 471           | 5.0        | 1,131         |
| Andhra Pradesh            | 5.3                        | 1,274         | 6.6        | 873           | 5.8        | 2,147         |
| Karnataka                 | 5.2                        | 1,293         | 6.1        | 896           | 5.6        | 2,189         |
| Kerala                    | 5.4                        | 1,175         | 7.0        | 1,000         | 6.2        | 2,175         |
| Lakshadweep               | 5.2                        | 595           | 6.4        | 449           | 5.7        | 1,044         |
| Puducherry                | 4.1                        | 722           | 5.3        | 563           | 4.7        | 1,285         |
| Tamil Nadu                | 4.5                        | 1,874         | 5.6        | 1,357         | 5.0        | 3,231         |
| Telangana                 | 5.1                        | 1,179         | 6.8        | 899           | 5.9        | 2,078         |

Note

\* Including spouse irrespective of age.

### Key findings: grip strength, balance test, timed walk

- The mean grip strength of the dominant hand among elderly men and women age 60 and above in India is 23.9 kg and 15.6 kg, respectively. The mean grip strength among elderly men age 45 and above is the higher in Uttarakhand (28.2), Himachal Pradesh (27.7), Andaman & Nicobar (27.6), Assam (27.5), Haryana (27.4), and Jammu & Kashmir (27.2). The mean grip strength among elderly women is the highest in Andaman & Nicobar (19.2), Chandigarh (18.2), Uttarakhand (18), Arunachal Pradesh (17.9), and Haryana (17.6).
- Approximately 4% of older adults age 45 and above years failed to maintain the semi-tandem stance. Among older adults age 45 and above who performed the side-by-side balance test, 12% failed to maintain the side-by-side position for 10 seconds. Fifteen percent of them who performed semi-tandem failed to perform full-tandem.
- Elderly age 60 and above in India take an average of 6 seconds to complete a 4-metre walk. The mean time taken by elderly age 60 and above to walk 4 metres is the highest in Delhi (7.2 seconds) and Kerala (7.0 seconds).

## 9.8 AGE PATTERN IN BIOLOGICAL MARKERS

Advancing age is considered a levelling process: those in the upper socioeconomic strata postpone functional limitations into the later years of life, whereas among those in the lower socioeconomic groups, adverse health conditions develop throughout the middle and early old age before levelling out in older age, a stage in which some combinations of social and biological factors reduce the socioeconomic differences in health (Arokiasamy et al., 2016b). Therefore, the age-gradient of various measured biological markers is an important indicator for assessing the effect of age on the outcome of chronic conditions.

Age-associated changes in the biological markers of health in India are shown in Figure 9.14. The prevalence rates of high blood pressure, low vision, and underweight are based on direct health examinations; all three rates consistently increase with advancing age, indicating age-associated decline in the health of the elderly.

**Figure 9.14 Biological markers of health: prevalence (%) rates of high blood pressure, low vision, underweight, and obesity among older adults by age, India, LASI Wave 1, 2017-18**

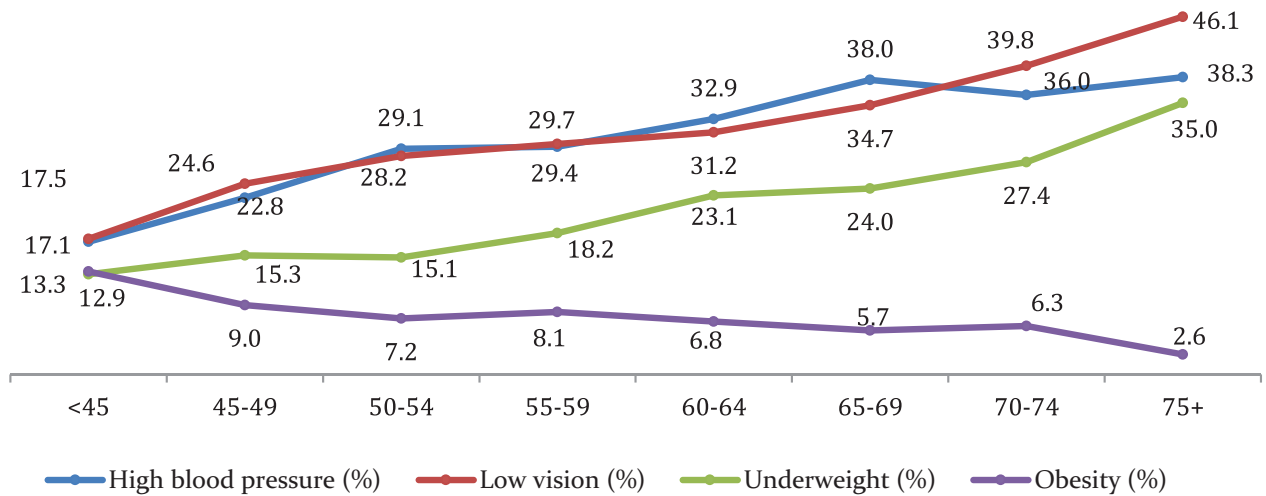


Figure 9.15 shows the mean grip strength of dominant and non-dominant hands by age. Mean grip strength declines steadily with advancing age. The mean grip strength of the dominant hand decreases from 32 kg and 20.5 kg in older adult men and women age 45-49, respectively, to 20 kg and 12.9 kg in elderly men and women age 75 and above, respectively.

**Figure 9.15 Mean grip strength (kg) among older adults by age and sex, India, LASI Wave 1, 2017-18**

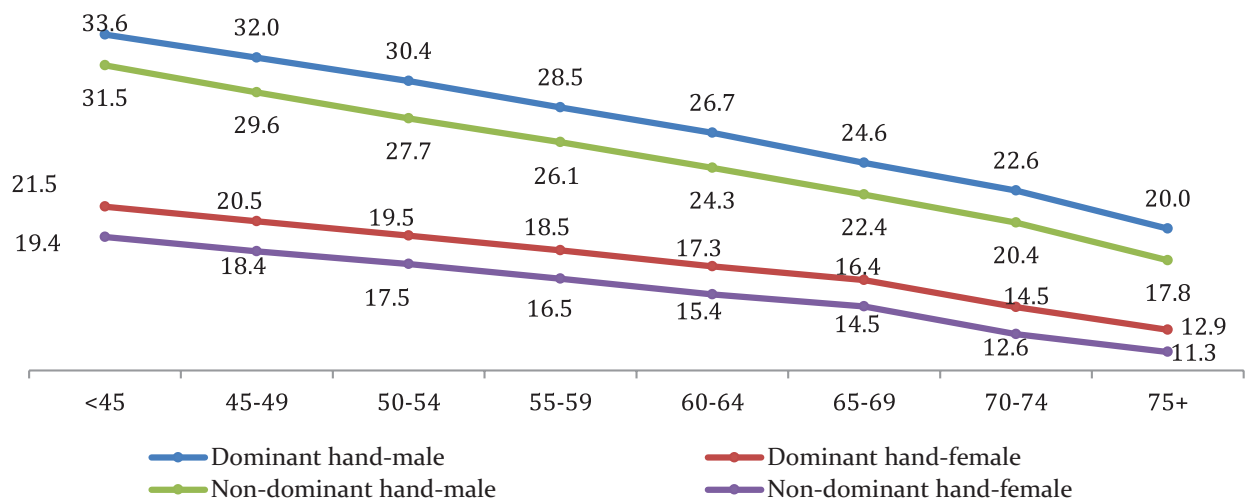
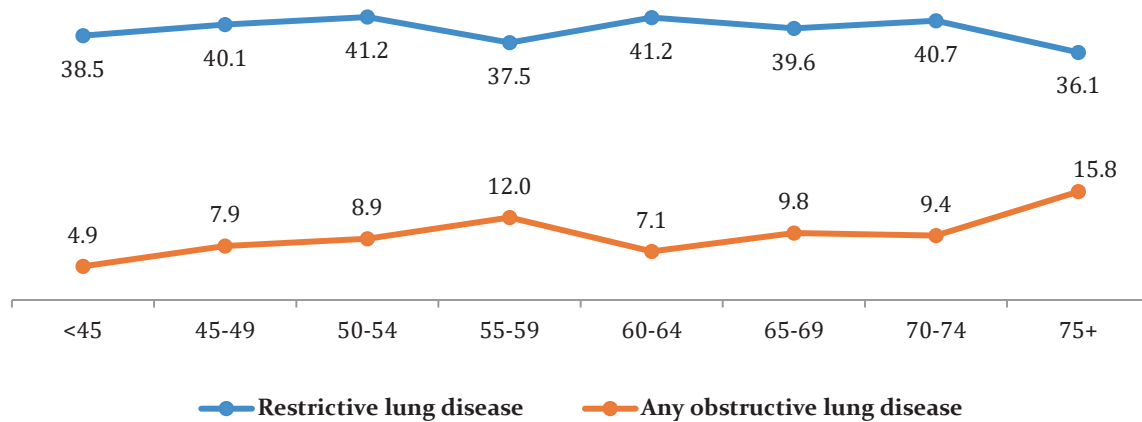


Figure 9.16 shows age-wise consistent high prevalence of the restrictive lung diseases (around 40%) along with minor variations across age groups, whereas the prevalence of any obstructive lung disease increases with advancing age particularly and elderly age 75 and above (16%).

**Figure 9.16 Prevalence (%) of restrictive lung disease and any obstructive lung disease among older adults by age, India, LASI Wave 1, 2017-18**



#### Key findings: age pattern in biological markers

- The prevalence of chronic health conditions (high blood pressure, low vision, and being underweight) steadily increases with advancing age, whereas the prevalence of obesity and the mean grip strength of the dominant hand decline with age.
- The prevalence of obstructive lung conditions increases with age, whereas the prevalence of restrictive lung conditions declines with age.
- Overall, biological markers provide strong evidence of the age-associated decline in the health of the elderly.

## **9.9 HEALTH MARKERS BASED ON DRIED BLOOD SPOTS (DBS)**

In the LASI, DBS was also collected to test the range of molecular markers. Signed/oral consent was obtained before proceeding with DBS collection. The consent form was clearly read and additional consent was sought for the long-term storage (20 years) of DBS cards. Indian Council of Medical Research- National AIDS Research Institute (ICMR-NARI) is a national collaborator involved in the testing and storage of DBS samples for the LASI. The testing of haemoglobin, glycosylated haemoglobin, high sensitivity C-reactive protein, and antibodies for cytomegalovirus is proposed in the LASI.

**[DBS BASED RESULTS ARE NOT INCLUDED IN THIS REPORT AS TESTS ARE IN PROGRESS].**

## 10. MENTAL HEALTH: COGNITION AND DEPRESSION

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Mental health is an integral part of health and well-being of older adults (WHO, 2013). The process of ageing not only affects physical health and functional abilities but also leads to deterioration in mental health functioning abilities. Along with physical decline, decline in cognitive functioning is a hallmark of ageing and predictor of mortality. Faster decline in cognitive functioning, in turn, is a contributing factor to functional impairment and disability. Decline in cognitive function is likely to impact one's ability to work, decision making, and social interactions (Ofstedal et al., 2005).

Higher cognitive ability protects individuals from future risks of cognitive impairment and dementia. Currently, dementia is one of the greatest global public health challenges and the future burden is expected to steadily rise as the share of older population is growing rapidly (Prince et al., 2013). In India, by 2050, the number of elderly with dementia is projected to be 14.3 million, compared to 5.29 million in 2020 (Shaji et al., 2010). Factors such as lower cognitive ability and depression early in life increase the risk of cognitive impairment and dementia in older age (Byers and Yaffe, 2011; Katon et al., 2015; Rantalainen et al., 2018). Educational attainment is a predictor of cognitive ability; however, the level of educational attainment is quite low in India. Additionally, the sex differences in educational attainment are higher in India (Onur and Velamuri, 2016). Understanding the cognitive ability of older adults will be especially beneficial in the context of population ageing in India.

Studies suggest that over 20% of elderly age 60 and above suffer from a mental or neurological disorder (excluding headaches) and 7% of all disabilities among elderly persons over 60 are attributed to mental and neurological disorders, the most common being dementia and depression, which affect approximately 5% and 7% of the world's older population, respectively (WHO, 2017b). Depression is one of the leading causes of disability, dementia, and mortality. Globally, over the 28-year period of 1990-2017, depressive disorders have emerged as one of the top four leading causes of Years Lived with Disability (YLDs) (James et al., 2018). The National Mental Health Survey estimated that 5.3% of India's population age 18 and older have depressive disorders (Gururaj et al., 2016). The prevalence of depression increases with age, and is positively linked with the rising prevalence of chronic morbidity conditions (Gururaj et al., 2016; Arokiasamy et al., 2015). However, previous studies conducted in India reported inconsistent findings, leaving several challenges in understanding the prevalence and risk factors of depression (Pilania et al., 2019).

The prevalence of self-reported diagnosed neurological and psychiatric problems in India are presented in chapter 7; whereas this chapter focuses on the measured components of mental health, such as cognition and depression in older adults. In the LASI, cognitive ability is measured on six dimensions: memory, orientation, retrieval fluency (verbal fluency), arithmetic functions, executive function, and object naming. Depression is assessed using internationally validated scales. Results on cognitive ability and measured prevalence of depression are presented in this chapter.

### 10.1 MEASURED COGNITION

In the LASI, in addition to self-reported diagnosed psychiatric problems, information was also collected on measured cognition in various domains - including memory, orientation, retrieval fluency (verbal fluency), arithmetic, executive functioning and object naming. The cognitive measures in the LASI were derived from the cognition module of the Health and Retirement Study (HRS). A detailed description of the different cognitive domains measured in the LASI is presented in the following table:

**Table A Description of domain-wise cognitive measures**

| Domain                         | Measure                   | Measurement                                                                                                                                                                                                                                                                                                       | Range |
|--------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Memory</b>                  | Immediate word recall     | Interviewer read out a list of 10 words and respondents were asked to repeat the words.                                                                                                                                                                                                                           | 0-10  |
|                                | Delayed word recall       | Respondents were asked to recall the same words read out for immediate recall after some time.                                                                                                                                                                                                                    | 0-10  |
|                                | Total word recall         | Sum of immediate and delayed word recall                                                                                                                                                                                                                                                                          | 0-20  |
| <b>Orientation</b>             | Time                      | Respondents were asked to state today's date, month and year and day of the week. For each question, the score was 0 or 1. Correct responses received 1 point, incorrect responses received 0. The total score for time was 0-4.                                                                                  | 0-4   |
|                                | Place                     | Orientation towards place was captured based on place of interview, name of the village, street number/colony name/ landmark/neighbourhood and name of the district. Each correct response scored 1 point. The total score ranged from 0-4.                                                                       | 0-4   |
| <b>Retrieval fluency</b>       | Verbal fluency*           | Participants were asked to mention as many names of animals/birds as possible in one minute.                                                                                                                                                                                                                      | 0-61  |
| <b>Arithmetic function</b>     | Backward counting         | Respondents were asked to count backward as quickly as possible from the number 20. The respondents were asked to stop after correctly counting backward from 20 to 11 or from 19 to 10. Correct counting received 2 points; counts with a mistake received 1 point. Those who could not count received 0 points. | 0-2   |
|                                | Serial 7                  | Respondents were asked to subtract seven from 100 in the first step and asked to continue subtracting seven from the previous number in each subsequent step for five times. Each correct response received 1 point.                                                                                              | 0-5   |
|                                | Computation               | This test involved the mathematical operation of division. Respondents were asked to compute the net sale price of a product after considering a discount sale of half of the original price.                                                                                                                     | 0-2   |
| <b>Executive function: 0-4</b> | Executive (paper folding) | This is a three-stage command task. The respondents were instructed to take a piece of paper from the interviewer, turn it over, fold it in half, and give it back to the interviewer. Three points were given if each task was completed successfully.                                                           | 0-3   |
|                                | Pentagon drawing          | Visio-construction is the ability to coordinate fine motor skills with visio-spatial abilities, usually by reproducing geometric figures. Respondents were asked to copy two overlapping pentagons and scored 1 point for a correct drawing.                                                                      | 0-1   |
| <b>Object naming: 0-2</b>      |                           | The interviewer points to a specific object and asks the respondent to name it. Two objects were pointed out and 1 point was given for each correct response.                                                                                                                                                     | 0-2   |
| <b>Cognition</b>               | Composite cognitive index | Combined score of memory (total word recall), orientation, arithmetic function, executive function, and object naming.                                                                                                                                                                                            | 0-43  |

\*The verbal fluency score is not included in the composite cognitive index.

In the LASI, at the end of each section, information was collected regarding whether a participant received assistance. Respondents who received assistance while answering questions in the cognition section were excluded from the analyses. For the cognition component, we present the mean score and the percentage of study participants in the lowest 10<sup>th</sup> percentile by background characteristics and states/UTs. The lowest 10th percentile is used as a proxy measure of poor cognitive functioning (Pandav et al., 2002).



### 10.1.1 Memory: word recall

Memory loss is a common problem and is often a presenting symptom in the elderly. Short-term memory is one of the most clinically relevant, and important measure of cognitive function. Short-term retention requires individuals to store and process information so that they can move on to a second task and then remember the previous information after completing the second task. Short-term memory may be tested by having the respondent learn ten unrelated objects or concepts and then asking the respondent to recall the information 15 to 20 minutes after performing a second, unrelated mental task. In the LASI, short-term memory was tested by immediate word recall and retention is tested by delayed word recall. The memory score (total word recall) was the sum of the immediate and delayed word recall scores.

Table 10.1 presents the mean score for total word recall and the percentage of older adults in the lowest 10<sup>th</sup> percentile of the mean score background characteristics. The mean total word recall score among older adults age 45 and above is 9.0. The mean score is lower for the elderly age 60 and above (8.1) than for older adults age 45-59 (9.8). Overall, 11% of older adults age 45 and above in India are in the lowest 10<sup>th</sup> percentile for the memory score. Sixteen percent of the elderly age 60 and above are in the lowest 10<sup>th</sup> percentile compared to 7% of older adults age 45-59. Among the elderly age 60 and above, 18% of women and 18% of those residing in rural areas are in the lowest 10<sup>th</sup> percentile of memory score compared with 13% of men and 10% of those residing in urban areas. The proportion of older adults in both age groups in the lowest 10<sup>th</sup> percentile of memory score is higher among those living alone or living with others only, those with no schooling, and those in the poorest MPCE quintile. The percentage of older adults age 45 and above in the lowest 10<sup>th</sup> percentile of the memory score decreases with education and MPCE quintile; this variation is more pronounced among the elderly age 60 and above.

The mean score for total word recall decreases with advancing age (Figure 10.1). The mean score for total word recall is slightly higher for older adult men than older adult women across all age groups. The sex gap widens after age 70.

**Figure 10.1 Mean total word recall score of older adults by sex and age, India, LASI Wave 1, 2017-18**

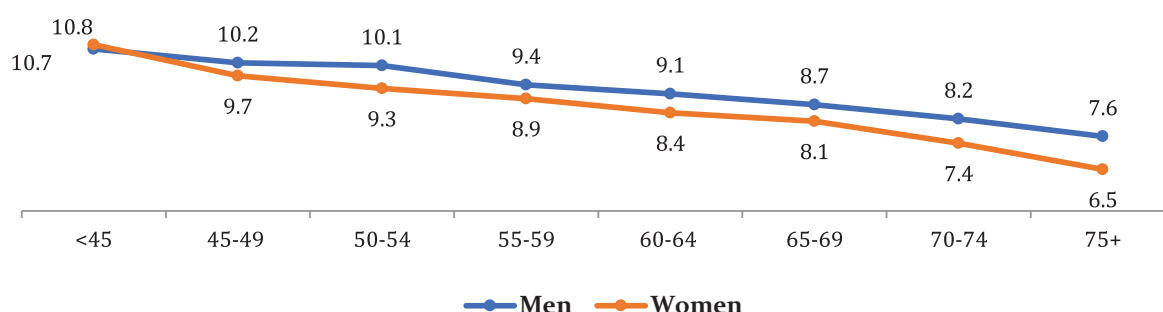


Table 10.2 shows the differences in total word recall and the share of older adults in the lowest 10<sup>th</sup> percentile of memory score by states/UTs. The mean total word recall among older adults age 45 and above ranges from 12.2 in Puducherry to 7.6 in Dadra & Nagar Haveli; whereas, among the elderly age 60 and above, the highest mean score is recorded in Chandigarh (11.3) followed by Puducherry (11.0). More than a quarter of the elderly age 60 and above are in the lowest 10<sup>th</sup> percentile for memory score in the states/UTs of Dadra & Nagar Haveli (38%), Gujarat (28%), and Odisha (28%), and around a quarter in Jharkhand (25%), and Daman & Diu (24%).

**Table 10.1 Mean score for total word recall and percentage of older adults in lowest 10<sup>th</sup> percentile of score by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*                     |                                                                  |               | Age ≥ 60                       |                                                                  |               | Total                          |                                                                  |               |
|------------------------------------------|--------------------------------|------------------------------------------------------------------|---------------|--------------------------------|------------------------------------------------------------------|---------------|--------------------------------|------------------------------------------------------------------|---------------|
|                                          | Total word recall <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Total word recall <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Total word recall <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>Place of residence</b>                |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Rural                                    | 9.4                            | 7.5                                                              | 23,028        | 7.8                            | 18.1                                                             | 17,662        | 8.6                            | 12.4                                                             | 40,690        |
| Urban                                    | 10.6                           | 4.7                                                              | 13,493        | 8.9                            | 10.4                                                             | 9,285         | 9.9                            | 7.0                                                              | 22,778        |
| <b>Sex</b>                               |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Male                                     | 9.9                            | 6.2                                                              | 13,840        | 8.5                            | 13.2                                                             | 12,963        | 9.2                            | 9.7                                                              | 26,803        |
| Female                                   | 9.7                            | 6.7                                                              | 22,681        | 7.7                            | 18.3                                                             | 13,984        | 8.9                            | 11.4                                                             | 36,665        |
| <b>Marital status</b>                    |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Currently married                        | 9.9                            | 5.8                                                              | 31,883        | 8.5                            | 12.6                                                             | 17,382        | 9.4                            | 8.3                                                              | 49,265        |
| Widowed                                  | 9.0                            | 10.0                                                             | 3,432         | 7.4                            | 21.7                                                             | 8,901         | 7.8                            | 18.8                                                             | 12,333        |
| Divorced/Separated/Deserted/<br>Others   | 8.7                            | 18.0                                                             | 1,206         | 7.8                            | 18.6                                                             | 664           | 8.4                            | 18.2                                                             | 1,870         |
| <b>Living arrangement</b>                |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Living alone                             | 9.3                            | 10.0                                                             | 621           | 7.6                            | 22.6                                                             | 1,359         | 8.0                            | 19.6                                                             | 1,980         |
| Living with spouse and/or others         | 9.7                            | 6.3                                                              | 3,970         | 8.3                            | 13.6                                                             | 5,307         | 8.9                            | 10.6                                                             | 9,277         |
| Living with spouse and children          | 9.9                            | 5.7                                                              | 27,316        | 8.6                            | 11.9                                                             | 11,872        | 9.5                            | 7.7                                                              | 39,188        |
| Living with children and others          | 9.2                            | 8.8                                                              | 3,623         | 7.4                            | 20.9                                                             | 7,057         | 7.9                            | 17.3                                                             | 10,680        |
| Living with others only                  | 8.2                            | 20.7                                                             | 991           | 7.3                            | 23.8                                                             | 1,352         | 7.6                            | 22.5                                                             | 2,343         |
| <b>Religion</b>                          |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Hindu                                    | 9.9                            | 6.1                                                              | 26,569        | 8.1                            | 15.8                                                             | 19,566        | 9.1                            | 10.5                                                             | 46,135        |
| Muslim                                   | 9.7                            | 5.4                                                              | 4,447         | 8.0                            | 15.2                                                             | 3,268         | 9.0                            | 9.5                                                              | 7,715         |
| Christian                                | 7.9                            | 21.9                                                             | 3,807         | 7.8                            | 18.3                                                             | 2,743         | 7.8                            | 20.4                                                             | 6,550         |
| Others                                   | 9.7                            | 5.8                                                              | 1,698         | 7.8                            | 17.3                                                             | 1,370         | 8.8                            | 11.2                                                             | 3,068         |
| <b>Caste/tribe</b>                       |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Scheduled tribe                          | 8.7                            | 13.1                                                             | 6,697         | 7.0                            | 27.3                                                             | 4,501         | 8.0                            | 19.1                                                             | 11,198        |
| Scheduled caste                          | 9.2                            | 6.9                                                              | 6,158         | 7.7                            | 18.4                                                             | 4,381         | 8.6                            | 11.9                                                             | 10,539        |
| Other backward class                     | 10.1                           | 6.0                                                              | 13,478        | 8.2                            | 14.8                                                             | 9,980         | 9.3                            | 9.9                                                              | 23,458        |
| None of the above                        | 10.1                           | 5.0                                                              | 10,188        | 8.4                            | 12.6                                                             | 8,085         | 9.3                            | 8.5                                                              | 18,273        |
| <b>Education</b>                         |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| No schooling                             | 8.6                            | 10.3                                                             | 14,363        | 7.3                            | 21.1                                                             | 14,142        | 7.9                            | 15.8                                                             | 28,505        |
| Less than 5 years complete               | 9.3                            | 6.5                                                              | 3,867         | 7.8                            | 16.4                                                             | 3,326         | 8.6                            | 11.3                                                             | 7,193         |
| 5-9 years complete                       | 10.2                           | 3.4                                                              | 9,877         | 8.9                            | 8.6                                                              | 5,276         | 9.7                            | 5.4                                                              | 15,153        |
| 10 or more years complete                | 11.8                           | 2.6                                                              | 8,414         | 10.4                           | 4.0                                                              | 4,203         | 11.3                           | 3.1                                                              | 12,617        |
| <b>Work status</b>                       |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Currently working                        | 9.9                            | 6.4                                                              | 21,395        | 8.4                            | 13.1                                                             | 8,242         | 9.4                            | 8.4                                                              | 29,637        |
| Worked in past but currently not working | 9.3                            | 8.6                                                              | 4,021         | 8.0                            | 17.4                                                             | 11,309        | 8.3                            | 15.1                                                             | 15,330        |
| Never worked                             | 9.8                            | 5.9                                                              | 11,105        | 8.0                            | 16.8                                                             | 7,396         | 9.0                            | 10.5                                                             | 18,501        |
| <b>MPCE quintile</b>                     |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Poorest                                  | 9.3                            | 8.0                                                              | 6,794         | 7.7                            | 19.0                                                             | 5,448         | 8.6                            | 13.2                                                             | 12,242        |
| Poorer                                   | 9.5                            | 6.6                                                              | 7,148         | 7.8                            | 17.3                                                             | 5,526         | 8.7                            | 11.5                                                             | 12,674        |
| Middle                                   | 9.6                            | 6.9                                                              | 7,264         | 8.2                            | 14.9                                                             | 5,511         | 9.0                            | 10.5                                                             | 12,775        |
| Richer                                   | 9.9                            | 6.9                                                              | 7,717         | 8.3                            | 13.9                                                             | 5,305         | 9.2                            | 10.0                                                             | 13,022        |
| Richest                                  | 10.7                           | 4.0                                                              | 7,598         | 8.7                            | 13.5                                                             | 5,157         | 9.9                            | 7.9                                                              | 12,755        |
| <b>Total</b>                             | <b>9.8</b>                     | <b>6.5</b>                                                       | <b>36,521</b> | <b>8.1</b>                     | <b>15.9</b>                                                      | <b>26,947</b> | <b>9.0</b>                     | <b>10.7</b>                                                      | <b>63,468</b> |

Notes

\*Including spouse irrespective of age.

<sup>1</sup> Total word recall (0-20) refers to combined scoring for immediate word recall (0-10) and delayed word recall (0-10).

**Table 10.2 Mean score for total word recall and percentage of older adults in lowest 10<sup>th</sup> percentile of score, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*                     |                                                                  |               | Age ≥ 60                       |                                                                  |               | Total                          |                                                                  |               |
|---------------------------|--------------------------------|------------------------------------------------------------------|---------------|--------------------------------|------------------------------------------------------------------|---------------|--------------------------------|------------------------------------------------------------------|---------------|
|                           | Total word recall <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Total word recall <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Total word recall <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>India</b>              | <b>9.8</b>                     | <b>6.5</b>                                                       | <b>36,521</b> | <b>8.1</b>                     | <b>15.9</b>                                                      | <b>26,947</b> | <b>9.0</b>                     | <b>10.7</b>                                                      | <b>63,468</b> |
| <b>North</b>              |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Chandigarh                | 12.3                           | 1.2                                                              | 587           | 11.3                           | 1.7                                                              | 351           | 11.9                           | 1.4                                                              | 938           |
| Delhi                     | 9.7                            | 3.5                                                              | 644           | 8.3                            | 14.0                                                             | 355           | 9.2                            | 7.2                                                              | 999           |
| Haryana                   | 9.5                            | 4.1                                                              | 935           | 8.0                            | 13.1                                                             | 742           | 8.7                            | 8.4                                                              | 1,677         |
| Himachal Pradesh          | 9.4                            | 8.2                                                              | 675           | 7.5                            | 20.3                                                             | 521           | 8.5                            | 13.9                                                             | 1,196         |
| Jammu & Kashmir           | 10.0                           | 2.4                                                              | 814           | 8.1                            | 12.3                                                             | 660           | 9.1                            | 7.2                                                              | 1,474         |
| Punjab                    | 10.0                           | 2.0                                                              | 1,048         | 8.4                            | 9.2                                                              | 912           | 9.2                            | 5.4                                                              | 1,960         |
| Rajasthan                 | 9.0                            | 5.8                                                              | 964           | 7.3                            | 19.4                                                             | 858           | 8.2                            | 12.5                                                             | 1,822         |
| Uttarakhand               | 9.4                            | 6.9                                                              | 633           | 7.6                            | 17.3                                                             | 562           | 8.5                            | 12.0                                                             | 1,195         |
| <b>Central</b>            |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Chhattisgarh              | 9.2                            | 8.4                                                              | 1,174         | 8.1                            | 16.0                                                             | 680           | 8.8                            | 11.2                                                             | 1,854         |
| Madhya Pradesh            | 10.8                           | 3.3                                                              | 1,328         | 9.7                            | 8.5                                                              | 1,064         | 10.3                           | 5.8                                                              | 2,392         |
| Uttar Pradesh             | 8.9                            | 7.5                                                              | 1,886         | 7.8                            | 16.1                                                             | 1,703         | 8.4                            | 11.7                                                             | 3,589         |
| <b>East</b>               |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Bihar                     | 10.0                           | 4.5                                                              | 1,596         | 8.6                            | 12.8                                                             | 1,637         | 9.3                            | 8.9                                                              | 3,233         |
| Jharkhand                 | 8.4                            | 12.7                                                             | 1,027         | 6.8                            | 24.8                                                             | 915           | 7.7                            | 18.5                                                             | 1,942         |
| Odisha                    | 8.9                            | 11.0                                                             | 1,555         | 6.9                            | 27.7                                                             | 1,111         | 8.1                            | 18.2                                                             | 2,666         |
| West Bengal               | 9.7                            | 6.0                                                              | 2,264         | 7.7                            | 17.2                                                             | 1,414         | 8.9                            | 10.4                                                             | 3,678         |
| <b>Northeast</b>          |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Arunachal Pradesh         | 10.4                           | 5.7                                                              | 856           | 8.1                            | 15.1                                                             | 275           | 9.9                            | 7.7                                                              | 1,131         |
| Assam                     | 10.2                           | 6.4                                                              | 1,510         | 8.4                            | 16.7                                                             | 762           | 9.6                            | 9.9                                                              | 2,272         |
| Manipur                   | 10.3                           | 3.1                                                              | 669           | 9.0                            | 10.7                                                             | 502           | 9.7                            | 6.5                                                              | 1,171         |
| Meghalaya                 | 10.5                           | 3.6                                                              | 524           | 9.6                            | 5.9                                                              | 356           | 10.1                           | 4.5                                                              | 880           |
| Mizoram                   | 9.6                            | 3.2                                                              | 690           | 7.6                            | 13.7                                                             | 462           | 8.8                            | 7.7                                                              | 1,152         |
| Nagaland                  | 8.4                            | 15.7                                                             | 686           | 7.3                            | 22.7                                                             | 571           | 7.9                            | 19.0                                                             | 1,257         |
| Tripura                   | 8.7                            | 8.8                                                              | 708           | 6.9                            | 19.6                                                             | 449           | 8.0                            | 13.1                                                             | 1,157         |
| <b>West</b>               |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Dadra & Nagar Haveli      | 8.5                            | 19.8                                                             | 573           | 6.1                            | 37.8                                                             | 392           | 7.6                            | 26.7                                                             | 965           |
| Daman & Diu               | 10.1                           | 10.5                                                             | 511           | 7.7                            | 24.4                                                             | 352           | 9.0                            | 16.7                                                             | 863           |
| Goa                       | 9.6                            | 4.4                                                              | 735           | 7.6                            | 21.5                                                             | 556           | 8.7                            | 11.9                                                             | 1,291         |
| Gujarat                   | 9.1                            | 12.1                                                             | 1,214         | 7.2                            | 27.5                                                             | 826           | 8.3                            | 18.7                                                             | 2,040         |
| Maharashtra               | 9.6                            | 6.1                                                              | 2,015         | 7.8                            | 16.5                                                             | 1,571         | 8.8                            | 11.0                                                             | 3,586         |
| <b>South</b>              |                                |                                                                  |               |                                |                                                                  |               |                                |                                                                  |               |
| Andaman & Nicobar Islands | 9.6                            | 6.9                                                              | 669           | 8.2                            | 17.8                                                             | 452           | 9.0                            | 11.2                                                             | 1,121         |
| Andhra Pradesh            | 10.0                           | 4.3                                                              | 1,455         | 8.7                            | 9.5                                                              | 999           | 9.5                            | 6.4                                                              | 2,454         |
| Karnataka                 | 10.4                           | 8.4                                                              | 1,175         | 8.3                            | 15.0                                                             | 806           | 9.6                            | 10.9                                                             | 1,981         |
| Kerala                    | 10.4                           | 4.6                                                              | 1,188         | 7.8                            | 16.7                                                             | 1,079         | 9.1                            | 10.8                                                             | 2,267         |
| Lakshadweep               | 9.8                            | 6.6                                                              | 588           | 8.1                            | 19.0                                                             | 458           | 9.0                            | 12.5                                                             | 1,046         |
| Puducherry                | 13.2                           | 1.2                                                              | 741           | 11.0                           | 4.9                                                              | 584           | 12.2                           | 2.9                                                              | 1,325         |
| Tamil Nadu                | 11.8                           | 2.0                                                              | 1,624         | 9.9                            | 7.5                                                              | 1,079         | 11.0                           | 4.3                                                              | 2,703         |
| Telangana                 | 10.1                           | 4.6                                                              | 1,260         | 8.3                            | 14.2                                                             | 931           | 9.3                            | 8.9                                                              | 2,191         |

Notes

\* Including spouse irrespective of age.

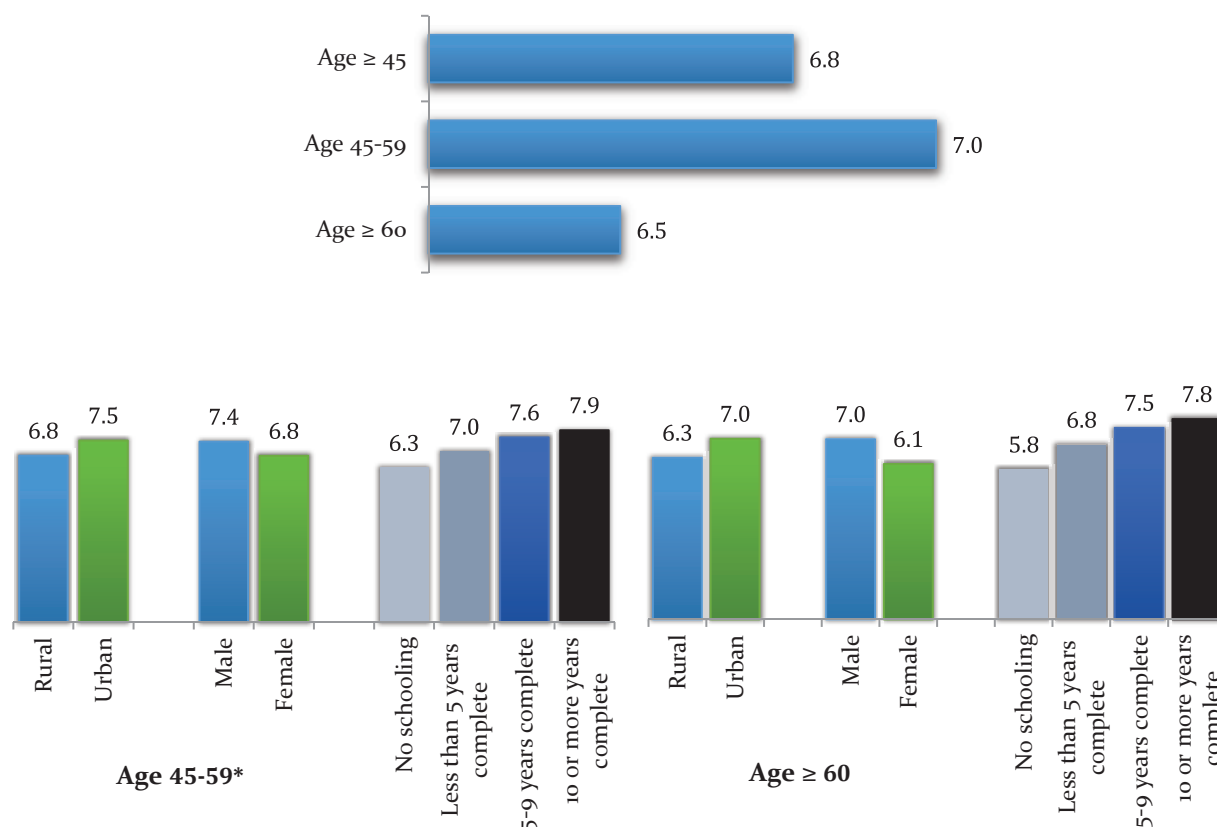
<sup>1</sup> Total word recall (0-20) refers to combined scoring for immediate word recall (0-10) and delayed word recall (0-10).

### 10.1.2 Orientation: time and place

Orientation refers to a person's understanding of self and the relationship between self and environment in the past and present. Place, time, and person are the common categories of orientation. LASI assessed respondents' orientation to time and place. A detailed description of the concepts and measurements are provided earlier in this chapter.

Figure 10.2 shows the mean orientation score by age, sex, place of residence, and education. Overall, among older adults age 45 and above, the mean orientation score is 6.8 out of a maximum score of 8; the mean score is higher among older adults age 45-59 (7.0) than among the elderly age 60 and above (6.5). Urban elderly scored higher than rural elderly, and elderly men scored higher than elderly women. By education, the mean orientation score increases from 5.8 among the elderly with no education to 7.8 among the elderly with 10 or more years of schooling.

**Figure 10.2 Mean orientation score among older adults in India by age, sex, place of residence and education, India, LASI Wave 1, 2017-18**



Note

\*Including spouse irrespective of age.

### 10.1.3 Verbal fluency

Verbal fluency is a cognitive function that facilitates information retrieval from memory. Successful retrieval requires executive control over cognitive processes, such as selective attention, selective inhibition, mental set shifting, internal response generation, and self-monitoring (Patterson, 2011). Verbal fluency is also known as retrieval fluency and is based on speed and ease of word production.

Table 10.3 presents the mean score and percentage of older adults in the lowest 10<sup>th</sup> percentile of verbal fluency score by background characteristics. The mean verbal fluency score for older adults age 45 and above in India is 11.6. The mean verbal fluency score among older adults age 45-59 is 12.1 which is slightly lower among the elderly age 60 and above (11.0). The proportion of older adults age 45-59 in the lowest 10<sup>th</sup> percentile of verbal fluency score is 7%, compared to 12% among the elderly age 60 and above. Among the elderly age 60 and above, the mean verbal fluency score is higher for men, those residing in urban areas, the currently married, those living with a spouse and children, and those currently working, with higher score for higher levels of education and MPCE quintile. The proportion of elderly age 60 and above in the lowest 10<sup>th</sup> percentile of verbal fluency score is higher among women (16%), those in rural areas (13%), the widowed (17%), those living alone or living with others or living with children and others (17% each) and those who never worked (15%). The decrease in the percentage of elderly age 60 and above in the lowest 10<sup>th</sup> percentile is more pronounced by education, ranging from 17% among older adults with no schooling to 5% among the elderly with 10 or more years of schooling.

The cross-state variations in mean score for verbal fluency are presented in Table 10.4. The highest verbal fluency mean score (15.3) is observed for older adults age 45 and above in Kerala and the lowest for Nagaland (7.9). More than a quarter of the elderly age 60 and above are found in the lowest 10<sup>th</sup> percentile for verbal fluency score in most of the northeast Indian states, such as Nagaland (29%), Meghalaya (28%), and Arunachal Pradesh (27%).

**Table 10.3 Mean score of verbal fluency and percentage of older adults in lowest 10<sup>th</sup> percentile of score by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*          |                                                                  |               | Age ≥ 60            |                                                                  |               | Total               |                                                                  |               |
|------------------------------------------|---------------------|------------------------------------------------------------------|---------------|---------------------|------------------------------------------------------------------|---------------|---------------------|------------------------------------------------------------------|---------------|
|                                          | Mean verbal fluency | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean verbal fluency | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean verbal fluency | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>Place of residence</b>                |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Rural                                    | 11.8                | 7.5                                                              | 24,158        | 10.7                | 13.3                                                             | 19,114        | 11.3                | 10.2                                                             | 43,272        |
| Urban                                    | 12.7                | 6.5                                                              | 14,069        | 11.7                | 10.1                                                             | 9,955         | 12.3                | 8.0                                                              | 24,024        |
| <b>Sex</b>                               |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Male                                     | 12.8                | 5.8                                                              | 14,486        | 11.8                | 8.7                                                              | 13,959        | 12.3                | 7.3                                                              | 28,445        |
| Female                                   | 11.7                | 8.0                                                              | 23,741        | 10.3                | 15.6                                                             | 15,110        | 11.1                | 11.1                                                             | 38,851        |
| <b>Marital status</b>                    |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Currently married                        | 12.2                | 7.0                                                              | 33,287        | 11.5                | 9.7                                                              | 18,548        | 12.0                | 8.0                                                              | 51,835        |
| Widowed                                  | 11.2                | 8.9                                                              | 3,635         | 10.1                | 17.0                                                             | 9,765         | 10.4                | 15.1                                                             | 13,400        |
| Divorced/Separated/Deserted/ Others      | 12.0                | 5.7                                                              | 1,305         | 10.7                | 13.0                                                             | 756           | 11.5                | 8.3                                                              | 2,061         |
| <b>Living arrangement</b>                |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Living alone                             | 11.3                | 9.7                                                              | 654           | 10.1                | 16.9                                                             | 1,495         | 10.4                | 15.2                                                             | 2,149         |
| Living with spouse and/or others         | 11.9                | 7.6                                                              | 4,160         | 11.2                | 11.7                                                             | 5,722         | 11.5                | 10.0                                                             | 9,882         |
| Living with spouse and children          | 12.3                | 6.9                                                              | 28,508        | 11.7                | 8.6                                                              | 12,606        | 12.1                | 7.5                                                              | 41,114        |
| Living with children and others          | 11.2                | 8.5                                                              | 3,848         | 10.2                | 16.7                                                             | 7,724         | 10.5                | 14.3                                                             | 11,572        |
| Living with others only                  | 12.0                | 6.2                                                              | 1,057         | 10.0                | 17.1                                                             | 1,522         | 10.8                | 12.9                                                             | 2,579         |
| <b>Religion</b>                          |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Hindu                                    | 12.2                | 7.0                                                              | 27,972        | 11.1                | 11.9                                                             | 21,217        | 11.7                | 9.3                                                              | 49,189        |
| Muslim                                   | 11.7                | 7.6                                                              | 4,587         | 10.6                | 14.5                                                             | 3,448         | 11.2                | 10.6                                                             | 8,035         |
| Christian                                | 11.1                | 11.1                                                             | 3,913         | 10.4                | 18.8                                                             | 2,949         | 10.8                | 14.5                                                             | 6,862         |
| Others                                   | 12.2                | 4.9                                                              | 1,755         | 11.0                | 10.8                                                             | 1,455         | 11.6                | 7.7                                                              | 3,210         |
| <b>Caste/tribe</b>                       |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Scheduled tribe                          | 10.9                | 12.0                                                             | 6,930         | 9.8                 | 19.9                                                             | 4,802         | 10.4                | 15.4                                                             | 11,732        |
| Scheduled caste                          | 11.5                | 8.9                                                              | 6,481         | 10.6                | 12.8                                                             | 4,746         | 11.1                | 10.7                                                             | 11,227        |
| Other backward class                     | 12.2                | 6.6                                                              | 14,267        | 10.9                | 12.6                                                             | 10,929        | 11.6                | 9.3                                                              | 25,196        |
| None of the above                        | 12.8                | 5.1                                                              | 10,549        | 11.7                | 9.5                                                              | 8,592         | 12.3                | 7.2                                                              | 19,141        |
| <b>Education</b>                         |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| No schooling                             | 10.6                | 11.2                                                             | 15,180        | 9.9                 | 16.8                                                             | 15,476        | 10.2                | 14.1                                                             | 30,656        |
| Less than 5 years complete               | 12.1                | 5.6                                                              | 4,006         | 11.6                | 7.5                                                              | 3,526         | 11.9                | 6.6                                                              | 7,532         |
| 5-9 years complete                       | 12.7                | 5.2                                                              | 10,295        | 12.2                | 7.0                                                              | 5,611         | 12.5                | 5.9                                                              | 15,906        |
| 10 or more years complete                | 14.5                | 2.1                                                              | 8,746         | 13.5                | 5.0                                                              | 4,456         | 14.1                | 3.1                                                              | 13,202        |
| <b>Work status</b>                       |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Currently working                        | 12.3                | 6.7                                                              | 22,332        | 11.5                | 9.2                                                              | 8,732         | 12.1                | 7.5                                                              | 31,064        |
| Worked in past but currently not working | 11.7                | 9.3                                                              | 4,238         | 11.0                | 13.1                                                             | 12,303        | 11.2                | 12.1                                                             | 16,541        |
| Never worked                             | 11.8                | 7.2                                                              | 11,657        | 10.3                | 15.0                                                             | 8,034         | 11.2                | 10.6                                                             | 19,691        |
| <b>MPCE quintile</b>                     |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Poorest                                  | 11.3                | 9.0                                                              | 7,131         | 10.3                | 15.8                                                             | 5,935         | 10.8                | 12.2                                                             | 13,066        |
| Poorer                                   | 11.9                | 7.8                                                              | 7,527         | 10.8                | 12.9                                                             | 5,978         | 11.4                | 10.2                                                             | 13,505        |
| Middle                                   | 12.1                | 7.7                                                              | 7,606         | 11.0                | 11.0                                                             | 5,940         | 11.6                | 9.2                                                              | 13,546        |
| Richer                                   | 12.4                | 6.0                                                              | 8,040         | 11.4                | 10.1                                                             | 5,740         | 12.0                | 7.8                                                              | 13,780        |
| Richest                                  | 12.9                | 5.3                                                              | 7,923         | 11.6                | 11.4                                                             | 5,476         | 12.4                | 7.8                                                              | 13,399        |
| <b>Total</b>                             | <b>12.1</b>         | <b>7.2</b>                                                       | <b>38,227</b> | <b>11.0</b>         | <b>12.3</b>                                                      | <b>29,069</b> | <b>11.6</b>         | <b>9.5</b>                                                       | <b>67,296</b> |

Note

\*Including spouse irrespective of age.

**Table 10.4 Mean score of verbal fluency and percentage of older adults in lowest 10<sup>th</sup> percentile of score, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*          |                                                                  |               | Age ≥ 60            |                                                                  |               | Total               |                                                                  |               |
|---------------------------|---------------------|------------------------------------------------------------------|---------------|---------------------|------------------------------------------------------------------|---------------|---------------------|------------------------------------------------------------------|---------------|
|                           | Mean verbal fluency | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean verbal fluency | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean verbal fluency | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>India</b>              | <b>12.1</b>         | <b>7.2</b>                                                       | <b>38,227</b> | <b>11.0</b>         | <b>12.3</b>                                                      | <b>29,069</b> | <b>11.6</b>         | <b>9.5</b>                                                       | <b>67,296</b> |
| <b>North</b>              |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Chandigarh                | 12.8                | 1.2                                                              | 600           | 11.9                | 5.5                                                              | 369           | 12.4                | 2.9                                                              | 969           |
| Delhi                     | 10.3                | 15.3                                                             | 707           | 9.5                 | 21.1                                                             | 421           | 10.0                | 17.5                                                             | 1,128         |
| Haryana                   | 11.6                | 6.5                                                              | 951           | 10.4                | 12.4                                                             | 774           | 11.0                | 9.3                                                              | 1,725         |
| Himachal Pradesh          | 12.3                | 5.7                                                              | 746           | 11.4                | 11.0                                                             | 595           | 11.9                | 8.2                                                              | 1,341         |
| Jammu & Kashmir           | 11.0                | 7.9                                                              | 825           | 9.8                 | 17.4                                                             | 680           | 10.4                | 12.6                                                             | 1,505         |
| Punjab                    | 12.1                | 3.3                                                              | 1,071         | 11.3                | 4.9                                                              | 950           | 11.7                | 4.1                                                              | 2,021         |
| Rajasthan                 | 13.8                | 3.9                                                              | 1,033         | 12.6                | 6.0                                                              | 961           | 13.2                | 4.9                                                              | 1,994         |
| Uttarakhand               | 13.1                | 2.1                                                              | 705           | 12.5                | 7.0                                                              | 631           | 12.8                | 4.5                                                              | 1,336         |
| <b>Central</b>            |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Chhattisgarh              | 11.3                | 8.7                                                              | 1,223         | 10.6                | 13.6                                                             | 733           | 11.0                | 10.6                                                             | 1,956         |
| Madhya Pradesh            | 12.5                | 7.7                                                              | 1,424         | 11.9                | 9.9                                                              | 1,166         | 12.2                | 8.8                                                              | 2,590         |
| Uttar Pradesh             | 10.9                | 12.5                                                             | 1,992         | 10.3                | 15.3                                                             | 1,794         | 10.6                | 13.9                                                             | 3,786         |
| <b>East</b>               |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Bihar                     | 11.4                | 6.7                                                              | 1,674         | 10.6                | 11.4                                                             | 1,733         | 11.0                | 9.2                                                              | 3,407         |
| Jharkhand                 | 10.8                | 9.4                                                              | 1,234         | 10.3                | 12.2                                                             | 1,102         | 10.5                | 10.8                                                             | 2,336         |
| Odisha                    | 12.1                | 6.9                                                              | 1,569         | 10.6                | 15.1                                                             | 1,145         | 11.5                | 10.5                                                             | 2,714         |
| West Bengal               | 13.0                | 2.1                                                              | 2,290         | 11.4                | 9.1                                                              | 1,461         | 12.4                | 4.9                                                              | 3,751         |
| <b>Northeast</b>          |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Arunachal Pradesh         | 10.5                | 17.7                                                             | 872           | 9.0                 | 26.8                                                             | 305           | 10.2                | 19.8                                                             | 1,177         |
| Assam                     | 13.3                | 4.3                                                              | 1,519         | 12.0                | 8.1                                                              | 783           | 12.8                | 5.6                                                              | 2,302         |
| Manipur                   | 11.6                | 10.2                                                             | 732           | 10.6                | 12.5                                                             | 562           | 11.1                | 11.3                                                             | 1,294         |
| Meghalaya                 | 10.1                | 17.1                                                             | 532           | 9.2                 | 28.3                                                             | 393           | 9.7                 | 21.8                                                             | 925           |
| Mizoram                   | 12.6                | 2.7                                                              | 693           | 12.7                | 2.4                                                              | 475           | 12.6                | 2.6                                                              | 1,168         |
| Nagaland                  | 8.2                 | 26.8                                                             | 695           | 7.7                 | 29.3                                                             | 584           | 7.9                 | 28.0                                                             | 1,279         |
| Tripura                   | 10.4                | 11.2                                                             | 715           | 9.1                 | 19.4                                                             | 455           | 9.9                 | 14.4                                                             | 1,170         |
| <b>West</b>               |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Dadra & Nagar Haveli      | 13.8                | 10.6                                                             | 588           | 11.3                | 21.0                                                             | 416           | 12.9                | 14.7                                                             | 1,004         |
| Daman & Diu               | 15.8                | 4.3                                                              | 524           | 14.1                | 7.2                                                              | 381           | 15.0                | 5.6                                                              | 905           |
| Goa                       | 12.4                | 6.1                                                              | 763           | 10.7                | 15.9                                                             | 598           | 11.6                | 10.5                                                             | 1,361         |
| Gujarat                   | 14.9                | 6.5                                                              | 1,255         | 13.7                | 8.1                                                              | 887           | 14.4                | 7.2                                                              | 2,142         |
| Maharashtra               | 11.7                | 8.0                                                              | 2,066         | 10.6                | 15.5                                                             | 1,667         | 11.1                | 11.6                                                             | 3,733         |
| <b>South</b>              |                     |                                                                  |               |                     |                                                                  |               |                     |                                                                  |               |
| Andaman & Nicobar Islands | 10.7                | 12.5                                                             | 686           | 9.5                 | 18.3                                                             | 475           | 10.2                | 14.8                                                             | 1,161         |
| Andhra Pradesh            | 11.0                | 6.8                                                              | 1,481         | 9.9                 | 14.1                                                             | 1,037         | 10.5                | 9.9                                                              | 2,518         |
| Karnataka                 | 12.2                | 6.8                                                              | 1,239         | 10.7                | 11.3                                                             | 881           | 11.6                | 8.5                                                              | 2,120         |
| Kerala                    | 16.5                | 3.0                                                              | 1,220         | 14.2                | 9.1                                                              | 1,141         | 15.3                | 6.1                                                              | 2,361         |
| Lakshadweep               | 12.7                | 15.5                                                             | 594           | 11.7                | 20.6                                                             | 473           | 12.2                | 18.0                                                             | 1,067         |
| Puducherry                | 14.9                | 1.3                                                              | 765           | 13.7                | 6.0                                                              | 609           | 14.3                | 3.5                                                              | 1,374         |
| Tamil Nadu                | 12.5                | 5.6                                                              | 1,893         | 11.0                | 12.9                                                             | 1,427         | 11.8                | 8.9                                                              | 3,320         |
| Telangana                 | 10.5                | 12.1                                                             | 1,351         | 9.3                 | 20.4                                                             | 1,005         | 9.9                 | 15.8                                                             | 2,356         |

Note

\*Including spouse irrespective of age.



### **10.1.4 Arithmetic function**

In the LASI, arithmetic function skills are assessed by number series, numeric ability (backward counting), serial sevens, and computation skills (multiplication and division). The combined score includes only three components of arithmetic function: numeric ability (backward counting), serial seven, and computation. The number series was excluded from the arithmetic function skills score owing to low response.

The mean score for arithmetic function and the percentage of older adults in the lowest percentile of arithmetic function by background characteristics are presented in Table 10.5. The overall mean score for India is 4.7, with a slight difference between older adults age 45-59 (5.1) and the elderly age 60 and above (4.2). Overall, 18% of older adults are found in the lowest 10<sup>th</sup> percentile of arithmetic functioning; the proportion increases to 24% for the elderly age 60 and above compared to 13% among older adults age 45-59. More than a quarter (28%) of the elderly age 60 and above in rural areas are found in the lowest 10<sup>th</sup> percentile of arithmetic function score, compared with 13% of the elderly in urban areas. Across age groups, women scored lower in arithmetic function. More than a third of elderly women age 60 and above (35%) are found in the lowest 10<sup>th</sup> percentile of arithmetic function score compared to men (11%), suggesting pronounced differences in arithmetic function score between men and women. Across age groups, older adults with 10 or more years of education scored much higher arithmetic score than older adults with no schooling. The percentage of the elderly age 60 and above in the lowest 10<sup>th</sup> percentile of arithmetic function score decreases with increasing education and MPCE quintile.

Variation in arithmetic function score across states is presented in Table 10.6. Older adults age 45 and above in Puducherry (6.9), Chandigarh (6.7), and Kerala (6.2) scored higher in arithmetic function. Among the elderly age 60 and above, the mean arithmetic function score ranges from 6.5 in Chandigarh and Puducherry to 1.6 in Arunachal Pradesh. More than a third of the elderly age 60 and above are observed in the lowest 10<sup>th</sup> percentile in the states/UTs of Arunachal Pradesh (62%), Dadra & Nagar Haveli (38%), Odisha (37%), Nagaland (37%), and Tripura (33%).

**Table 10.5 Mean score of arithmetic function and percentage of older adults in lowest 10<sup>th</sup> percentile of score by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Age 45-59*                            |                                                                  |               | Age ≥ 60                              |                                                                  |               | Total                                 |                                                                  |               |
|---------------------------------------------|---------------------------------------|------------------------------------------------------------------|---------------|---------------------------------------|------------------------------------------------------------------|---------------|---------------------------------------|------------------------------------------------------------------|---------------|
|                                             | Mean arithmetic function <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean arithmetic function <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean arithmetic function <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>Place of residence</b>                   |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Rural                                       | 4.6                                   | 16.0                                                             | 24,156        | 3.7                                   | 27.8                                                             | 19,110        | 4.2                                   | 21.6                                                             | 43,266        |
| Urban                                       | 6.1                                   | 7.8                                                              | 14,067        | 5.3                                   | 13.4                                                             | 9,955         | 5.8                                   | 10.1                                                             | 24,022        |
| <b>Sex</b>                                  |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Male                                        | 6.3                                   | 6.2                                                              | 14,485        | 5.5                                   | 10.8                                                             | 13,956        | 5.9                                   | 8.6                                                              | 28,441        |
| Female                                      | 4.4                                   | 17.4                                                             | 23,738        | 3.0                                   | 35.2                                                             | 15,109        | 3.8                                   | 24.7                                                             | 38,847        |
| <b>Marital status</b>                       |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Currently married                           | 5.2                                   | 12.6                                                             | 33,283        | 4.8                                   | 17.6                                                             | 18,546        | 5.0                                   | 14.5                                                             | 51,829        |
| Widowed                                     | 4.0                                   | 20.6                                                             | 3,635         | 3.2                                   | 34.1                                                             | 9,763         | 3.4                                   | 30.9                                                             | 13,398        |
| Divorced/Separated/<br>Deserted/Others      | 5.7                                   | 9.2                                                              | 1,305         | 4.3                                   | 24.1                                                             | 756           | 5.2                                   | 14.6                                                             | 2,061         |
| <b>Living arrangement</b>                   |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Living alone                                | 4.5                                   | 14.0                                                             | 654           | 3.4                                   | 31.3                                                             | 1,494         | 3.7                                   | 27.3                                                             | 2,148         |
| Living with spouse<br>and/or others         | 4.9                                   | 13.9                                                             | 4,159         | 4.4                                   | 20.7                                                             | 5,722         | 4.6                                   | 18.0                                                             | 9,881         |
| Living with spouse and<br>children          | 5.3                                   | 12.3                                                             | 28,506        | 4.9                                   | 16.2                                                             | 12,604        | 5.1                                   | 13.5                                                             | 41,110        |
| Living with children<br>and others          | 4.1                                   | 19.5                                                             | 3,848         | 3.3                                   | 33.1                                                             | 7,723         | 3.5                                   | 29.1                                                             | 11,571        |
| Living with others only                     | 5.6                                   | 13.7                                                             | 1,056         | 3.2                                   | 36.3                                                             | 1,522         | 4.1                                   | 27.6                                                             | 2,578         |
| <b>Religion</b>                             |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Hindu                                       | 5.1                                   | 12.7                                                             | 27,971        | 4.2                                   | 23.3                                                             | 21,216        | 4.7                                   | 17.6                                                             | 49,187        |
| Muslim                                      | 4.8                                   | 15.7                                                             | 4,586         | 4.0                                   | 25.1                                                             | 3,447         | 4.5                                   | 19.7                                                             | 8,033         |
| Christian                                   | 5.3                                   | 17.8                                                             | 3,913         | 4.5                                   | 27.6                                                             | 2,949         | 4.9                                   | 22.1                                                             | 6,862         |
| Others                                      | 5.1                                   | 12.5                                                             | 1,753         | 4.1                                   | 23.7                                                             | 1,453         | 4.6                                   | 17.9                                                             | 3,206         |
| <b>Caste/tribe</b>                          |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Scheduled tribe                             | 3.7                                   | 24.9                                                             | 6,930         | 2.7                                   | 44.2                                                             | 4,802         | 3.3                                   | 33.2                                                             | 11,732        |
| Scheduled caste                             | 4.4                                   | 16.7                                                             | 6,480         | 3.5                                   | 28.5                                                             | 4,745         | 4.0                                   | 22.0                                                             | 11,225        |
| Other backward class                        | 5.2                                   | 12.5                                                             | 14,266        | 4.3                                   | 21.6                                                             | 10,928        | 4.8                                   | 16.6                                                             | 25,194        |
| None of the above                           | 5.8                                   | 8.1                                                              | 10,547        | 4.9                                   | 17.7                                                             | 8,590         | 5.4                                   | 12.6                                                             | 19,137        |
| <b>Education</b>                            |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| No schooling                                | 3.1                                   | 27.2                                                             | 15,178        | 2.5                                   | 38.5                                                             | 15,473        | 2.8                                   | 33.1                                                             | 30,651        |
| Less than 5 years<br>complete               | 4.9                                   | 9.1                                                              | 4,006         | 4.9                                   | 10.8                                                             | 3,526         | 4.9                                   | 9.9                                                              | 7,532         |
| 5-9 years complete                          | 6.4                                   | 1.8                                                              | 10,294        | 6.4                                   | 2.6                                                              | 5,610         | 6.4                                   | 2.1                                                              | 15,904        |
| 10 or more years<br>complete                | 7.7                                   | 0.2                                                              | 8,745         | 7.6                                   | 1.0                                                              | 4,456         | 7.6                                   | 0.5                                                              | 13,201        |
| <b>Work status</b>                          |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Currently working                           | 5.4                                   | 11.3                                                             | 22,331        | 4.7                                   | 17.2                                                             | 8,730         | 5.2                                   | 13.1                                                             | 31,061        |
| Worked in past but<br>currently not working | 4.5                                   | 19.1                                                             | 4,237         | 4.3                                   | 23.7                                                             | 12,301        | 4.4                                   | 22.5                                                             | 16,538        |
| Never worked                                | 4.8                                   | 14.9                                                             | 11,655        | 3.4                                   | 31.4                                                             | 8,034         | 4.2                                   | 22.0                                                             | 19,689        |
| <b>MPCE quintile</b>                        |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Poorest                                     | 4.4                                   | 18.5                                                             | 7,131         | 3.4                                   | 32.1                                                             | 5,935         | 3.9                                   | 25.0                                                             | 13,066        |
| Poorer                                      | 4.8                                   | 15.5                                                             | 7,527         | 3.9                                   | 26.3                                                             | 5,976         | 4.4                                   | 20.5                                                             | 13,503        |
| Middle                                      | 5.1                                   | 13.0                                                             | 7,605         | 4.4                                   | 20.9                                                             | 5,940         | 4.7                                   | 16.7                                                             | 13,545        |
| Richer                                      | 5.5                                   | 10.5                                                             | 8,038         | 4.5                                   | 19.7                                                             | 5,739         | 5.1                                   | 14.6                                                             | 13,777        |
| Richest                                     | 5.8                                   | 8.5                                                              | 7,922         | 5.0                                   | 16.9                                                             | 5,475         | 5.5                                   | 11.9                                                             | 13,397        |
| <b>Total</b>                                | <b>5.1</b>                            | <b>13.2</b>                                                      | <b>38,223</b> | <b>4.2</b>                            | <b>23.6</b>                                                      | <b>29,065</b> | <b>4.7</b>                            | <b>18.0</b>                                                      | <b>67,288</b> |

Notes

\*Including spouse irrespective of age.

<sup>1</sup> Arithmetic function ranges from 0-9 and it includes score for backward counting (0-2), serial 7 (0-5) and computation (0-2).

**Table 10.6 Mean score of arithmetic function and percentage of older adults in lowest 10<sup>th</sup> percentile of score, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*                            |                                                                  |               | Age ≥ 60                              |                                                                  |               | Total                                 |                                                                  |               |
|---------------------------|---------------------------------------|------------------------------------------------------------------|---------------|---------------------------------------|------------------------------------------------------------------|---------------|---------------------------------------|------------------------------------------------------------------|---------------|
|                           | Mean arithmetic function <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean arithmetic function <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        | Mean arithmetic function <sup>1</sup> | % of older adults in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>India</b>              | <b>5.1</b>                            | <b>13.2</b>                                                      | <b>38,223</b> | <b>4.2</b>                            | <b>23.6</b>                                                      | <b>29,065</b> | <b>4.7</b>                            | <b>18.0</b>                                                      | <b>67,288</b> |
| <b>North</b>              |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Chandigarh                | 6.9                                   | 4.3                                                              | 600           | 6.5                                   | 7.3                                                              | 369           | 6.7                                   | 5.5                                                              | 969           |
| Delhi                     | 6.3                                   | 9.9                                                              | 707           | 5.3                                   | 18.0                                                             | 421           | 6.0                                   | 12.9                                                             | 1,128         |
| Haryana                   | 5.7                                   | 13.8                                                             | 951           | 4.2                                   | 26.2                                                             | 774           | 5.0                                   | 19.8                                                             | 1,725         |
| Himachal Pradesh          | 5.8                                   | 10.7                                                             | 746           | 4.6                                   | 27.4                                                             | 595           | 5.2                                   | 18.6                                                             | 1,341         |
| Jammu & Kashmir           | 5.0                                   | 9.4                                                              | 825           | 3.8                                   | 24.7                                                             | 680           | 4.4                                   | 16.9                                                             | 1,505         |
| Punjab                    | 5.6                                   | 7.8                                                              | 1,069         | 4.5                                   | 20.1                                                             | 949           | 5.1                                   | 13.6                                                             | 2,018         |
| Rajasthan                 | 4.3                                   | 19.9                                                             | 1,033         | 3.5                                   | 31.2                                                             | 961           | 3.9                                   | 25.5                                                             | 1,994         |
| Uttarakhand               | 5.0                                   | 15.9                                                             | 705           | 4.2                                   | 25.3                                                             | 631           | 4.6                                   | 20.5                                                             | 1,336         |
| <b>Central</b>            |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Chhattisgarh              | 4.2                                   | 19.7                                                             | 1,223         | 3.6                                   | 29.6                                                             | 733           | 4.0                                   | 23.5                                                             | 1,956         |
| Madhya Pradesh            | 4.6                                   | 15.7                                                             | 1,424         | 3.6                                   | 27.3                                                             | 1,166         | 4.1                                   | 21.2                                                             | 2,590         |
| Uttar Pradesh             | 4.7                                   | 18.8                                                             | 1,992         | 4.2                                   | 25.3                                                             | 1,794         | 4.4                                   | 22.0                                                             | 3,786         |
| <b>East</b>               |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Bihar                     | 5.1                                   | 11.4                                                             | 1,674         | 4.4                                   | 18.3                                                             | 1,733         | 4.7                                   | 15.1                                                             | 3,407         |
| Jharkhand                 | 5.2                                   | 12.8                                                             | 1,233         | 4.5                                   | 21.7                                                             | 1,102         | 4.9                                   | 17.1                                                             | 2,335         |
| Odisha                    | 4.5                                   | 21.6                                                             | 1,569         | 3.5                                   | 37.0                                                             | 1,145         | 4.0                                   | 28.4                                                             | 2,714         |
| West Bengal               | 5.3                                   | 12.3                                                             | 2,290         | 4.1                                   | 29.1                                                             | 1,461         | 4.8                                   | 19.0                                                             | 3,751         |
| <b>Northeast</b>          |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Arunachal Pradesh         | 3.5                                   | 24.6                                                             | 872           | 1.6                                   | 62.2                                                             | 305           | 3.1                                   | 33.7                                                             | 1,177         |
| Assam                     | 5.2                                   | 14.4                                                             | 1,519         | 4.3                                   | 28.2                                                             | 783           | 4.9                                   | 19.2                                                             | 2,302         |
| Manipur                   | 6.4                                   | 4.0                                                              | 732           | 5.2                                   | 10.9                                                             | 562           | 5.9                                   | 7.1                                                              | 1,294         |
| Meghalaya                 | 6.0                                   | 9.8                                                              | 532           | 5.0                                   | 19.3                                                             | 393           | 5.6                                   | 13.8                                                             | 925           |
| Mizoram                   | 5.6                                   | 9.4                                                              | 693           | 4.2                                   | 20.7                                                             | 475           | 5.0                                   | 14.3                                                             | 1,168         |
| Nagaland                  | 4.7                                   | 22.5                                                             | 695           | 3.8                                   | 37.0                                                             | 584           | 4.2                                   | 29.5                                                             | 1,279         |
| Tripura                   | 4.7                                   | 15.6                                                             | 715           | 3.4                                   | 32.5                                                             | 455           | 4.2                                   | 22.3                                                             | 1,170         |
| <b>West</b>               |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Dadra & Nagar Haveli      | 5.0                                   | 17.3                                                             | 588           | 3.3                                   | 37.9                                                             | 416           | 4.3                                   | 25.3                                                             | 1,004         |
| Daman & Diu               | 5.3                                   | 6.5                                                              | 524           | 4.3                                   | 19.7                                                             | 381           | 4.8                                   | 12.5                                                             | 905           |
| Goa                       | 5.8                                   | 8.5                                                              | 763           | 4.7                                   | 24.7                                                             | 598           | 5.3                                   | 15.8                                                             | 1,361         |
| Gujarat                   | 4.9                                   | 13.6                                                             | 1,255         | 4.6                                   | 16.9                                                             | 887           | 4.8                                   | 15.0                                                             | 2,142         |
| Maharashtra               | 5.1                                   | 9.4                                                              | 2,066         | 4.2                                   | 21.8                                                             | 1,665         | 4.7                                   | 15.4                                                             | 3,731         |
| <b>South</b>              |                                       |                                                                  |               |                                       |                                                                  |               |                                       |                                                                  |               |
| Andaman & Nicobar Islands | 5.0                                   | 17.4                                                             | 686           | 3.6                                   | 30.9                                                             | 475           | 4.4                                   | 22.8                                                             | 1,161         |
| Andhra Pradesh            | 5.5                                   | 10.3                                                             | 1,480         | 4.1                                   | 24.1                                                             | 1,037         | 4.9                                   | 16.1                                                             | 2,517         |
| Karnataka                 | 5.1                                   | 13.3                                                             | 1,239         | 4.0                                   | 20.2                                                             | 881           | 4.7                                   | 16.0                                                             | 2,120         |
| Kerala                    | 6.8                                   | 2.8                                                              | 1,220         | 5.7                                   | 12.3                                                             | 1,141         | 6.2                                   | 7.7                                                              | 2,361         |
| Lakshadweep               | 5.7                                   | 10.1                                                             | 594           | 4.2                                   | 28.3                                                             | 473           | 5.0                                   | 18.8                                                             | 1,067         |
| Puducherry                | 7.2                                   | 1.2                                                              | 765           | 6.5                                   | 4.6                                                              | 609           | 6.9                                   | 2.8                                                              | 1,374         |
| Tamil Nadu                | 6.3                                   | 4.5                                                              | 1,893         | 5.4                                   | 13.4                                                             | 1,427         | 5.9                                   | 8.6                                                              | 3,320         |
| Telangana                 | 5.0                                   | 10.8                                                             | 1,351         | 3.9                                   | 21.3                                                             | 1,004         | 4.5                                   | 15.5                                                             | 2,355         |

Notes

\*Including spouse irrespective of age

<sup>1</sup>Arithmetic function ranges from 0-9 and it includes score for backward counting (0-2), serial 7 (0-5) and computation (0-2).

### 10.1.5 Object naming and executive function

Vocabulary knowledge measures the degree to which a respondent comprehends and can verbally express vocabulary. In the LASI, the object naming test assessed respondents' vocabulary knowledge as well as crystallized intelligence, which is the ability to use skills, knowledge, and experience. Crystallized intelligence does not equate to memory, but it does rely on accessing information from long-term memory. Executive function represents mental processes that enable us to successfully plan, focus attention, remember instructions, and juggle multiple tasks. Executive function facilitates mentally engaging with ideas; taking the time to think before acting; meeting novel, unanticipated challenges; resisting temptations; and staying focused (Diamond, 2013).

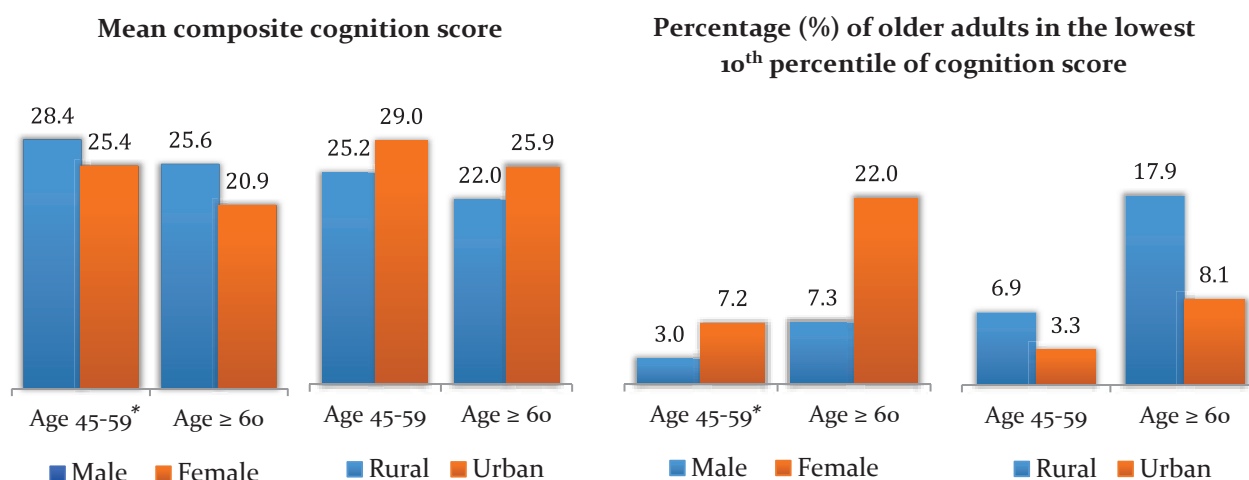
In the LASI, information was collected on object naming and executive function skills as described in Table A. The scoring developed for both tests is used in the composite cognition score.

### 10.1.6 Composite cognition

In the LASI, respondents' cognitive abilities are assessed on six cognitive domains: memory, orientation, retrieval fluency, arithmetic, executive functioning skills, and object naming. A summary composite cognitive score was generated by combining scores from all cognitive domains except retrieval fluency. The composite cognition score ranges from 0 to 43, with higher score indicating better cognitive ability.

Table 10.7 presents the mean score and percentage of older adults in the lowest 10<sup>th</sup> percentile for composite cognition by background characteristics. In India, the mean composite cognition score among older adults age 45 and above is 25, with 10% in the lowest 10<sup>th</sup> percentile of the composite cognition score. A higher percentage of elderly age 60 and above (15%) than older adults age 45-59 (6%) are in the lowest 10<sup>th</sup> percentile of composite cognition score. Among elderly age 60 and above, men (25.6) and those living in urban areas (25.9) have higher mean composite cognition score than women (20.9) and those residing in rural areas (22.0). Twelve percent of older adults age 45 and above and 18% of the elderly age 60 and above in rural areas are in the lowest 10<sup>th</sup> percentile of composite cognition score. Sex differences in the cognitive score are more pronounced among the elderly age 60 and above; 7% of elderly men are found in the lowest 10<sup>th</sup> percentile of composite cognition score compared with 22% of elderly women. The percentage of elderly age 60 and above in the lowest 10<sup>th</sup> percentile of cognition score is higher among the widowed (24%), those living with others only (26%), and Scheduled tribe (31%), and decreases with educational attainment and MPCE quintiles.

**Figure 10.3 Composite cognition score (0-43) among older adults by sex and place of residence, India, LASI Wave 1, 2017-18**

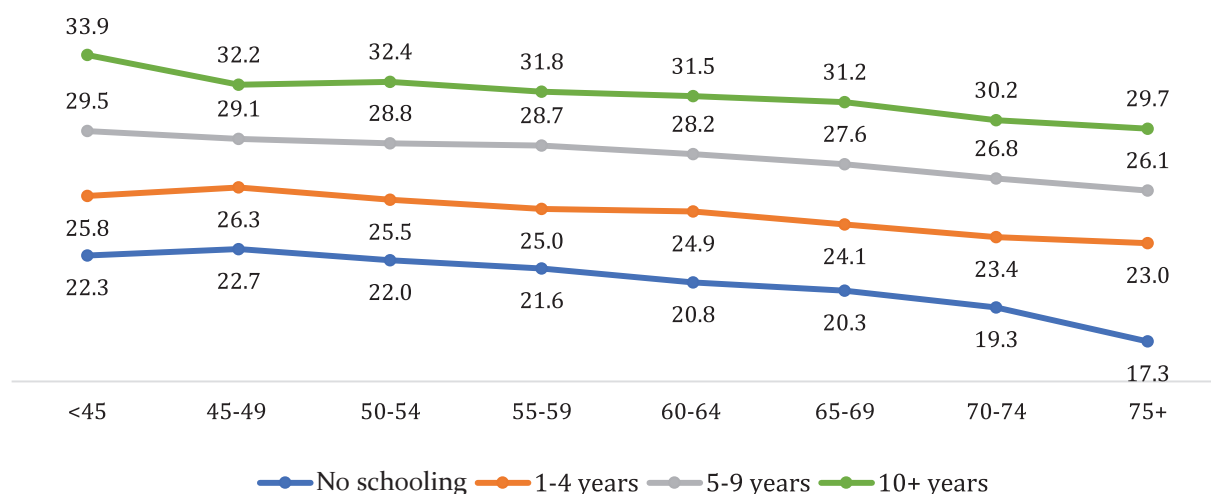


Note

\*Including spouse irrespective of age.

Figure 10.4 presents the mean composite cognition score by age and education. The mean composite cognition score decreases for lower levels of education and with advancing age, and this decrease is more pronounced for elderly age 75 and above.

**Figure 10.4 Composite cognition score among older adults by age and education, India, LASI Wave 1, 2017-18**



The mean composite cognition score differs considerably across India's states/UTs (Table 10.8). The mean cognition score is much higher among older adults age 45 and above in Puducherry (31.6) followed by Chandigarh (31.4) and a lower mean score is observed in Odisha (22.9). Among the elderly age 60 and above, the mean cognition score is lowest in Arunachal Pradesh (19.3). The percentage of older adults age 45 and above in the lowest 10<sup>th</sup> percentile for the cognition score varies from less than 1% in Chandigarh to 20% in Nagaland; more than a quarter of the elderly age 60 and above are in the lowest percentile of composite cognition score in Arunachal Pradesh (31%), Dadra & Nagar Haveli (30%), and Odisha (28%); by contrast, the proportion is very low among the elderly in Puducherry (4%) and Chandigarh (1%).

**Table 10.7 Mean composite cognition score with percentage of older adults in lowest 10th percentile of score by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Cognition <sup>1</sup> |                                                  |               |             |                                                  |               |             |                                                  |               |
|---------------------------------------------|------------------------|--------------------------------------------------|---------------|-------------|--------------------------------------------------|---------------|-------------|--------------------------------------------------|---------------|
|                                             | Age 45-59*             |                                                  |               | Age ≥ 60    |                                                  |               | Total       |                                                  |               |
|                                             | Mean score             | % in lowest 10 <sup>th</sup> percentile of score | Number        | Mean score  | % in lowest 10 <sup>th</sup> percentile of score | Number        | Mean score  | % in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>Place of residence</b>                   |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Rural                                       | 25.2                   | 6.9                                              | 23,015        | 22.0        | 17.9                                             | 17,651        | 23.7        | 12.0                                             | 40,666        |
| Urban                                       | 29.0                   | 3.3                                              | 13,489        | 25.9        | 8.1                                              | 9,284         | 27.7        | 5.3                                              | 22,773        |
| <b>Sex</b>                                  |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Male                                        | 28.4                   | 3.0                                              | 13,835        | 25.6        | 7.3                                              | 12,959        | 27.0        | 5.2                                              | 26,794        |
| Female                                      | 25.4                   | 7.2                                              | 22,669        | 20.9        | 22.0                                             | 13,976        | 23.6        | 13.2                                             | 36,645        |
| <b>Marital status</b>                       |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Currently married                           | 26.8                   | 5.2                                              | 31,869        | 24.5        | 9.9                                              | 17,375        | 25.9        | 6.9                                              | 49,244        |
| Widowed                                     | 23.8                   | 10.1                                             | 3,430         | 20.7        | 24.0                                             | 8,896         | 21.4        | 20.6                                             | 12,326        |
| Divorced/Separated/<br>Deserted/Others      | 26.4                   | 4.4                                              | 1,205         | 22.6        | 17.9                                             | 664           | 25.1        | 9.1                                              | 1,869         |
| <b>Living arrangement</b>                   |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Living alone                                | 25.0                   | 8.4                                              | 621           | 21.2        | 22.7                                             | 1,356         | 22.1        | 19.3                                             | 1,977         |
| Living with spouse and/or<br>others         | 26.0                   | 5.5                                              | 3,967         | 23.9        | 11.4                                             | 5,304         | 24.8        | 8.9                                              | 9,271         |
| Living with spouse and<br>children          | 26.9                   | 5.2                                              | 27,306        | 24.7        | 9.2                                              | 11,868        | 26.2        | 6.4                                              | 39,174        |
| Living with children and<br>others          | 24.1                   | 9.2                                              | 3,622         | 20.9        | 23.3                                             | 7,055         | 21.8        | 19.2                                             | 10,677        |
| Living with others only                     | 25.7                   | 5.9                                              | 988           | 20.2        | 25.8                                             | 1,352         | 22.4        | 17.7                                             | 2,340         |
| <b>Religion</b>                             |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Hindu                                       | 26.6                   | 5.6                                              | 26,561        | 23.2        | 14.6                                             | 19,558        | 25.1        | 9.6                                              | 46,119        |
| Muslim                                      | 26.0                   | 4.5                                              | 4,446         | 22.7        | 16.1                                             | 3,268         | 24.6        | 9.3                                              | 7,714         |
| Christian                                   | 24.6                   | 12.0                                             | 3,806         | 23.0        | 20.8                                             | 2,742         | 23.9        | 15.6                                             | 6,548         |
| Others                                      | 26.3                   | 6.0                                              | 1,691         | 22.6        | 15.8                                             | 1,367         | 24.6        | 10.7                                             | 3,058         |
| <b>Caste/tribe</b>                          |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Scheduled tribe                             | 23.3                   | 13.1                                             | 6,697         | 19.6        | 30.9                                             | 4,501         | 21.8        | 20.6                                             | 11,198        |
| Scheduled caste                             | 24.8                   | 7.5                                              | 6,153         | 21.6        | 18.9                                             | 4,378         | 23.4        | 12.6                                             | 10,531        |
| Other backward class                        | 27.0                   | 4.6                                              | 13,470        | 23.5        | 12.9                                             | 9,975         | 25.4        | 8.2                                              | 23,445        |
| None of the above                           | 27.8                   | 3.6                                              | 10,184        | 24.5        | 11.3                                             | 8,081         | 26.3        | 7.1                                              | 18,265        |
| <b>Education</b>                            |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| No schooling                                | 22.1                   | 11.9                                             | 14,355        | 19.5        | 24.6                                             | 14,134        | 20.8        | 18.4                                             | 28,489        |
| Less than 5 years<br>complete               | 25.7                   | 3.6                                              | 3,865         | 23.9        | 7.7                                              | 3,324         | 24.8        | 5.6                                              | 7,189         |
| 5-9 years complete                          | 29.0                   | 0.6                                              | 9,872         | 27.4        | 1.5                                              | 5,275         | 28.4        | 1.0                                              | 15,147        |
| 10 or more years<br>complete                | 32.5                   | 0.1                                              | 8,412         | 30.9        | 0.5                                              | 4,202         | 32.0        | 0.2                                              | 12,614        |
| <b>Work status</b>                          |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Currently working                           | 26.9                   | 5.1                                              | 21,386        | 24.2        | 9.9                                              | 8,236         | 26.1        | 6.6                                              | 29,622        |
| Worked in past but<br>currently not working | 25.1                   | 9.2                                              | 4,018         | 23.1        | 16.7                                             | 11,303        | 23.6        | 14.7                                             | 15,321        |
| Never worked                                | 26.2                   | 5.2                                              | 11,100        | 21.9        | 18.7                                             | 7,396         | 24.4        | 10.9                                             | 18,496        |
| <b>MPCE quintile</b>                        |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Poorest                                     | 25.0                   | 7.5                                              | 6,792         | 21.4        | 20.2                                             | 5,446         | 23.3        | 13.5                                             | 12,238        |
| Poorer                                      | 25.6                   | 6.5                                              | 7,147         | 22.3        | 17.0                                             | 5,522         | 24.1        | 11.3                                             | 12,669        |
| Middle                                      | 26.2                   | 6.9                                              | 7,258         | 23.4        | 13.2                                             | 5,510         | 25.0        | 9.8                                              | 12,768        |
| Richer                                      | 27.2                   | 4.3                                              | 7,715         | 24.0        | 12.1                                             | 5,303         | 25.8        | 7.7                                              | 13,018        |
| Richest                                     | 28.5                   | 2.9                                              | 7,592         | 24.9        | 11.2                                             | 5,154         | 27.1        | 6.2                                              | 12,746        |
| <b>Total</b>                                | <b>26.5</b>            | <b>5.6</b>                                       | <b>36,504</b> | <b>23.1</b> | <b>15.0</b>                                      | <b>26,935</b> | <b>25.0</b> | <b>9.8</b>                                       | <b>63,439</b> |

Notes

*\*Including spouse irrespective of age.*

Combined Cognition score ranges from 0-43. It includes score for orientation (0-8), object naming (0-2), arithmetic function (0-9) and executive function (paper folding & pentagon drawing) (0-4) and total word recall (0-20).

**Table 10.8 Mean composite cognition score with percentage of older adults in lowest 10<sup>th</sup> percentile of score, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Cognition <sup>1</sup> |                                                  |               |             |                                                  |               |             |                                                  |               |
|---------------------------|------------------------|--------------------------------------------------|---------------|-------------|--------------------------------------------------|---------------|-------------|--------------------------------------------------|---------------|
|                           | Age 45-59*             |                                                  |               | Age ≥ 60    |                                                  |               | Total       |                                                  |               |
|                           | Mean score             | % in lowest 10 <sup>th</sup> percentile of score | Number        | Mean score  | % in lowest 10 <sup>th</sup> percentile of score | Number        | Mean score  | % in lowest 10 <sup>th</sup> percentile of score | Number        |
| <b>India</b>              | <b>26.5</b>            | <b>5.6</b>                                       | <b>36,504</b> | <b>23.1</b> | <b>15.0</b>                                      | <b>26,935</b> | <b>25.0</b> | <b>9.8</b>                                       | <b>63,439</b> |
| <b>North</b>              |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Chandigarh                | 32.0                   | 0.8                                              | 586           | 30.5        | 1.3                                              | 351           | 31.4        | 0.9                                              | 937           |
| Delhi                     | 28.2                   | 2.4                                              | 644           | 24.8        | 12.2                                             | 355           | 27.0        | 5.8                                              | 999           |
| Haryana                   | 26.8                   | 5.0                                              | 935           | 23.0        | 15.0                                             | 742           | 25.0        | 9.7                                              | 1,677         |
| Himachal Pradesh          | 27.1                   | 4.6                                              | 675           | 23.3        | 18.6                                             | 521           | 25.3        | 11.1                                             | 1,196         |
| Jammu & Kashmir           | 26.5                   | 5.5                                              | 814           | 22.4        | 17.2                                             | 660           | 24.5        | 11.2                                             | 1,474         |
| Punjab                    | 27.4                   | 1.7                                              | 1,042         | 23.9        | 9.5                                              | 910           | 25.8        | 5.4                                              | 1,952         |
| Rajasthan                 | 24.9                   | 5.8                                              | 964           | 21.6        | 19.3                                             | 858           | 23.3        | 12.5                                             | 1,822         |
| Uttarakhand               | 26.1                   | 5.2                                              | 633           | 22.9        | 14.0                                             | 562           | 24.5        | 9.5                                              | 1,195         |
| <b>Central</b>            |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Chhattisgarh              | 25.3                   | 6.3                                              | 1,174         | 23.0        | 13.1                                             | 680           | 24.4        | 8.8                                              | 1,854         |
| Madhya Pradesh            | 27.2                   | 2.9                                              | 1,328         | 24.4        | 9.0                                              | 1,064         | 25.9        | 5.8                                              | 2,392         |
| Uttar Pradesh             | 25.0                   | 6.9                                              | 1,886         | 22.9        | 14.1                                             | 1,703         | 24.0        | 10.4                                             | 3,589         |
| <b>East</b>               |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Bihar                     | 26.4                   | 4.0                                              | 1,596         | 24.0        | 10.5                                             | 1,637         | 25.1        | 7.4                                              | 3,233         |
| Jharkhand                 | 24.8                   | 10.4                                             | 1,026         | 21.9        | 20.8                                             | 911           | 23.5        | 15.4                                             | 1,937         |
| Odisha                    | 24.6                   | 10.1                                             | 1,555         | 20.7        | 28.2                                             | 1,111         | 22.9        | 17.9                                             | 2,666         |
| West Bengal               | 26.5                   | 5.0                                              | 2,264         | 22.6        | 18.4                                             | 1,414         | 25.0        | 10.3                                             | 3,678         |
| <b>Northeast</b>          |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Arunachal Pradesh         | 25.0                   | 9.2                                              | 856           | 19.3        | 31.3                                             | 275           | 23.8        | 14.0                                             | 1,131         |
| Assam                     | 27.3                   | 6.5                                              | 1,510         | 23.6        | 19.6                                             | 762           | 26.0        | 11.1                                             | 2,272         |
| Manipur                   | 29.0                   | 2.0                                              | 669           | 25.8        | 7.6                                              | 502           | 27.6        | 4.6                                              | 1,171         |
| Meghalaya                 | 28.3                   | 5.3                                              | 524           | 25.9        | 12.0                                             | 356           | 27.3        | 8.0                                              | 880           |
| Mizoram                   | 27.5                   | 1.5                                              | 690           | 23.3        | 11.0                                             | 462           | 25.7        | 5.5                                              | 1,152         |
| Nagaland                  | 25.0                   | 14.9                                             | 686           | 21.8        | 26.1                                             | 571           | 23.4        | 20.2                                             | 1,257         |
| Tripura                   | 24.8                   | 8.1                                              | 708           | 20.5        | 23.3                                             | 449           | 23.1        | 14.1                                             | 1,157         |
| <b>West</b>               |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Dadra & Nagar Haveli      | 25.6                   | 13.0                                             | 573           | 20.4        | 30.3                                             | 392           | 23.6        | 19.7                                             | 965           |
| Daman & Diu               | 27.9                   | 4.2                                              | 511           | 23.7        | 9.4                                              | 352           | 26.0        | 6.5                                              | 863           |
| Goa                       | 27.8                   | 2.9                                              | 735           | 23.5        | 19.4                                             | 555           | 25.9        | 10.2                                             | 1,290         |
| Gujarat                   | 25.7                   | 8.5                                              | 1,214         | 23.1        | 15.5                                             | 826           | 24.6        | 11.4                                             | 2,040         |
| Maharashtra               | 26.3                   | 5.3                                              | 2,008         | 22.7        | 15.9                                             | 1,567         | 24.6        | 10.4                                             | 3,575         |
| <b>South</b>              |                        |                                                  |               |             |                                                  |               |             |                                                  |               |
| Andaman & Nicobar Islands | 26.4                   | 5.9                                              | 669           | 22.0        | 18.9                                             | 452           | 24.7        | 11.1                                             | 1,121         |
| Andhra Pradesh            | 26.8                   | 3.0                                              | 1,454         | 23.1        | 15.1                                             | 999           | 25.2        | 8.0                                              | 2,453         |
| Karnataka                 | 26.7                   | 8.2                                              | 1,175         | 22.4        | 16.6                                             | 806           | 25.1        | 11.4                                             | 1,981         |
| Kerala                    | 29.7                   | 1.9                                              | 1,188         | 25.0        | 10.7                                             | 1,079         | 27.3        | 6.4                                              | 2,267         |
| Lakshadweep               | 27.6                   | 3.6                                              | 588           | 23.1        | 17.2                                             | 458           | 25.5        | 10.0                                             | 1,046         |
| Puducherry                | 33.3                   | 0.4                                              | 741           | 29.7        | 4.0                                              | 584           | 31.6        | 2.1                                              | 1,325         |
| Tamil Nadu                | 30.7                   | 0.9                                              | 1,624         | 27.3        | 4.5                                              | 1,079         | 29.3        | 2.4                                              | 2,703         |
| Telangana                 | 26.2                   | 5.7                                              | 1,259         | 22.0        | 18.7                                             | 930           | 24.3        | 11.4                                             | 2,189         |

Notes

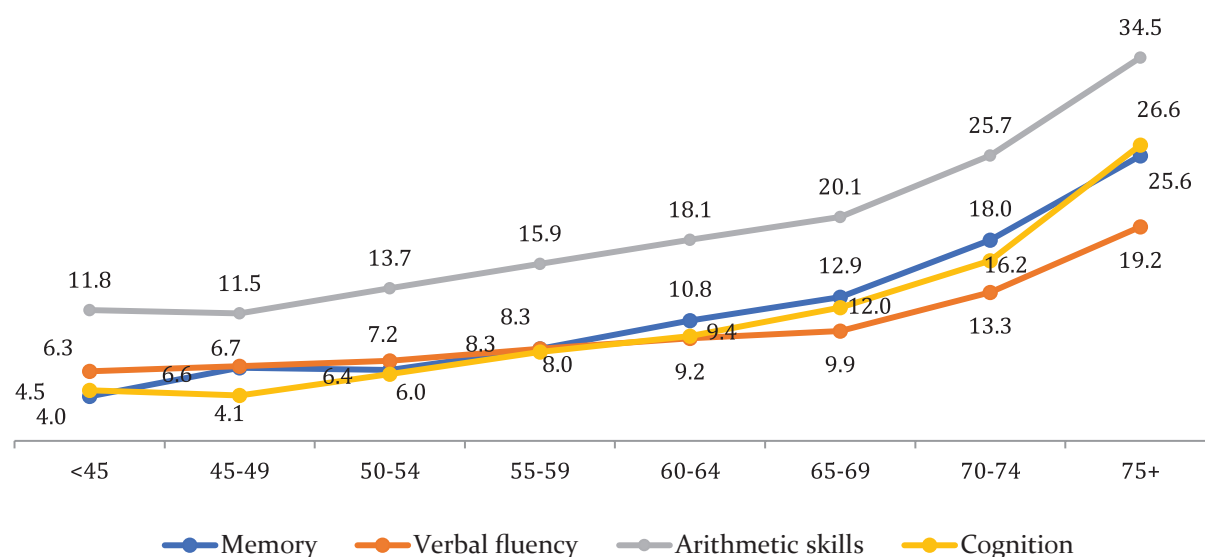
*\*Including spouse irrespective of age.*

Combined Cognition score ranges from 0-43. It includes score for orientation (0-8), object naming (0-2), arithmetic function (0-9) and executive function (paper folding & pentagon drawing) (0-4) and total word recall (0-20).



Figure 10.5 presents the percentage of older adults in the lowest 10<sup>th</sup> percentile across different cognitive domains. The percentage of older adults in the lowest 10<sup>th</sup> percentile increases with advancing age across all domains. For composite cognition, there is a sharp increase in the percentage found in the lowest 10<sup>th</sup> percentile among elderly age 75 or above. More than a quarter of the elderly age 75 or above are in the lowest 10<sup>th</sup> percentile across all composite cognition score domains except verbal fluency.

**Figure 10.5 Percentage of older adults in the lowest 10th percentile for different cognitive domains by age, India, LASI Wave 1, 2017-18**



### Key findings: cognition

- Overall, in India, the mean score in each of six cognitive domains is lower among elderly age 60 and above than older adults age 45-59, among rural compared to urban elderly, and among elderly women compared to men.
- Older adults and elderly with more than 10 years of schooling performed much better in each of the cognitive domains. Around a quarter of elderly with no schooling (25%) had cognitive score in lowest 10th percentile compared with less than 1% of elderly age 60 and above (0.5%) in the lowest 10<sup>th</sup> percentile of the composite cognition score.
- In all cognitive domains as well as in the composite cognitive score, older adults age 45-59 and elderly age 60 and above in the states/UTs with better education such as Chandigarh, Puducherry, Kerala, Tamil Nadu, Mizoram and Delhi have higher score on cognitive abilities.

## 10.2 DEPRESSION

Depression is defined as an extended period of time (at least two weeks) in which a person experiences a depressed mood or loss of interest or pleasure in activities that were once enjoyed (Gururaj et al., 2016). Depression can cause great suffering and can lead to impaired functioning in daily life. Older people with depressive symptoms have poorer functioning compared to those with chronic medical conditions (WHO, 2017b). Given the associated problems, such as decreased optimism/motivation, low self-esteem, trouble concentrating (paying attention), self-harm, and/or suicidal thoughts and behaviour, identifying and treating depression is critical, especially when comorbidities are more prevalent. Depressive symptoms include feeling sad or down most of the time, loss of interest in usual activities, significant weight loss or weight gain, a decrease or increase in appetite, difficulty sleeping or sleeping too much, feeling agitated or irritable, feeling tired or loss of energy (fatigue), feelings of worthlessness or excessive/inappropriate guilt, difficulty in thinking, concentrating, or making decisions, crying spells, feeling hopeless, and suicidal thoughts and/or attempts. Although most individuals experience some form of these symptoms, for a diagnosis of depression, these symptoms must either result in significant feelings of distress or interfere with day-to-day functioning.

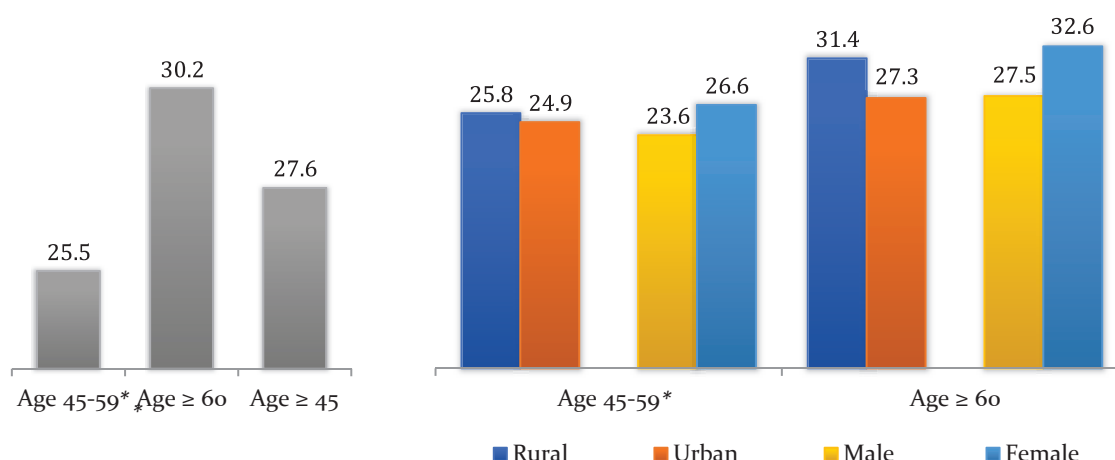
In the LASI, two internationally validated and comparable tools are used to assess depressive symptoms and episodes: the Centre for Epidemiologic Studies Depression (CES-D) scale was used to identify the presence of depressive symptoms (Radloff, 1977) and the Composite International Diagnostic Interview - Short Form (CIDI-SF) scale, a structured interview scale, was used for diagnosing probable major depression (Kessler and Ustun, 2004).

### 10.2.1 Centre for Epidemiologic Studies Depression Scale (CES-D)

The full form CES-D is a short self-report scale designed as a screening tool for depressive symptoms in the general population (Radloff, 1977). The original CES-D scale is a 20-item scale, while a shortened 10-item scale with four scale option categories was used in the LASI. The 10 items included seven negative symptoms (trouble concentrating, feeling depressed, low energy, fear of something, feeling alone, bothered by things, and everything is an effort), and three positive symptoms (feeling happy, hopeful, and satisfied). Response options included rarely or never (< 1 day), sometimes (1 or 2 days), often (3 or 4 days), and most or all of the time (5-7 days) in a week prior to the interview. For negative symptoms, rarely or never (< 1 day), and sometimes (1 or 2 days) were scored zero, and often (3 or 4 days) and most or all of the time (5-7 days) categories were scored one. Scoring was reversed for positive symptoms. The overall score ranges from zero to 10 and score of four or more are used to calculate the prevalence of depressive symptoms (Kumar et al., 2016).

Figure 10.6 shows that the overall proportion of older adults in India age 45 and above who screened positive for depressive symptoms based on the CES-D scale is 28%; 30% of the elderly age 60 and above have depressive symptoms, compared to 26% of older adults age 45-59. A higher proportion of the elderly age 60 and above residing in rural areas (31%) screened positive for depression symptoms than in urban areas (27%). This proportion is also higher among older adult women age 45-59 (27%) than older adult men (24%); this sex-based difference is also seen among the elderly age 60 and above.

**Figure 10.6 Percentage of older adults screened positive for depressive symptoms based on CES-D by selected demographic characteristics, India, LASI Wave 1, 2017-18**

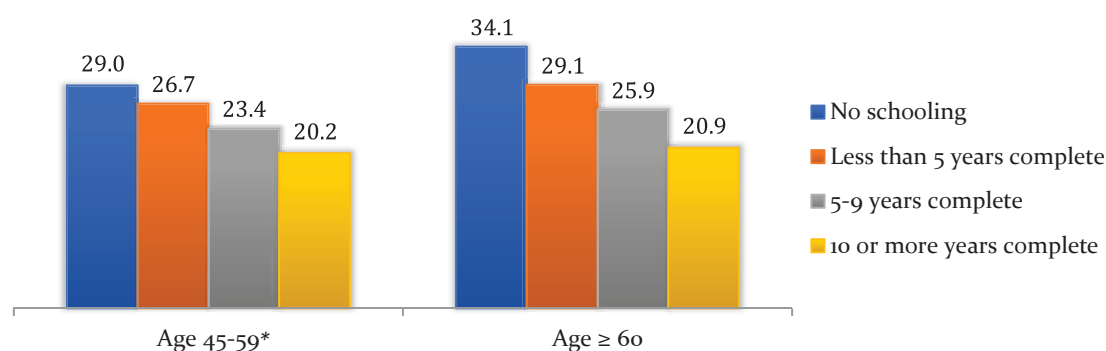


Note

\*Including spouse irrespective of age.

The percentage of older adults screened positive for depressive symptoms decreases with increased years of schooling (Figure 10.7). A higher proportion of the elderly age 60 and above with no education (34%) have depressive symptoms compared to those with some education. The same pattern is observed with older adults age 45-59.

**Figure 10.7 Percentage of older adults screened positive for depressive symptoms based on CES-D by education, India, LASI Wave 1, 2017-18**



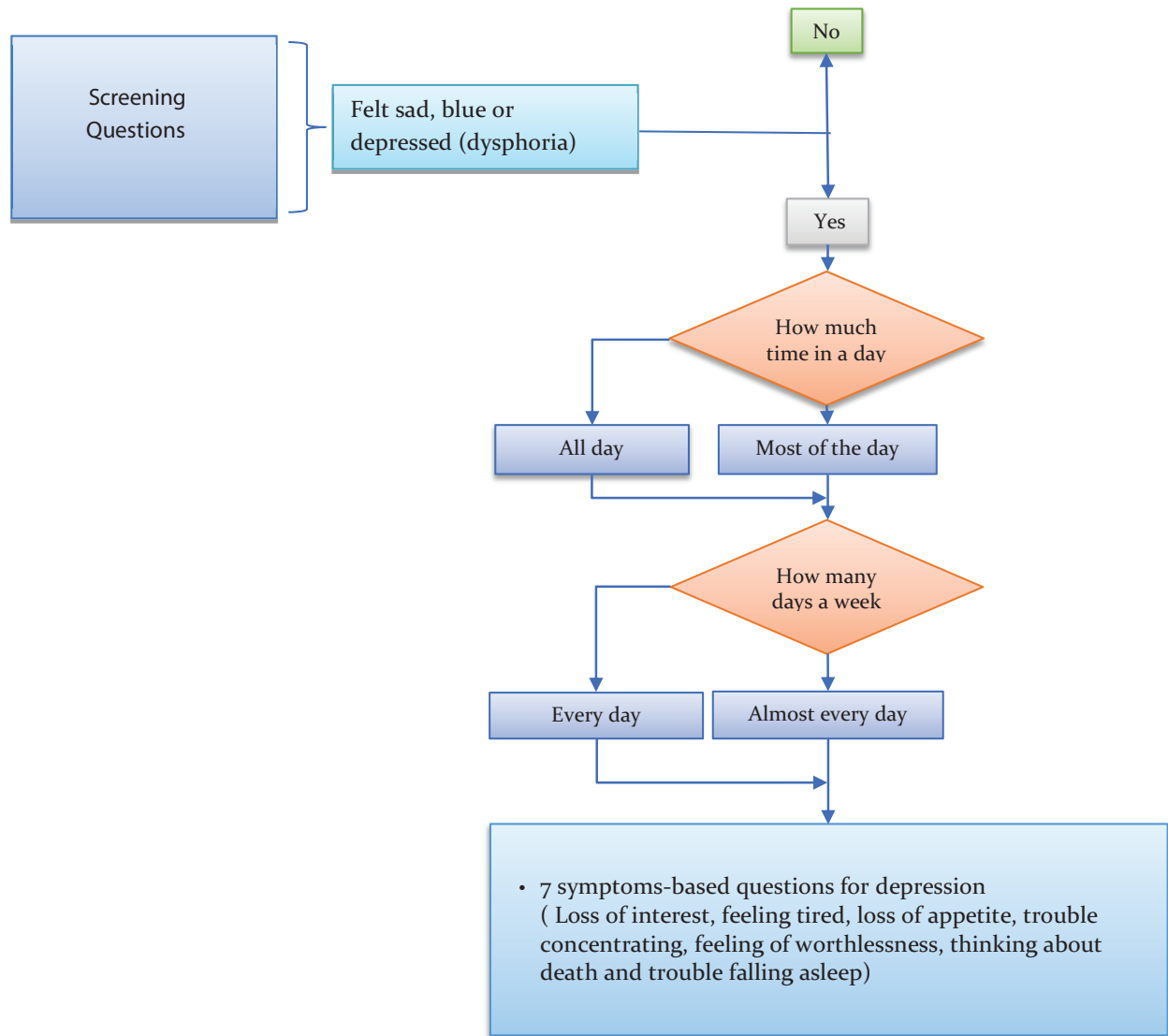
Note

\*Including spouse irrespective of age.

### 10.2.2 Composite International Diagnostic Interview- Short Form (CIDI-SF)

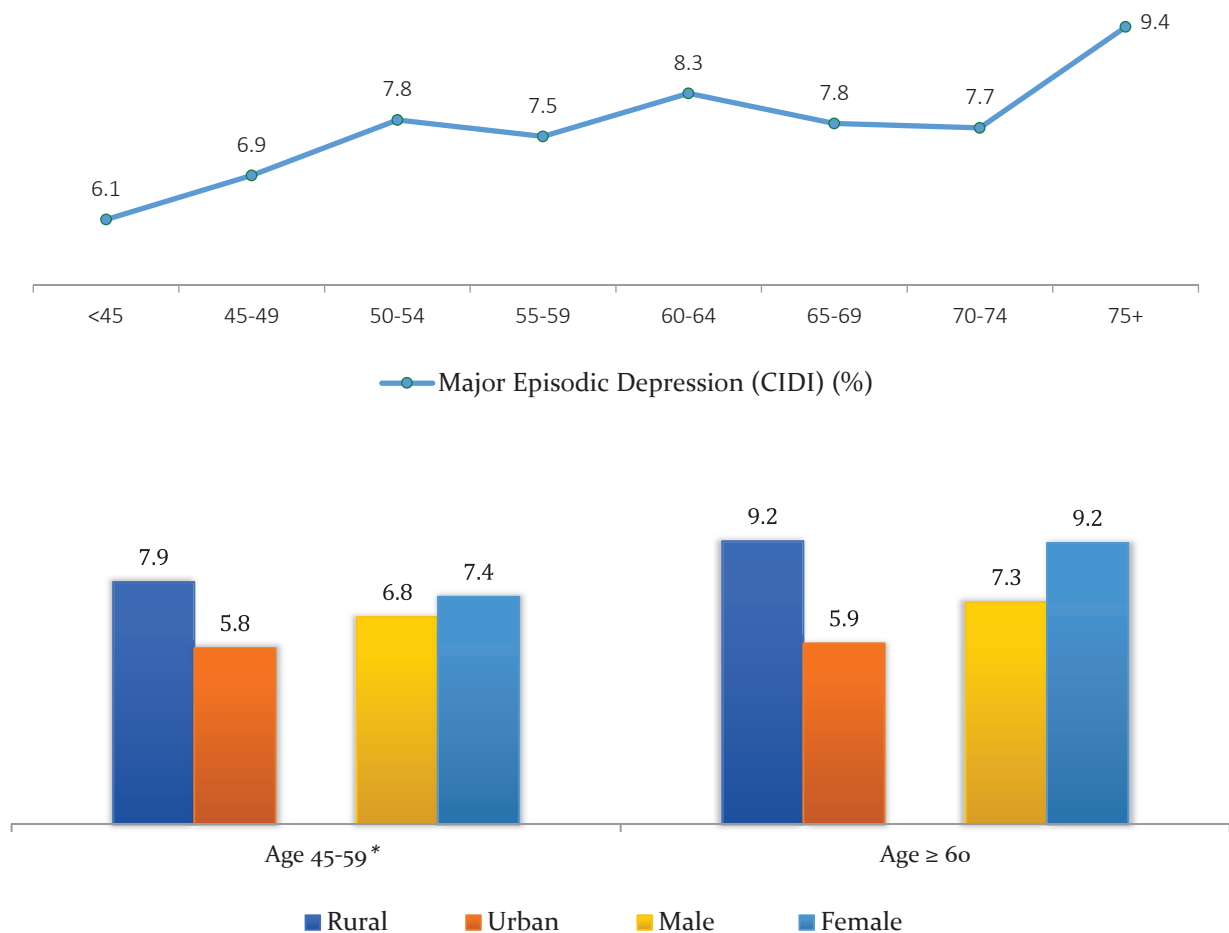
The Short Form Composite International Diagnostic Interview (CIDI-SF) is used in the LASI to estimate the diagnostic symptoms-based prevalence of major depression (Kessler and Ustun, 2004). This scale determines a probable psychiatric diagnosis of major depression and has been validated in field settings and widely used in population-based health surveys. The CIDI-SF scale score ranges from 0 to 10 and a score of three or more is used to calculate the prevalence of probable major depression. The complete flowchart of the CIDI-SF scale is shown in the following chart.

**Chart 10.1: Flow of questions in the CIDI-SF scale**



The overall prevalence of probable major depression among respondents with symptoms of dysphoria is 7.7 % and with symptoms of either dysphoria or anhedonia is 8%. The prevalence of major depression with symptoms of dysphoria by CIDI-SF score of 4 or more is 7.2%. This chapter presents the information about prevalence of probable major depression among the older adults in India with symptoms of dysphoria, calculated using the CIDI-SF score of 3 or more. Figure 10.8 shows the prevalence of depression by age, place of residence, and sex. The prevalence of probable major depression increases steadily with age with the highest prevalence of 9.4% among elderly age 75 and above.

**Figure 10.8 Prevalence (%) of probable major depression based on CIDI-SF among older adults by age, place of residence and sex, India, LASI Wave 1, 2017-18**



Note

\*Including spouse irrespective of age.

Table 10.9 shows the prevalence of probable major depression based on the standard CIDI-SF diagnostic scale by background characteristics. The overall prevalence of probable major depression among older adults age 45 and above in India is 8%. Among the elderly age 60 and above, the prevalence of probable major depression is higher among women (9%) than men (7%), and those in rural (9%) than urban (6%) areas, among the widowed (10%), those living alone (13%), Scheduled caste (10%), and those who worked in the past but are not currently working (10%). By education, the prevalence of probable major depression among the elderly age 60 and above declines sharply with educational attainment ranging from 9% of those with less than primary education to 5% of those with 10 or more years of schooling; but the prevalence rate does not vary much by MPCE quintiles.

**Table 10.9 Prevalence (%) of measured probable major depression based on CIDI-SF scale among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Measured probable major depression based on CIDI-SF <sup>1</sup> |               |            |               |            |               |
|------------------------------------------|------------------------------------------------------------------|---------------|------------|---------------|------------|---------------|
|                                          | Age 45-59*                                                       | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>Place of residence</b>                |                                                                  |               |            |               |            |               |
| Rural                                    | 7.9                                                              | 25,527        | 9.2        | 20,206        | 8.5        | 45,733        |
| Urban                                    | 5.8                                                              | 14,737        | 5.9        | 10,431        | 5.8        | 25,168        |
| <b>Sex</b>                               |                                                                  |               |            |               |            |               |
| Male                                     | 6.8                                                              | 15,239        | 7.3        | 14,682        | 7.0        | 29,921        |
| Female                                   | 7.4                                                              | 25,025        | 9.2        | 15,955        | 8.2        | 40,980        |
| <b>Marital status</b>                    |                                                                  |               |            |               |            |               |
| Currently married                        | 6.7                                                              | 35,068        | 7.5        | 19,516        | 7.0        | 54,584        |
| Widowed                                  | 12.7                                                             | 3,827         | 9.7        | 10,330        | 10.4       | 14,157        |
| Divorced/Separated/Deserted/Others       | 5.4                                                              | 1,369         | 6.7        | 791           | 5.9        | 2,160         |
| <b>Living arrangement</b>                |                                                                  |               |            |               |            |               |
| Living alone                             | 12.3                                                             | 680           | 12.8       | 1,591         | 12.7       | 2,271         |
| Living with spouse and/or others         | 6.2                                                              | 4,324         | 8.1        | 5,980         | 7.3        | 10,304        |
| Living with spouse and children          | 6.8                                                              | 30,099        | 7.2        | 13,306        | 6.9        | 43,405        |
| Living with children and others          | 11.0                                                             | 4,054         | 8.5        | 8,165         | 9.2        | 12,219        |
| Living with others only                  | 6.7                                                              | 1,107         | 11.1       | 1,595         | 9.4        | 2,702         |
| <b>Religion</b>                          |                                                                  |               |            |               |            |               |
| Hindu                                    | 7.1                                                              | 29,549        | 8.2        | 22,459        | 7.6        | 52,008        |
| Muslim                                   | 8.7                                                              | 4,866         | 9.3        | 3,622         | 9.0        | 8,488         |
| Christian                                | 2.6                                                              | 4,028         | 6.2        | 3,042         | 4.2        | 7,070         |
| Others                                   | 8.8                                                              | 1,821         | 8.1        | 1,514         | 8.5        | 3,335         |
| <b>Caste/tribe</b>                       |                                                                  |               |            |               |            |               |
| Scheduled tribe                          | 4.2                                                              | 7,267         | 4.7        | 5,025         | 4.4        | 12,292        |
| Scheduled caste                          | 7.6                                                              | 6,820         | 9.7        | 5,005         | 8.6        | 11,825        |
| Other backward class                     | 7.5                                                              | 15,113        | 8.7        | 11,594        | 8.1        | 26,707        |
| None of the above                        | 7.2                                                              | 11,064        | 7.6        | 9,013         | 7.4        | 20,077        |
| <b>Education</b>                         |                                                                  |               |            |               |            |               |
| No schooling                             | 8.7                                                              | 16,116        | 9.2        | 16,388        | 9.0        | 32,504        |
| Less than 5 years complete               | 8.6                                                              | 4,214         | 9.4        | 3,697         | 9.0        | 7,911         |
| 5-9 years complete                       | 6.3                                                              | 10,779        | 7.0        | 5,882         | 6.6        | 16,661        |
| 10 or more years complete                | 4.4                                                              | 9,155         | 5.2        | 4,670         | 4.7        | 13,825        |
| <b>Work status</b>                       |                                                                  |               |            |               |            |               |
| Currently working                        | 6.2                                                              | 23,438        | 7.5        | 9,191         | 6.6        | 32,629        |
| Worked in past but currently not working | 13.4                                                             | 4,487         | 9.5        | 12,907        | 10.5       | 17,394        |
| Never worked                             | 6.7                                                              | 12,339        | 7.2        | 8,539         | 6.9        | 20,878        |
| <b>MPCE quintile</b>                     |                                                                  |               |            |               |            |               |
| Poorest                                  | 6.2                                                              | 7,573         | 8.7        | 6,279         | 7.4        | 13,852        |
| Poorer                                   | 6.5                                                              | 7,949         | 7.5        | 6,304         | 7.0        | 14,253        |
| Middle                                   | 7.2                                                              | 8,017         | 7.8        | 6,255         | 7.4        | 14,272        |
| Richer                                   | 6.4                                                              | 8,416         | 8.3        | 6,030         | 7.2        | 14,446        |
| Richest                                  | 9.7                                                              | 8,309         | 9.4        | 5,769         | 9.6        | 14,078        |
| <b>Total</b>                             | <b>7.2</b>                                                       | <b>40,264</b> | <b>8.3</b> | <b>30,637</b> | <b>7.7</b> | <b>70,901</b> |

Notes

\*Including spouse irrespective of age.

<sup>1</sup> Based on Composite International Diagnostic Interview (CIDI-SF); respondent who reported that they felt sad, blue or depressed for two-weeks' period during last 12 months for all the day long or most of the day or either reported loss of interest for two weeks' period during the last 12 months for all day long or most of the day in hobbies, work and other activities that usually give pleasure. The probable major depression = CIDI-SF score ≥ 3.

Table 10.10 presents cross-state differences in the prevalence of probable major depression based on CIDI-SF in India. The prevalence of probable major depression among older adults age 45 and above varies from less than 1% in Mizoram (0.8%) to 15% in Madhya Pradesh. More than one in ten of the elderly age 60 and above have probable major depression in Madhya Pradesh (17%), Uttar Pradesh (14%), Delhi (11%), Bihar (10%), and Goa (10%), suggesting markedly higher burden of undiagnosed depression in these states.

**Table 10.10 Prevalence (%) of measured probable major depression based on CIDI-SF scale among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Measured probable major depression based on CIDI-SF <sup>1</sup> |               |            |               |            |               |
|---------------------------|------------------------------------------------------------------|---------------|------------|---------------|------------|---------------|
|                           | Age 45-59*                                                       | Number        | Age ≥ 60   | Number        | Total      | Number        |
| <b>India</b>              | <b>7.2</b>                                                       | <b>40,264</b> | <b>8.3</b> | <b>30,637</b> | <b>7.7</b> | <b>70,901</b> |
| <b>North</b>              |                                                                  |               |            |               |            |               |
| Chandigarh                | 9.2                                                              | 609           | 7.1        | 371           | 8.4        | 980           |
| Delhi                     | 6.4                                                              | 821           | 10.5       | 492           | 7.9        | 1,313         |
| Haryana                   | 6.6                                                              | 1,041         | 5.5        | 831           | 6.1        | 1,872         |
| Himachal Pradesh          | 4.3                                                              | 758           | 6.1        | 607           | 5.2        | 1,365         |
| Jammu & Kashmir           | 3.5                                                              | 876           | 4.6        | 711           | 4.1        | 1,587         |
| Punjab                    | 8.1                                                              | 1,089         | 9.2        | 988           | 8.6        | 2,077         |
| Rajasthan                 | 6.6                                                              | 1,157         | 5.6        | 1,065         | 6.1        | 2,222         |
| Uttarakhand               | 5.4                                                              | 714           | 7.4        | 636           | 6.4        | 1,350         |
| <b>Central</b>            |                                                                  |               |            |               |            |               |
| Chhattisgarh              | 4.8                                                              | 1,269         | 3.6        | 759           | 4.3        | 2,028         |
| Madhya Pradesh            | 12.9                                                             | 1,581         | 17.0       | 1,287         | 14.9       | 2,868         |
| Uttar Pradesh             | 12.8                                                             | 2,372         | 14.0       | 2,087         | 13.4       | 4,459         |
| <b>East</b>               |                                                                  |               |            |               |            |               |
| Bihar                     | 10.1                                                             | 1,697         | 10.3       | 1,767         | 10.2       | 3,464         |
| Jharkhand                 | 5.8                                                              | 1,287         | 6.5        | 1,149         | 6.2        | 2,436         |
| Odisha                    | 4.4                                                              | 1,662         | 4.5        | 1,207         | 4.5        | 2,869         |
| West Bengal               | 5.7                                                              | 2,361         | 7.8        | 1,496         | 6.6        | 3,857         |
| <b>Northeast</b>          |                                                                  |               |            |               |            |               |
| Arunachal Pradesh         | 2.2                                                              | 895           | [1.9]      | 316           | 2.1        | 1,211         |
| Assam                     | 5.2                                                              | 1,536         | 6.8        | 794           | 5.8        | 2,330         |
| Manipur                   | 1.7                                                              | 753           | 1.0        | 585           | 1.4        | 1,338         |
| Meghalaya                 | [0.9]                                                            | 549           | 1.7        | 409           | 1.2        | 958           |
| Mizoram                   | 1.0                                                              | 708           | [0.6]      | 490           | 0.8        | 1,198         |
| Nagaland                  | 3.3                                                              | 704           | 3.0        | 592           | 3.2        | 1,296         |
| Tripura                   | 3.7                                                              | 728           | 3.6        | 454           | 3.7        | 1,182         |
| <b>West</b>               |                                                                  |               |            |               |            |               |
| Dadra & Nagar Haveli      | 2.6                                                              | 618           | 3.3        | 438           | 2.8        | 1,056         |
| Daman & Diu               | 3.3                                                              | 544           | 3.1        | 417           | 3.2        | 961           |
| Goa                       | 9.0                                                              | 777           | 10.0       | 616           | 9.5        | 1,393         |
| Gujarat                   | 3.4                                                              | 1,305         | 3.1        | 950           | 3.3        | 2,255         |
| Maharashtra               | 7.4                                                              | 2,156         | 8.8        | 1,757         | 8.1        | 3,913         |
| <b>South</b>              |                                                                  |               |            |               |            |               |
| Andaman & Nicobar Islands | 0.8                                                              | 714           | 2.3        | 494           | 1.4        | 1,208         |
| Andhra Pradesh            | 4.1                                                              | 1,547         | 3.7        | 1,082         | 3.9        | 2,629         |
| Karnataka                 | 7.7                                                              | 1,397         | 6.6        | 972           | 7.2        | 2,369         |
| Kerala                    | 7.0                                                              | 1,256         | 5.7        | 1,162         | 6.3        | 2,418         |
| Lakshadweep               | 1.5                                                              | 629           | 3.8        | 495           | 2.6        | 1,124         |
| Puducherry                | 1.8                                                              | 778           | 3.9        | 619           | 2.8        | 1,397         |
| Tamil Nadu                | 3.0                                                              | 1,984         | 5.2        | 1,504         | 4.0        | 3,488         |
| Telangana                 | 4.3                                                              | 1,392         | 4.9        | 1,038         | 4.5        | 2,430         |

Notes

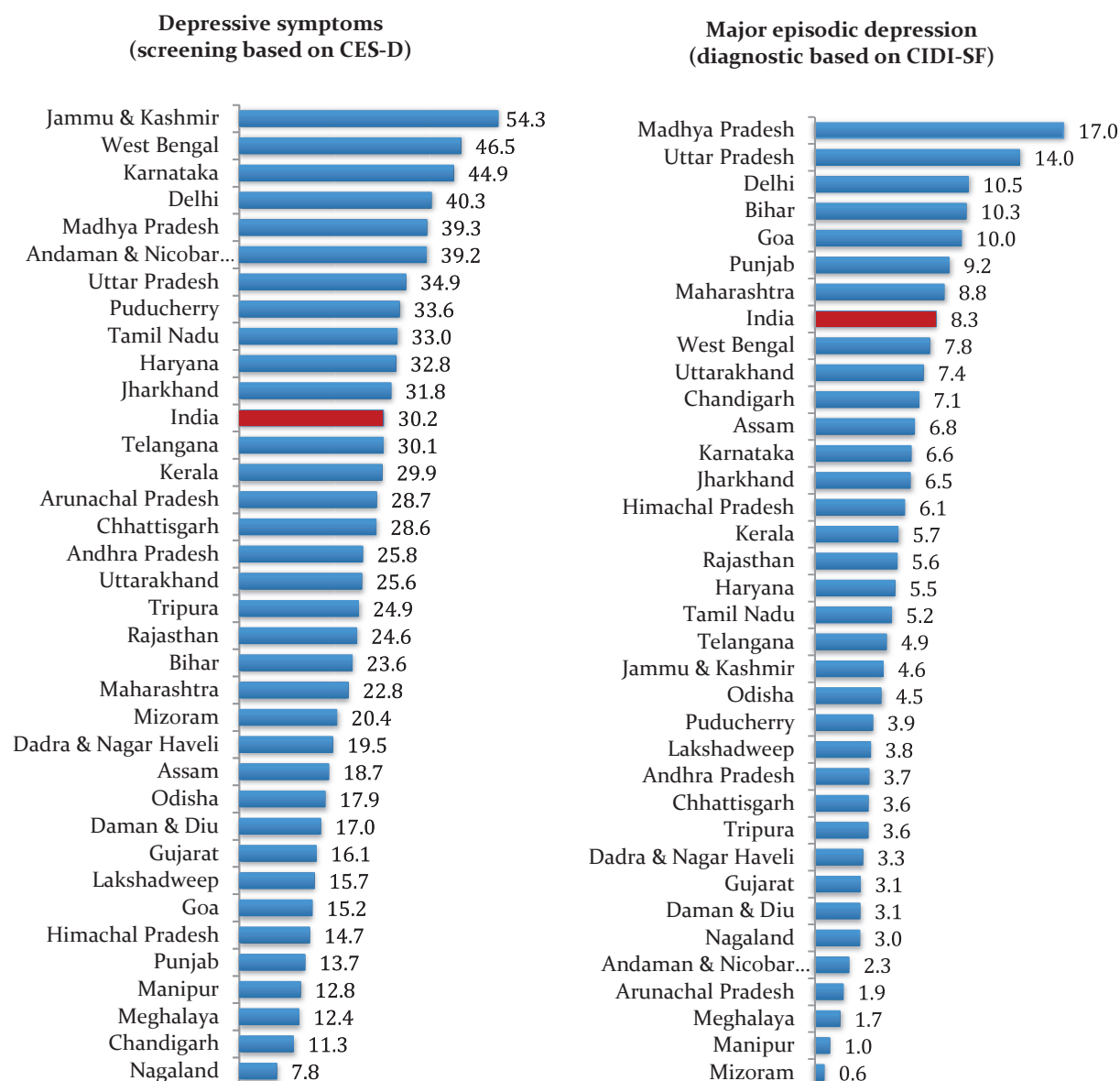
\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

<sup>1</sup> Based on Composite International Diagnostic Interview (CIDI-SF); respondent who reported that they felt sad, blue or depressed for two-weeks’ period during last 12 months for all the day long or most of the day or either reported loss of interest for two weeks’ period during the last 12 months for all day long or most of the day in hobbies, work and other activities that usually give pleasure. The probable major depression = CIDI-SF score ≥ 3.



Figure 10.9 compares the prevalence rates of depressive symptoms and probable major depression among elderly age 60 and above across states/UTs. Overall in India, 30% of the elderly age 60 and above screened positive for depressive symptoms (based on CES-D), compared to 8% of elderly who are screen positive for probable major depression (based on CIDI-SF). This pattern of difference between the prevalence of depressive symptoms and probable major depression is consistent across the states/UTs of India.

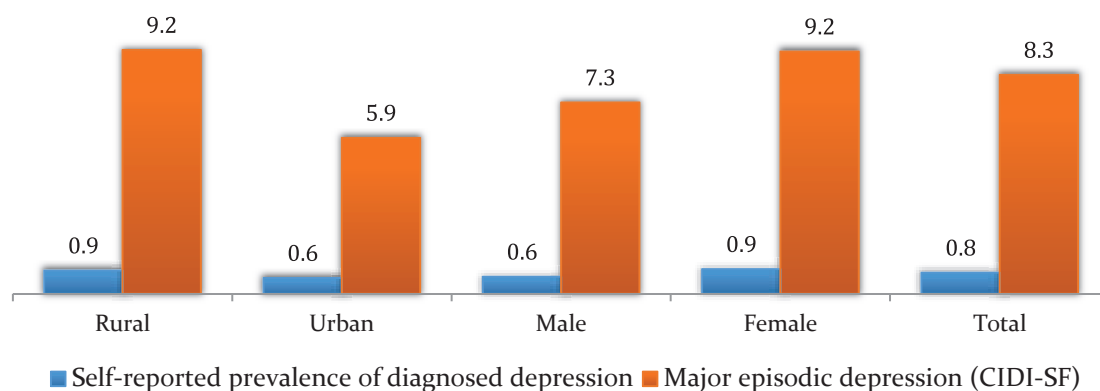
**Figure 10.9 Percentage of elderly age 60 and above with depressive symptoms and probable major depression, states/UTs, LASI Wave 1, 2017-18**



### 10.2.3 Self-reported diagnosed depression vs probable major depression

Figure 10.10 compares self-reported prevalence of diagnosed depression and the prevalence of probable major depression (measured) based on the CIDI-SF scale. The prevalence of probable major depression among the elderly age 60 and above (8.3%) is ten times higher than self-reported prevalence of diagnosed depression (0.8%). This pattern is consistent across place of residence and sex, suggesting a higher burden of undiagnosed depression.

**Figure 10.10 Self-reported prevalence (%) of diagnosed depression and probable major depression (measured based on CIDI-SF) among the elderly age 60 and above, India, LASI Wave 1, 2017-18**



### Key findings: depression

- Overall, the prevalence of probable major depression among older adults age 45 and above in India is 8%. The prevalence of probable major depression among the elderly age 60 and above (8.3%) is ten times higher than self-reported prevalence of diagnosed depression (0.8%) suggesting a higher burden of undiagnosed depression.
- The prevalence of probable major depression increases with age. Elderly women, those residing in rural areas, the widowed, those living alone, and those with lower education are more likely to have diagnosable probable major depression.
- More than one in ten elderly age 60 and above have probable major depression in the states/UTs of Madhya Pradesh (17%), Uttar Pradesh (14%), Delhi (11%), Bihar (10%), and Goa (10%).

## 11. FUNCTIONAL HEALTH: FUNCTIONAL LIMITATION AND HELPERS

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Healthy ageing is the process of developing and maintaining bodily functional ability that enables well-being in older age (WHO, 2015). Functional capacity is defined as the individual's ability to perform survival-related activities in an autonomous and independent manner (Freitas et al., 2012). The human ageing process is dynamic and progressive and triggers declines in the functional capacity with age. Functional health measurement provides valid, reliable, and comparable data on level of functioning and disability. Functioning and disability are multi-dimensional concepts related to human body functions and structures and the impairments thereof; the activities of people and the activity limitations they experience; the participation or involvement of people in all areas of life, as well as the participation restrictions they experience functioning as a member of society; and the environmental factors which affect those experiences and whether these factors are facilitators or barriers (WHO, 2001). A person's level of functioning is a dynamic interaction between health conditions, environmental factors, and personal factors.

Body functions are physiological functioning of the body systems, including psychological functions. Body structures are anatomical parts of the body, including organs, limbs, and their components. Activity is the execution of a task or action by an individual. Participation is involvement in a life situation. Environmental factors are comprised of the physical, social, and attitudinal environments in which people live and conduct their lives.

Disability is an umbrella term for impairments, activity limitations, and participation restrictions. It denotes the negative aspects of the interaction between a person's health conditions and individual's contextual factors (environmental and personal factors). As per the 2011 census, 2.2% of the total population in India is disabled. Disability in movement (locomotor) is the most common form of impairment, followed by disability in seeing/in hearing. In 2016, the elderly (age 60 and above) with disabilities constituted 21% of the total disabled population in India (GoI, 2016).

Assessing functional health is a key objective of LASI, and this chapter presents the prevalence of physical or mental impairment, mobility restrictions, work limiting health conditions, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) and the use of aids/ supportive devices and helpers.

### 11.1 PHYSICAL AND MENTAL IMPAIRMENTS

Impairment is a loss or abnormality of psychological, physiological, or anatomical structure or function. The LASI respondents were asked if they had any form of impairments, including physical (such as locomotor); hearing; visual; speech (such as speech production, language comprehension); and mental (such as intellectual, cognition, or learning) impairments.

Table 11.1 presents the percentage of older adults with self-reported physical or mental impairments by background characteristics. Overall, 8% of older adults age 45 and above in India reported having at least one form of impairment. Among older adults age 45 and above in India, the prevalence of locomotor, visual, hearing, mental, and speech impairment is 5%, 3%, 2%, 2%, and 1%, respectively.

The prevalence of any form of impairment is almost twice as high among elderly age 60 and above is 11% as that among older adults age 45-59 (6%). Also, among elderly age 60 and above, the major disability reported is locomotor impairment (6%), followed by visual impairment (4%), mental and hearing impairment (3% each), and speech impairment (0.9%). The prevalence of any form of impairment among elderly age 60 and above is slightly higher in rural compared to urban areas. Among elderly age 60 and above, the prevalence of locomotor, mental, and visual impairments are slightly higher among women than men and higher among those who are divorced/separated/deserted compared to those currently married; this proportion decreases with increase in educational attainment. A lower proportion of currently working elderly age 60 and above reported having any form of impairment compared to past workers and those who had never worked. The impairment does not differ much by MPCE quintile.

Table 11.2 presents the percentage of older adults age 45 and above with physical or mental impairments by states/UTs. The percentage of older adults age 45 and above with any form of impairment is much higher in the states/UTs of Dadra & Nagar Haveli (18%) and Karnataka (19%). More than 15% of the elderly age 60 and above reported having at least one impairment in Karnataka (27%), Dadra & Nagar Haveli (23%), Odisha (19%), and Tamil Nadu (18%).

More than one in ten elderly age 60 and above in the states/UTs of Jharkhand (10%), Odisha (12%), Dadra & Nagar Haveli (13%), and Karnataka (24%) reported having locomotor impairment. Among elderly age 60 and above, the prevalence of self-reported mental impairment is highest in the states/UTs of Tamil Nadu (10%), Madhya Pradesh (6%), Karnataka (5%), Rajasthan (5%), and Puducherry (5%); the reported prevalence of hearing impairment is highest in Dadra & Nagar Haveli (9%), Odisha (6%), and Karnataka (5%). Around 2% of the elderly age 60 and above in the states/UTs of Madhya Pradesh (2.5%), Dadra & Nagar Haveli (1.9%), Karnataka (1.8%), Manipur (1.6%), and West Bengal (1.5%) reported having speech impairment. One in ten elderly age 60 and above in Dadra & Nagar Haveli (12%), Jharkhand (10%) and Karnataka (10%) reported visual impairment.

**Table 11.1 Percentage of older adults with physical or mental impairment by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Physical or mental impairment |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        |                |
|---------------------------------------|-------------------------------|--------|--------|---------|--------|----------------|--------|-----------|--------|--------|----------|--------|----------------|--------|-----------|--------|--------|---------|--------|----------------|
|                                       | Age 45-59*                    |        |        |         |        |                |        |           |        |        | Age ≥ 60 |        |                |        |           |        |        |         |        |                |
|                                       | Locomotor                     | Mental | Visual | Hearing | Speech | Any impairment | Number | Locomotor | Mental | Visual | Hearing  | Speech | Any impairment | Number | Locomotor | Mental | Visual | Hearing | Speech | Any impairment |
| Place of residence                    |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        |                |
|                                       | 3.7                           | 1.7    | 2.0    | 0.7     | 0.3    | 5.9            | 25,718 | 5.9       | 3.3    | 4.6    | 2.9      | 1.0    | 10.9           | 20,656 | 4.7       | 2.4    | 3.2    | 1.7     | 0.6    | 8.3            |
| Urban                                 | 3.4                           | 1.5    | 1.4    | 0.4     | 0.2    | 5.4            | 14,886 | 5.9       | 2.2    | 2.7    | 1.9      | 0.7    | 9.3            | 10,667 | 4.4       | 1.8    | 1.9    | 1.0     | 0.4    | 7.0            |
| Sex                                   |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        |                |
|                                       | 4.6                           | 1.7    | 1.8    | 0.6     | 0.4    | 7.0            | 15,398 | 5.8       | 2.6    | 3.9    | 2.7      | 0.9    | 10.5           | 15,015 | 5.2       | 2.2    | 2.9    | 1.6     | 0.6    | 8.8            |
| Female                                | 3.0                           | 1.5    | 1.7    | 0.6     | 0.2    | 5.0            | 25,206 | 6.0       | 3.3    | 4.2    | 2.5      | 0.9    | 10.4           | 16,308 | 4.2       | 2.3    | 2.8    | 1.4     | 0.5    | 7.2            |
| Marital status                        |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        |                |
|                                       | 3.5                           | 1.4    | 1.8    | 0.5     | 0.2    | 5.5            | 35,320 | 5.2       | 2.5    | 3.6    | 2.3      | 0.8    | 9.4            | 19,831 | 4.1       | 1.8    | 2.5    | 1.2     | 0.4    | 7.0            |
| Currently married                     | 3.5                           | 2.3    | 1.7    | 0.8     | 0.4    | 6.2            | 3,855  | 6.9       | 3.7    | 4.7    | 3.1      | 1.1    | 12.0           | 10,672 | 6.1       | 3.3    | 4.0    | 2.5     | 1.0    | 10.6           |
| Widowed                               | 5.0                           | 6.0    | 1.7    | 0.6     | 1.4    | 10.2           | 1,429  | 7.1       | 5.7    | 6.6    | 1.7      | 0.5    | 15.2           | 820    | 5.8       | 5.8    | 3.5    | 1.0     | 1.1    | 12.0           |
| Divorced/ Separated/ Deserted/ Others |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        | 2,249          |
| Living arrangement                    |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        |                |
|                                       | 5.1                           | 2.3    | 1.9    | 0.5     | [0.4]  | 7.5            | 687    | 6.1       | 4.8    | 5.1    | 2.5      | 0.5    | 13.0           | 1,616  | 5.9       | 4.2    | 4.4    | 2.0     | 0.5    | 11.8           |
| Living alone                          | 3.3                           | 1.9    | 2.1    | 0.7     | 0.4    | 6.0            | 4,484  | 5.6       | 3.0    | 4.0    | 2.6      | 0.6    | 10.3           | 6,132  | 4.6       | 2.5    | 3.2    | 1.8     | 0.5    | 8.5            |
| Living with spouse and/or others      | 3.6                           | 1.3    | 1.7    | 0.5     | 0.1    | 5.5            | 30,183 | 5.0       | 2.1    | 3.3    | 2.1      | 0.7    | 8.8            | 13,460 | 4.0       | 1.6    | 2.2    | 1.0     | 0.3    | 6.5            |
| Living with spouse and children       |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        | 43,643         |
| Living with children and others       | 3.3                           | 2.3    | 1.4    | 0.8     | 0.5    | 5.9            | 4,076  | 6.8       | 3.1    | 4.4    | 2.9      | 1.0    | 10.9           | 8,412  | 5.8       | 2.9    | 3.5    | 2.3     | 0.9    | 9.5            |
| Living with others only               | 4.3                           | 5.3    | 2.1    | 1.1     | 1.8    | 9.8            | 1,174  | 8.0       | 7.2    | 7.5    | 5.3      | 3.0    | 18.2           | 1,703  | 6.6       | 6.5    | 5.4    | 3.7     | 2.6    | 15.1           |
| Religion                              |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        | 2,877          |
|                                       | 3.3                           | 1.7    | 1.8    | 0.6     | 0.3    | 5.6            | 29,804 | 5.8       | 3.1    | 4.1    | 2.7      | 0.9    | 10.5           | 22,938 | 4.5       | 2.3    | 2.9    | 1.6     | 0.6    | 7.9            |
| Hindu                                 | 5.2                           | 1.0    | 1.4    | 0.4     | 0.1    | 6.5            | 4,912  | 6.2       | 2.4    | 3.3    | 2.4      | 1.0    | 9.9            | 3,714  | 5.6       | 1.6    | 2.2    | 1.3     | 0.5    | 8.0            |
| Muslim                                | 4.2                           | 3.8    | 2.1    | 0.3     | 0.5    | 8.6            | 4,055  | 10.7      | 3.7    | 8.8    | 2.9      | 0.7    | 16.9           | 3,136  | 7.0       | 3.7    | 5.0    | 1.4     | 0.6    | 12.3           |
| Christian                             | [2.6]                         | 0.8    | 0.5    | 0.3     | 0.6    | 4.0            | 1,833  | 2.3       | 1.2    | 1.6    | 1.3      | 0.8    | 5.1            | 1,535  | 2.5       | 1.0    | 1.1    | 0.8     | 0.7    | 4.5            |
| Caste/tribe                           |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        | 3,368          |
|                                       | 3.0                           | 1.2    | 1.4    | 0.4     | 0.4    | 4.5            | 7,320  | 6.0       | 3.0    | 5.1    | 3.3      | 1.5    | 10.6           | 5,151  | 4.3       | 2.0    | 3.0    | 1.7     | 0.9    | 7.2            |
| Scheduled tribe                       | 2.9                           | 1.6    | 1.7    | 0.8     | 0.4    | 5.1            | 6,877  | 5.8       | 3.2    | 4.4    | 3.0      | 1.0    | 11.2           | 5,123  | 4.2       | 2.3    | 2.9    | 1.8     | 0.7    | 7.9            |
| Scheduled caste                       | 4.5                           | 2.0    | 1.8    | 0.6     | 0.2    | 7.0            | 15,228 | 6.8       | 3.4    | 4.2    | 2.5      | 0.7    | 11.9           | 11,828 | 5.5       | 2.7    | 2.9    | 1.4     | 0.4    | 9.2            |
| Other backward class                  |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        | 27,056         |
| None of the above                     | 2.6                           | 1.0    | 1.9    | 0.5     | 0.2    | 4.4            | 11,179 | 4.4       | 2.1    | 3.3    | 2.2      | 1.0    | 7.6            | 9,221  | 3.4       | 1.5    | 2.5    | 1.3     | 0.6    | 6.0            |
|                                       |                               |        |        |         |        |                |        |           |        |        |          |        |                |        |           |        |        |         |        | 20,400         |

continued

continued

| Background characteristics               | Physical or mental impairment |            |            |            |            |                |               |            |            |            |            |            |                |               |
|------------------------------------------|-------------------------------|------------|------------|------------|------------|----------------|---------------|------------|------------|------------|------------|------------|----------------|---------------|
|                                          | Age 45-59*                    |            |            |            |            |                |               | Age ≥ 60   |            |            |            |            |                |               |
|                                          | Locomotor                     | Mental     | Visual     | Hearing    | Speech     | Any impairment | Number        | Locomotor  | Mental     | Visual     | Hearing    | Speech     | Any impairment | Total         |
| <b>Education</b>                         |                               |            |            |            |            |                |               |            |            |            |            |            |                |               |
| No schooling                             | 4.4                           | 1.9        | 1.9        | 0.7        | 0.3        | 6.9            | 16,259        | 6.6        | 3.4        | 4.4        | 2.8        | 0.9        | 11.5           | 16,831        |
| Less than 5 years complete               | 4.3                           | 1.3        | 1.8        | 0.8        | 0.3        | 6.1            | 4,255         | 6.2        | 3.0        | 4.9        | 2.9        | 1.3        | 11.0           | 3,767         |
| 5-9 years complete                       | 3.1                           | 1.7        | 2.1        | 0.6        | 0.3        | 5.6            | 10,855        | 5.2        | 2.7        | 3.7        | 2.3        | 0.7        | 9.5            | 5,982         |
| 10 or more years complete                | 2.1                           | 1.1        | 1.1        | 0.3        | 0.1        | 3.4            | 9,235         | 3.5        | 1.8        | 2.6        | 1.7        | 0.7        | 6.8            | 4,743         |
| <b>Work status</b>                       |                               |            |            |            |            |                |               |            |            |            |            |            |                |               |
| Currently working                        | 2.9                           | 1.2        | 1.7        | 0.5        | 0.1        | 4.7            | 23,579        | 4.6        | 1.8        | 3.2        | 1.5        | 0.3        | 7.6            | 9,266         |
| Worked in past but currently not working | 9.7                           | 3.3        | 3.0        | 1.1        | 0.7        | 13.8           | 4,559         | 6.7        | 3.8        | 5.0        | 3.5        | 1.3        | 12.7           | 13,310        |
| Never worked                             | 2.3                           | 1.7        | 1.4        | 0.4        | 0.3        | 4.5            | 12,466        | 6.1        | 3.1        | 3.6        | 2.4        | 1.0        | 10.2           | 8,747         |
| <b>MPCE quintile</b>                     |                               |            |            |            |            |                |               |            |            |            |            |            |                |               |
| Poorest                                  | 2.4                           | 1.2        | 1.5        | 0.7        | 0.2        | 4.2            | 7,640         | 6.1        | 3.0        | 3.8        | 2.2        | 0.9        | 10.8           | 6,459         |
| Poorer                                   | 3.1                           | 2.0        | 1.7        | 0.6        | 0.3        | 5.8            | 8,021         | 6.2        | 2.9        | 4.5        | 2.6        | 1.5        | 11.1           | 6,447         |
| Middle                                   | 3.6                           | 1.8        | 1.9        | 0.7        | 0.2        | 6.1            | 8,088         | 5.6        | 3.2        | 3.7        | 2.9        | 0.7        | 9.9            | 6,383         |
| Richer                                   | 3.5                           | 1.6        | 1.8        | 0.4        | 0.2        | 5.4            | 8,479         | 5.7        | 3.0        | 4.1        | 2.7        | 0.7        | 10.3           | 6,147         |
| Richest                                  | 5.3                           | 1.5        | 1.9        | 0.4        | 0.2        | 7.2            | 8,376         | 5.9        | 2.7        | 4.4        | 2.5        | 0.8        | 10.0           | 5,887         |
| <b>Total</b>                             | <b>3.6</b>                    | <b>1.6</b> | <b>1.8</b> | <b>0.6</b> | <b>0.3</b> | <b>5.7</b>     | <b>40,604</b> | <b>5.9</b> | <b>3.0</b> | <b>4.1</b> | <b>2.6</b> | <b>0.9</b> | <b>10.5</b>    | <b>31,323</b> |

Note

\* Including spouse irrespective of age



**Table 11.2 Percentage of older adults with physical or mental impairment, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Physical or mental impairment |        |        |         |        |                |        |           |        |        |         |        |                |        |        |
|-----------------------|-------------------------------|--------|--------|---------|--------|----------------|--------|-----------|--------|--------|---------|--------|----------------|--------|--------|
|                       | Age 45-59*                    |        |        |         |        |                |        | Age ≥ 60  |        |        |         |        |                |        |        |
|                       | Locomotor                     | Mental | Visual | Hearing | Speech | Any impairment | Number | Locomotor | Mental | Visual | Hearing | Speech | Any impairment | Number |        |
| India                 | 3.6                           | 1.6    | 1.8    | 0.6     | 0.3    | 5.7            | 40,604 | 5.9       | 3.0    | 4.1    | 2.6     | 0.9    | 10.5           | 31,323 | 71,927 |
| North                 |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |        |
| Chandigarh            | 1.1                           | [0.2]  | [0.1]  | [0.2]   | -      | 1.6            | 618    | 1.3       | 2.0    | [0.6]  | [1.1]   | [0.4]  | 4.0            | 383    | 1,001  |
| Delhi                 | 0.8                           | [0.4]  | [0.3]  | [0.1]   | [0.6]  | 1.8            | 822    | 1.6       | 1.5    | [0.8]  | [0.2]   | [0.5]  | 3.4            | 494    | 1,316  |
| Haryana               | 1.2                           | 1.0    | [0.2]  | 0.1     | -      | 2.4            | 1,048  | 1.2       | 0.8    | 0.5    | [0.3]   | [0.3]  | 2.5            | 847    | 1,899  |
| Himachal Pradesh      | 1.1                           | 0.2    | [0.2]  | [0.5]   | 0.7    | 1.6            | 764    | 1.5       | 1.3    | [0.4]  | [0.5]   | [0.2]  | 2.6            | 617    | 1,381  |
| Jammu & Kashmir       | 2.3                           | 0.8    | [0.2]  | 0.5     | [0.2]  | 3.3            | 881    | 5.2       | 1.8    | 2.4    | 2.8     | [0.8]  | 8.7            | 730    | 1,611  |
| Punjab                | 2.2                           | 0.3    | [0.3]  | 0.2     | 0.3    | 2.8            | 1,102  | 2.5       | 1.6    | 0.7    | 0.6     | 0.8    | 4.4            | 997    | 2,099  |
| Rajasthan             | 1.0                           | 1.7    | 3.2    | 1.1     | [0.1]  | 4.3            | 1,161  | 1.7       | 5.3    | 8.0    | 3.5     | [0.3]  | 10.2           | 1,077  | 2,238  |
| Uttarakhand           | [0.4]                         | [0.5]  | 1.5    | 1.6     | [0.2]  | 3.7            | 716    | 1.9       | 0.7    | 2.8    | 2.5     | [0.3]  | 6.0            | 641    | 1,357  |
| Central               |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |        |
| Chhattisgarh          | 0.9                           | [0.4]  | 0.4    | 0.4     | [0.2]  | 2.0            | 1,274  | 3.3       | 1.2    | 2.6    | 2.2     | 0.8    | 6.8            | 779    | 2,053  |
| Madhya Pradesh        | 4.3                           | 1.1    | 2.8    | 0.4     | [0.1]  | 6.3            | 1,596  | 6.0       | 5.7    | 6.1    | 4.1     | 2.5    | 12.7           | 1,312  | 2,908  |
| Uttar Pradesh         | 4.3                           | 1.5    | 4.5    | 0.8     | -      | 7.2            | 2,393  | 5.7       | 2.7    | 5.2    | 2.5     | 0.7    | 9.8            | 2,165  | 4,558  |
| East                  |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |        |
| Bihar                 | 2.2                           | 1.3    | 1.2    | 0.6     | [0.1]  | 4.1            | 1,707  | 4.0       | 1.4    | 2.9    | 2.0     | 0.8    | 7.8            | 1,805  | 3,512  |
| Jharkhand             | 7.7                           | 0.9    | 6.7    | [0.2]   | -      | 9.0            | 1,292  | 10.3      | 0.3    | 9.9    | 1.7     | 0.3    | 12.6           | 1,166  | 2,458  |
| Odisha                | 3.6                           | 1.5    | 1.3    | 1.2     | [0.2]  | 6.3            | 1,674  | 12.1      | 4.1    | 6.0    | 5.5     | 1.3    | 18.8           | 1,230  | 2,904  |
| West Bengal           | 0.9                           | 0.6    | 0.3    | 0.4     | 0.4    | 2.0            | 2,382  | 3.3       | 2.4    | 2.0    | 1.7     | 1.5    | 6.1            | 1,538  | 3,920  |
| Northeast             |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |        |
| Arunachal Pradesh     | 0.4                           | [0.3]  | [0.2]  | -       | 0.4    | 0.8            | 895    | 2.1       | -      | [0.3]  | 2.0     | [0.3]  | 4.2            | 318    | 1,213  |
| Assam                 | 1.4                           | 1.5    | 1.2    | 0.4     | -      | 2.8            | 1,545  | 3.5       | 3.2    | 2.0    | 1.4     | [0.7]  | 6.1            | 814    | 2,359  |
| Manipur               | 1.1                           | 0.2    | [0.4]  | -       | [0.3]  | 1.2            | 759    | 3.4       | 0.9    | 1.1    | 1.1     | 1.6    | 5.1            | 605    | 1,364  |
| Meghalaya             | [0.2]                         | [1.0]  | [0.2]  | [0.7]   | [0.1]  | 2.0            | 556    | [0.7]     | -      | [1.0]  | 1.6     | [0.1]  | 2.3            | 411    | 967    |
| Mizoram               | 2.7                           | 0.8    | 4.0    | 0.3     | [0.4]  | 6.3            | 713    | 3.3       | 2.2    | 2.6    | 3.9     | [0.4]  | 7.7            | 531    | 1,244  |
| Nagaland              | [0.4]                         | [0.4]  | -      | [0.3]   | [0.4]  | 0.7            | 708    | 2.6       | 0.8    | 0.8    | 1.6     | [0.9]  | 4.5            | 607    | 1,315  |
| Tripura               | 1.9                           | [0.5]  | 1.8    | 0.8     | [0.6]  | 4.6            | 732    | 2.2       | 2.0    | 3.3    | 3.9     | [0.5]  | 8.7            | 459    | 1,191  |
| West                  |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |        |
| Dadra & Nagar Haveli  | 7.0                           | [0.6]  | 8.4    | 3.0     | 0.9    | 14.0           | 631    | 12.9      | 2.2    | 11.6   | 9.3     | 1.9    | 23.0           | 445    | 1,076  |
| Daman & Diu           | 7.5                           | 1.8    | 1.5    | 0.6     | [1.0]  | 9.0            | 555    | 6.8       | 1.7    | 2.7    | 2.8     | [0.2]  | 9.0            | 427    | 982    |
| Goa                   | 3.3                           | 0.7    | 9.0    | 1.2     | [0.3]  | 11.7           | 786    | 4.1       | 1.7    | 8.0    | 2.2     | [0.3]  | 12.7           | 634    | 1,420  |

continued

continued

| State/Union Territory     | Physical or mental impairment |        |        |         |        |                |        |           |        |        |         |        |                |        |
|---------------------------|-------------------------------|--------|--------|---------|--------|----------------|--------|-----------|--------|--------|---------|--------|----------------|--------|
|                           | Age 45-59*                    |        |        |         |        |                |        | Age ≥ 60  |        |        |         |        |                |        |
|                           | Locomotor                     | Mental | Visual | Hearing | Speech | Any impairment | Number | Locomotor | Mental | Visual | Hearing | Speech | Any impairment | Number |
| Gujarat                   | 6.0                           | 1.9    | 2.4    | 1.0     | 0.4    | 8.4            | 1,333  | 7.2       | 1.0    | 3.9    | 3.1     | 0.6    | 11.2           | 978    |
| Maharashtra               | 1.0                           | 0.6    | 0.3    | 0.2     | 0.5    | 2.1            | 2,173  | 1.0       | 1.1    | 0.7    | 1.7     | 0.9    | 4.1            | 1,780  |
| <b>South</b>              |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |
| Andaman & Nicobar Islands | [0.3]                         | 1.4    | [0.2]  | 0.4     | -      | 2.3            | 720    | 3.3       | 2.5    | 1.0    | 1.5     | 0.7    | 6.4            | 521    |
| Andhra Pradesh            | 4.2                           | 1.3    | 0.9    | 0.7     | 0.5    | 6.4            | 1,566  | 8.1       | 1.1    | 3.8    | 3.3     | 0.7    | 12.6           | 1,098  |
| Karnataka                 | 12.5                          | 2.4    | 3.1    | 0.7     | [0.2]  | 14.0           | 1,409  | 24.1      | 5.2    | 10.0   | 4.9     | 1.8    | 27.1           | 999    |
| Kerala                    | 0.7                           | 0.5    | 0.9    | [0.2]   | 0.5    | 2.0            | 1,274  | 2.8       | 1.0    | 1.3    | 1.4     | 0.4    | 5.2            | 1,201  |
| Lakshadweep               | [0.4]                         | [0.3]  | -      | -       | [0.4]  | 1.2            | 637    | 1.5       | -      | 0.7    | [0.6]   | 0.6    | 2.4            | 500    |
| Puducherry                | 1.0                           | 0.7    | 0.3    | [0.3]   | [0.1]  | 2.1            | 785    | 2.2       | 4.9    | 0.5    | 0.8     | 0.1    | 7.0            | 637    |
| Tamil Nadu                | 3.0                           | 6.9    | 0.8    | 0.4     | 0.4    | 9.4            | 1,993  | 6.2       | 9.8    | 4.7    | 2.5     | 0.5    | 17.9           | 1,529  |
| Telangana                 | 4.9                           | 1.3    | 1.6    | 1.3     | [0.3]  | 7.7            | 1,404  | 6.4       | 1.9    | 5.9    | 3.6     | 0.5    | 10.9           | 1,048  |
| <b>Total</b>              |                               |        |        |         |        |                |        |           |        |        |         |        |                |        |

Note

\* Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

## 11.2 MOBILITY RESTRICTIONS

Mobility is one of the most crucial factors determining functional capacity. Mobility refers to the physical ability to move, which is often necessary for participating in meaningful social, cultural, and physical activities; mobility is also important for accessing the public facilities and can be significant of self-care. As the musculoskeletal system deteriorates with age, mobility problems increase. This is one of the most significant of the changes that adversely affect the ability of older people to operate independently in their communities and to have contact with other people.

Respondents were asked if they had any difficulty doing any of the following activities: walking 100 yards, sitting for 2 hours or more, getting up from a chair after sitting for long periods, climbing one flight of stairs without resting, stooping, kneeling or crouching, reaching or extending arms above shoulder level (either arm), pulling or pushing large objects, lifting or carrying weights over 10 pounds (such as a heavy bag of groceries), and picking up a coin from a table. Only those problems that had lasted for more than three months were included in the assessment of mobility restriction.

Table 11.3 presents the self-reported prevalence of various mobility limitations among elderly age 60 and above by background characteristics. A higher proportion of elderly age 60 and above experienced difficulty in stooping, kneeling, or crouching (58%), followed by difficulty in climbing upstairs without resting (57%) and pulling/pushing large objects (53%). Picking up a coin is the least experienced mobility restriction (10%) among the elderly. Elderly women and rural elderly are more likely to have mobility restrictions compared with elderly men and urban elderly.

Table 11.4 presents cross-state variation in the self-reported prevalence of different mobility restrictions among elderly age 60 and above. In the states of Kerala, West Bengal, Tamil Nadu, Maharashtra and Jammu & Kashmir, a higher proportion of elderly age 60 and above reported having one or more mobility restrictions. Around one fifth of elderly have difficulty in picking up a coin in the states/UTs of Jammu & Kashmir (21%), Telangana (20%), Andhra Pradesh (19%), and Goa (18%).

**Table 11.3 Percentage of elderly age 60 and above with different mobility restrictions by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Different mobility restrictions among elderly age ≥ 60 |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
|------------------------------------------|--------------------------------------------------------|------------------------|--------------------------------------------|--------------------------|---------------------------------|-------------------------------------|--------------------------------|---------------------------------|-------------------|---------------|
|                                          | Walking 100 yards                                      | Sitting for long hours | Getting up from long time sitting position | Climbing without resting | Stooping, kneeling or crouching | Extending arms above shoulder level | Pulling/ pushing large objects | Lifting/ carrying heavy weights | Picking up a coin | Number        |
| <b>Place of residence</b>                |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Rural                                    | 34.7                                                   | 41.9                   | 44.6                                       | 57.6                     | 59.0                            | 21.4                                | 53.9                           | 40.5                            | 11.4              | 20,666        |
| Urban                                    | 34.8                                                   | 39.3                   | 42.1                                       | 55.4                     | 54.9                            | 20.2                                | 51.2                           | 39.5                            | 8.0               | 10,670        |
| <b>Sex</b>                               |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Male                                     | 28.8                                                   | 34.3                   | 37.4                                       | 50.3                     | 52.8                            | 16.6                                | 45.2                           | 31.9                            | 8.6               | 15,015        |
| Female                                   | 39.9                                                   | 47.2                   | 49.7                                       | 62.9                     | 62.2                            | 25.1                                | 60.1                           | 47.7                            | 12.0              | 16,321        |
| <b>Marital status</b>                    |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Currently married                        | 29.7                                                   | 36.7                   | 39.0                                       | 52.1                     | 54.3                            | 18.1                                | 46.9                           | 34.1                            | 8.5               | 19,835        |
| Widowed                                  | 43.4                                                   | 49.1                   | 52.7                                       | 65.4                     | 63.5                            | 26.5                                | 63.9                           | 50.6                            | 13.7              | 10,681        |
| Divorced/Separated/Deserted/ Others      | 31.0                                                   | 33.6                   | 35.5                                       | 53.2                     | 60.7                            | 15.4                                | 46.9                           | 39.0                            | 11.5              | 820           |
| <b>Living arrangement</b>                |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Living alone                             | 40.7                                                   | 48.6                   | 50.7                                       | 63.4                     | 64.6                            | 27.1                                | 62.2                           | 48.2                            | 13.3              | 1,618         |
| Living with spouse and/or others         | 30.8                                                   | 37.3                   | 40.1                                       | 53.2                     | 55.8                            | 18.5                                | 48.3                           | 36.1                            | 9.5               | 6,134         |
| Living with spouse and children          | 28.9                                                   | 36.2                   | 38.3                                       | 51.3                     | 53.4                            | 17.6                                | 46.1                           | 33.0                            | 7.7               | 13,461        |
| Living with children and others          | 43.4                                                   | 48.9                   | 52.8                                       | 65.6                     | 62.2                            | 25.5                                | 64.2                           | 50.5                            | 13.5              | 8,416         |
| Living with others only                  | 41.2                                                   | 44.4                   | 46.6                                       | 61.6                     | 67.6                            | 27.1                                | 56.9                           | 48.1                            | 15.3              | 1,707         |
| <b>Religion</b>                          |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Hindu                                    | 34.1                                                   | 40.7                   | 43.5                                       | 56.7                     | 57.7                            | 20.7                                | 52.7                           | 40.2                            | 10.5              | 22,945        |
| Muslim                                   | 39.8                                                   | 46.3                   | 49.1                                       | 60.6                     | 58.2                            | 23.9                                | 56.0                           | 41.9                            | 11.1              | 3,715         |
| Christian                                | 30.6                                                   | 35.0                   | 41.3                                       | 55.5                     | 62.8                            | 19.7                                | 50.9                           | 40.0                            | 9.0               | 3,137         |
| Others                                   | 35.6                                                   | 39.5                   | 39.0                                       | 53.7                     | 54.9                            | 22.1                                | 55.0                           | 36.2                            | 8.2               | 1,539         |
| <b>Caste/tribe</b>                       |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Scheduled tribe                          | 29.2                                                   | 34.4                   | 37.4                                       | 50.9                     | 50.5                            | 19.2                                | 49.2                           | 36.7                            | 9.7               | 5,154         |
| Scheduled caste                          | 34.5                                                   | 41.3                   | 43.4                                       | 58.7                     | 59.5                            | 21.7                                | 54.6                           | 41.1                            | 12.8              | 5,124         |
| Other backward class                     | 35.0                                                   | 41.3                   | 43.8                                       | 56.7                     | 57.8                            | 20.3                                | 52.3                           | 39.8                            | 10.0              | 11,828        |
| None of the above                        | 36.0                                                   | 42.6                   | 46.3                                       | 58.0                     | 58.6                            | 22.5                                | 54.4                           | 41.4                            | 9.7               | 9,230         |
| <b>Education</b>                         |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| No schooling                             | 37.7                                                   | 44.8                   | 47.1                                       | 60.1                     | 60.1                            | 23.4                                | 56.0                           | 43.6                            | 12.9              | 16,836        |
| Less than 5 years complete               | 37.3                                                   | 44.3                   | 46.0                                       | 62.9                     | 62.7                            | 24.5                                | 58.8                           | 45.4                            | 8.9               | 3,771         |
| 5-9 years complete                       | 30.5                                                   | 34.6                   | 39.9                                       | 50.9                     | 54.5                            | 17.3                                | 49.0                           | 35.6                            | 7.3               | 5,985         |
| 10 or more years complete                | 25.8                                                   | 32.0                   | 34.3                                       | 47.0                     | 48.1                            | 13.4                                | 41.8                           | 28.1                            | 5.8               | 4,744         |
| <b>Work status</b>                       |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Currently working                        | 19.0                                                   | 28.0                   | 30.0                                       | 42.4                     | 47.0                            | 12.2                                | 38.4                           | 22.4                            | 4.1               | 9,265         |
| Worked in past but currently not working | 41.5                                                   | 46.7                   | 50.1                                       | 64.4                     | 63.8                            | 25.1                                | 59.4                           | 47.9                            | 13.9              | 13,316        |
| Never worked                             | 42.1                                                   | 47.5                   | 50.0                                       | 61.9                     | 60.5                            | 24.9                                | 60.1                           | 48.6                            | 12.1              | 8,755         |
| <b>MPCE quintile</b>                     |                                                        |                        |                                            |                          |                                 |                                     |                                |                                 |                   |               |
| Poorest                                  | 35.4                                                   | 43.4                   | 45.2                                       | 59.0                     | 59.7                            | 20.1                                | 53.0                           | 40.4                            | 12.0              | 6,459         |
| Poorer                                   | 34.6                                                   | 40.4                   | 42.4                                       | 57.7                     | 57.3                            | 20.2                                | 53.4                           | 41.6                            | 10.7              | 6,447         |
| Middle                                   | 33.9                                                   | 39.6                   | 43.1                                       | 56.1                     | 58.4                            | 21.4                                | 53.1                           | 40.3                            | 9.1               | 6,387         |
| Richer                                   | 33.0                                                   | 40.3                   | 44.4                                       | 55.3                     | 56.9                            | 21.9                                | 53.5                           | 39.7                            | 9.8               | 6,152         |
| Richest                                  | 36.9                                                   | 42.0                   | 44.6                                       | 56.3                     | 56.0                            | 22.1                                | 52.4                           | 38.8                            | 10.4              | 5,891         |
| <b>Total</b>                             | <b>34.7</b>                                            | <b>41.1</b>            | <b>43.9</b>                                | <b>57.0</b>              | <b>57.8</b>                     | <b>21.1</b>                         | <b>53.1</b>                    | <b>40.2</b>                     | <b>10.4</b>       | <b>31,336</b> |

**Table 11.4 Percentage of elderly age 60 and above with different mobility restrictions, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Different mobility restrictions among elderly age ≥ 60 |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
|---------------------------|--------------------------------------------------------|---------------------------|--------------------------------------------------|--------------------------------|---------------------------------------|-------------------------------------------|--------------------------------------|------------------------------------|----------------------|---------------|
|                           | Walking<br>100 yards                                   | Sitting for<br>long hours | Getting up from<br>long time sitting<br>position | Climbing<br>without<br>resting | Stooping,<br>kneeling or<br>crouching | Extending arms<br>above shoulder<br>level | Pulling/<br>pushing large<br>objects | Lifting/ carrying<br>heavy weights | Picking up a<br>coin | Number        |
| <b>India</b>              | <b>34.7</b>                                            | <b>41.1</b>               | <b>43.9</b>                                      | <b>57.0</b>                    | <b>57.8</b>                           | <b>21.1</b>                               | <b>53.1</b>                          | <b>40.2</b>                        | <b>10.4</b>          | <b>31,336</b> |
| <b>North</b>              |                                                        |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
| Chandigarh                | 31.3                                                   | 35.2                      | 43.5                                             | 50.5                           | 61.2                                  | 16.3                                      | 46.1                                 | 32.6                               | 3.9                  | 385           |
| Delhi                     | 33.4                                                   | 42.4                      | 43.4                                             | 59.8                           | 50.9                                  | 17.0                                      | 41.3                                 | 35.5                               | 8.5                  | 494           |
| Haryana                   | 18.1                                                   | 31.9                      | 37.3                                             | 55.4                           | 52.1                                  | 18.1                                      | 50.2                                 | 31.9                               | 11.6                 | 847           |
| Himachal Pradesh          | 26.0                                                   | 33.5                      | 35.2                                             | 54.0                           | 54.4                                  | 28.1                                      | 53.7                                 | 37.8                               | 8.4                  | 617           |
| Jammu & Kashmir           | 34.3                                                   | 55.2                      | 54.5                                             | 55.6                           | 58.1                                  | 31.4                                      | 59.3                                 | 42.2                               | 21.1                 | 730           |
| Punjab                    | 35.5                                                   | 35.7                      | 37.1                                             | 48.8                           | 55.1                                  | 17.2                                      | 48.4                                 | 28.0                               | 5.5                  | 1,001         |
| Rajasthan                 | 21.9                                                   | 32.9                      | 33.6                                             | 39.4                           | 39.1                                  | 18.9                                      | 34.7                                 | 29.1                               | 12.6                 | 1,077         |
| Uttarakhand               | 25.0                                                   | 40.6                      | 43.4                                             | 59.9                           | 64.9                                  | 23.0                                      | 52.8                                 | 32.2                               | 9.3                  | 641           |
| <b>Central</b>            |                                                        |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
| Chhattisgarh              | 27.2                                                   | 30.3                      | 35.0                                             | 48.7                           | 39.4                                  | 9.9                                       | 42.4                                 | 36.6                               | 9.0                  | 779           |
| Madhya Pradesh            | 31.6                                                   | 38.9                      | 44.5                                             | 58.2                           | 52.3                                  | 24.7                                      | 49.8                                 | 37.3                               | 12.9                 | 1312          |
| Uttar Pradesh             | 41.5                                                   | 41.8                      | 42.6                                             | 56.2                           | 53.4                                  | 19.1                                      | 51.5                                 | 37.4                               | 17.3                 | 2165          |
| <b>East</b>               |                                                        |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
| Bihar                     | 29.3                                                   | 42.4                      | 43.7                                             | 58.9                           | 59.8                                  | 18.5                                      | 55.5                                 | 35.7                               | 9.1                  | 1,806         |
| Jharkhand                 | 31.9                                                   | 47.1                      | 51.3                                             | 63.2                           | 62.1                                  | 24.9                                      | 61.8                                 | 34.1                               | 10.3                 | 1,166         |
| Odisha                    | 29.5                                                   | 36.9                      | 33.4                                             | 53.0                           | 58.5                                  | 16.3                                      | 55.2                                 | 36.0                               | 5.6                  | 1,230         |
| West Bengal               | 46.3                                                   | 50.4                      | 59.1                                             | 67.1                           | 65.7                                  | 20.4                                      | 64.2                                 | 56.4                               | 8.6                  | 1,541         |
| <b>Northeast</b>          |                                                        |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
| Arunachal Pradesh         | 20.8                                                   | 38.8                      | 36.0                                             | 35.4                           | 44.5                                  | 18.7                                      | 32.0                                 | 22.8                               | 11.0                 | 318           |
| Assam                     | 37.1                                                   | 45.0                      | 49.8                                             | 66.7                           | 50.6                                  | 17.2                                      | 57.6                                 | 43.9                               | 5.5                  | 814           |
| Manipur                   | 24.9                                                   | 25.7                      | 37.8                                             | 42.2                           | 37.4                                  | 12.1                                      | 55.4                                 | 25.9                               | 6.0                  | 605           |
| Meghalaya                 | 39.7                                                   | 29.9                      | 34.8                                             | 41.5                           | 31.0                                  | 11.7                                      | 47.3                                 | 32.1                               | 6.5                  | 411           |
| Mizoram                   | 24.4                                                   | 21.1                      | 39.2                                             | 46.3                           | 43.6                                  | 9.6                                       | 42.2                                 | 42.7                               | 7.5                  | 531           |
| Nagaland                  | 10.0                                                   | 25.7                      | 30.6                                             | 42.5                           | 43.4                                  | 10.3                                      | 51.3                                 | 24.8                               | 6.5                  | 607           |
| Tripura                   | 36.4                                                   | 31.9                      | 38.7                                             | 47.3                           | 48.1                                  | 14.9                                      | 36.7                                 | 41.8                               | 6.1                  | 459           |
| <b>West</b>               |                                                        |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
| Dadra & Nagar Haveli      | 27.3                                                   | 29.3                      | 33.2                                             | 42.6                           | 45.6                                  | 8.8                                       | 45.0                                 | 39.2                               | 1.6                  | 446           |
| Daman & Diu               | 37.4                                                   | 36.7                      | 46.7                                             | 60.1                           | 49.9                                  | 14.3                                      | 49.1                                 | 34.3                               | 2.6                  | 427           |
| Goa                       | 45.6                                                   | 47.0                      | 45.1                                             | 60.3                           | 63.6                                  | 28.4                                      | 57.2                                 | 40.8                               | 18.3                 | 634           |
| Gujarat                   | 32.0                                                   | 31.9                      | 33.1                                             | 43.4                           | 43.0                                  | 13.8                                      | 45.1                                 | 40.9                               | 5.1                  | 979           |
| Maharashtra               | 36.4                                                   | 48.8                      | 47.6                                             | 67.2                           | 67.8                                  | 31.5                                      | 60.8                                 | 46.5                               | 7.1                  | 1,780         |
| <b>South</b>              |                                                        |                           |                                                  |                                |                                       |                                           |                                      |                                    |                      |               |
| Andaman & Nicobar Islands | 46.7                                                   | 41.5                      | 49.9                                             | 57.9                           | 58.1                                  | 26.6                                      | 63.7                                 | 37.1                               | 10.1                 | 521           |
| Andhra Pradesh            | 31.7                                                   | 30.1                      | 38.1                                             | 46.9                           | 65.4                                  | 22.2                                      | 46.1                                 | 41.3                               | 18.5                 | 1,098         |
| Karnataka                 | 36.5                                                   | 42.2                      | 44.8                                             | 53.1                           | 54.7                                  | 21.0                                      | 54.8                                 | 40.1                               | 5.8                  | 999           |
| Kerala                    | 43.4                                                   | 46.2                      | 56.2                                             | 70.6                           | 66.6                                  | 37.3                                      | 59.6                                 | 51.0                               | 11.0                 | 1,202         |
| Lakshadweep               | 33.1                                                   | 32.1                      | 41.2                                             | 53.6                           | 54.8                                  | 17.4                                      | 35.7                                 | 34.4                               | 8.0                  | 500           |
| Puducherry                | 27.8                                                   | 31.1                      | 35.4                                             | 37.9                           | 65.2                                  | 15.7                                      | 41.3                                 | 28.7                               | 15.6                 | 637           |
| Tamil Nadu                | 36.5                                                   | 39.9                      | 43.4                                             | 59.7                           | 70.4                                  | 15.5                                      | 47.0                                 | 38.5                               | 9.1                  | 1,529         |
| Telangana                 | 32.6                                                   | 31.7                      | 39.4                                             | 51.4                           | 64.6                                  | 23.3                                      | 48.8                                 | 40.7                               | 19.5                 | 1,048         |

### 11.3 WORK LIMITING HEALTH CONDITIONS

Work limiting health conditions refer to any impairment or health problem that limits participation in paid work activities. Individuals who had a job were asked if they had any impairment or health problem that limited the kind or amount of paid work they could do. The prevalence of work limiting health conditions is calculated among older adults who are either currently working or had worked in the past but were currently not working.

Tables 11.5 and Table 11.6 present the self-reported prevalence of work limiting health conditions by background characteristics and by states/UTs. Overall, around a quarter (23%) of older adults age 45 and above who are working or had worked in the past reported having at least one work-limiting health condition; the percentage is comparatively higher among elderly age 60 and above (29%) than older adults age 45-59 (20%). Among elderly age 60 and above, the prevalence of work limiting health conditions is higher in urban (31%) than rural areas (29%), higher among women (31%) than men (28%), higher among elderly living alone (34%), and higher among those who worked in the past but are currently not working (53%).

More than two-fifths of elderly age 60 and above reported having work limiting health conditions in the states/UTs of Gujarat (59%), Dadra & Nagar Haveli (45%), Maharashtra (43%), and Karnataka (42%). About one-third and more of older adults age 45-59 in Gujarat (43%), Dadra and Nagar Haveli (35%), and Punjab (32%) reported a work limiting health condition.

#### Key findings: impairment, mobility restrictions and work limiting health conditions

- Overall, in India, the prevalence of any form of impairment among elderly age 60 and above is 11%; locomotor impairment (6%) is the leading impairment followed by visual impairment (4%), mental and hearing impairment (3% each) and speech impairment (0.9%).
- Among elderly age 60 and above, the prevalence of locomotor impairment is higher in Karnataka, mental impairment is higher in Tamil Nadu, visual and hearing impairment is higher in Dadra & Nagar Haveli while speech impairment is higher in Madhya Pradesh.
- Stooping, kneeling and crouching are most experienced mobility restrictions among elderly while picking up a coin is the least experienced mobility restriction.
- Among elderly age 60 and above, the reported prevalence of work limiting health conditions is much higher in the states of Gujarat (59%), Dadra & Nagar Haveli (45%), Maharashtra (43%) and Karnataka (42%).

**Table 11.5 Self-reported prevalence (%) of work-limiting conditions among older adults by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Work-limiting health conditions <sup>1</sup> |               |             |               |             |               |
|---------------------------------------------|----------------------------------------------|---------------|-------------|---------------|-------------|---------------|
|                                             | Age 45-59*                                   | Number        | Age ≥ 60    | Number        | Total       | Number        |
| <b>Place of residence</b>                   |                                              |               |             |               |             |               |
| Rural                                       | 18.5                                         | 16,702        | 29.0        | 7,984         | 22.2        | 24,686        |
| Urban                                       | 21.9                                         | 7,576         | 30.6        | 2,692         | 24.1        | 10,268        |
| <b>Sex</b>                                  |                                              |               |             |               |             |               |
| Male                                        | 17.6                                         | 13,835        | 28.4        | 7,258         | 21.6        | 21,093        |
| Female                                      | 21.8                                         | 10,443        | 31.4        | 3,418         | 24.3        | 13,861        |
| <b>Marital status</b>                       |                                              |               |             |               |             |               |
| Currently married                           | 19.4                                         | 21,317        | 29.1        | 8,115         | 22.2        | 29,432        |
| Widowed                                     | 20.8                                         | 2,071         | 30.3        | 2,272         | 26.2        | 4,343         |
| Divorced/Separated/Deserted/<br>Others      | 18.7                                         | 890           | 29.1        | 289           | 21.6        | 1,179         |
| <b>Living arrangement</b>                   |                                              |               |             |               |             |               |
| Living alone                                | 18.4                                         | 487           | 34.0        | 563           | 28.4        | 1,050         |
| Living with spouse and/or others            | 18.0                                         | 2,696         | 29.9        | 2,556         | 24.1        | 5,252         |
| Living with spouse and children             | 19.7                                         | 18,253        | 28.6        | 5,467         | 21.8        | 23,720        |
| Living with children and others             | 20.4                                         | 2,131         | 29.4        | 1,656         | 24.7        | 3,787         |
| Living with others only                     | 18.4                                         | 711           | 28.0        | 434           | 22.7        | 1,145         |
| <b>Religion</b>                             |                                              |               |             |               |             |               |
| Hindu                                       | 18.8                                         | 18,362        | 29.3        | 8,028         | 22.2        | 26,390        |
| Muslim                                      | 25.2                                         | 2,190         | 29.3        | 1,028         | 26.6        | 3,218         |
| Christian                                   | 13.0                                         | 2,697         | 24.1        | 1,203         | 16.7        | 3,900         |
| Others                                      | 25.5                                         | 1,029         | 37.7        | 417           | 29.4        | 1,446         |
| <b>Caste/tribe</b>                          |                                              |               |             |               |             |               |
| Scheduled tribe                             | 18.7                                         | 5,075         | 27.9        | 2,173         | 21.7        | 7,248         |
| Scheduled caste                             | 19.6                                         | 4,366         | 29.4        | 1,909         | 22.9        | 6,275         |
| Other backward class                        | 20.0                                         | 9,243         | 30.7        | 4,267         | 23.4        | 13,510        |
| None of the above                           | 18.7                                         | 5,594         | 27.3        | 2,327         | 21.4        | 7,921         |
| <b>Education</b>                            |                                              |               |             |               |             |               |
| No schooling                                | 21.1                                         | 9,631         | 30.2        | 5,571         | 24.5        | 15,202        |
| Less than 5 years complete                  | 20.5                                         | 2,750         | 32.7        | 1,417         | 24.8        | 4,167         |
| 5-9 years complete                          | 18.8                                         | 6,253         | 29.4        | 2,270         | 21.9        | 8,523         |
| 10 or more years complete                   | 16.6                                         | 5,644         | 22.5        | 1,418         | 17.9        | 7,062         |
| <b>Work status</b>                          |                                              |               |             |               |             |               |
| Currently working                           | 18.0                                         | 23,571        | 25.8        | 9,262         | 20.4        | 32,833        |
| Worked in past but currently not<br>working | 55.1                                         | 707           | 53.3        | 1,413         | 54.0        | 2,120         |
| <b>MPCE quintile</b>                        |                                              |               |             |               |             |               |
| Poorest                                     | 14.8                                         | 4,801         | 27.7        | 2,302         | 19.2        | 7,103         |
| Poorer                                      | 17.1                                         | 4,858         | 29.1        | 2,298         | 21.2        | 7,156         |
| Middle                                      | 19.5                                         | 4,830         | 28.8        | 2,212         | 22.7        | 7,042         |
| Richer                                      | 20.4                                         | 5,020         | 29.0        | 2,092         | 23.2        | 7,112         |
| Richest                                     | 26.2                                         | 4,769         | 33.5        | 1,772         | 28.2        | 6,541         |
| <b>Total</b>                                | <b>19.5</b>                                  | <b>24,278</b> | <b>29.3</b> | <b>10,676</b> | <b>22.7</b> | <b>34,954</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Work-limiting health conditions refer to any impairment or health problem that limits paid work activities among those who either currently working or had worked in the past but was currently not working.



**Table 11.6 Self-reported prevalence (%) of work limiting conditions among older adults, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Work limiting health conditions <sup>1</sup> |               |             |               |             |               |
|---------------------------|----------------------------------------------|---------------|-------------|---------------|-------------|---------------|
|                           | Age 45-59*                                   | Number        | Age ≥ 60    | Number        | Total       | Number        |
| <b>India</b>              | <b>19.5</b>                                  | <b>24,278</b> | <b>29.3</b> | <b>10,676</b> | <b>22.7</b> | <b>34,954</b> |
| <b>North</b>              |                                              |               |             |               |             |               |
| Chandigarh                | 18.0                                         | 309           | 39.1        | 72            | 22.5        | 381           |
| Delhi                     | 10.0                                         | 405           | 34.8        | 110           | 15.4        | 515           |
| Haryana                   | 7.5                                          | 541           | 17.3        | 174           | 10.0        | 715           |
| Himachal Pradesh          | 11.0                                         | 558           | 15.1        | 258           | 12.4        | 816           |
| Jammu & Kashmir           | 15.8                                         | 277           | 32.7        | 125           | 21.2        | 402           |
| Punjab                    | 31.9                                         | 459           | 35.0        | 215           | 32.9        | 674           |
| Rajasthan                 | 20.6                                         | 752           | 29.6        | 364           | 23.6        | 1,116         |
| Uttarakhand               | 11.5                                         | 387           | 16.7        | 191           | 13.3        | 578           |
| <b>Central</b>            |                                              |               |             |               |             |               |
| Chhattisgarh              | 11.5                                         | 946           | 18.9        | 307           | 13.3        | 1,253         |
| Madhya Pradesh            | 17.2                                         | 1,040         | 20.3        | 472           | 18.3        | 1,512         |
| Uttar Pradesh             | 18.3                                         | 1,312         | 24.9        | 727           | 20.7        | 2,039         |
| <b>East</b>               |                                              |               |             |               |             |               |
| Bihar                     | 16.7                                         | 974           | 25.1        | 678           | 20.3        | 1,652         |
| Jharkhand                 | 17.2                                         | 793           | 27.9        | 445           | 21.1        | 1,238         |
| Odisha                    | 12.5                                         | 1,012         | 24.2        | 447           | 16.3        | 1,459         |
| West Bengal               | 13.4                                         | 1,319         | 19.3        | 453           | 15.1        | 1,772         |
| <b>Northeast</b>          |                                              |               |             |               |             |               |
| Arunachal Pradesh         | 3.8                                          | 577           | 11.9        | 129           | 5.1         | 706           |
| Assam                     | 2.6                                          | 886           | 4.1         | 252           | 2.9         | 1,138         |
| Manipur                   | 2.9                                          | 592           | 5.8         | 259           | 3.8         | 851           |
| Meghalaya                 | 3.2                                          | 390           | 5.7         | 152           | 3.9         | 542           |
| Mizoram                   | 7.6                                          | 483           | 9.5         | 184           | 8.2         | 667           |
| Nagaland                  | 1.4                                          | 533           | 2.3         | 316           | 1.8         | 849           |
| Tripura                   | 7.9                                          | 446           | 9.0         | 168           | 8.2         | 614           |
| <b>West</b>               |                                              |               |             |               |             |               |
| Dadra & Nagar Haveli      | 35.4                                         | 506           | 44.7        | 255           | 38.3        | 761           |
| Daman & Diu               | 25.2                                         | 309           | 26.6        | 114           | 25.6        | 423           |
| Goa                       | 11.1                                         | 295           | 10.7        | 99            | 11.0        | 394           |
| Gujarat                   | 43.3                                         | 894           | 58.5        | 376           | 48.1        | 1,270         |
| Maharashtra               | 30.4                                         | 1,465         | 43.2        | 698           | 34.9        | 2,163         |
| <b>South</b>              |                                              |               |             |               |             |               |
| Andaman & Nicobar Islands | 12.0                                         | 295           | 21.5        | 80            | 14.0        | 375           |
| Andhra Pradesh            | 11.8                                         | 1,066         | 22.5        | 505           | 15.3        | 1,571         |
| Karnataka                 | 28.0                                         | 1,003         | 42.1        | 459           | 31.9        | 1,462         |
| Kerala                    | 12.1                                         | 561           | 29.5        | 323           | 18.8        | 884           |
| Lakshadweep               | 4.9                                          | 208           | 33.7        | 57            | 11.7        | 265           |
| Puducherry                | 2.4                                          | 422           | 9.6         | 188           | 4.7         | 610           |
| Tamil Nadu                | 7.2                                          | 1,235         | 27.6        | 572           | 14.1        | 1,807         |
| Telangana                 | 11.4                                         | 1,028         | 18.3        | 452           | 13.7        | 1,480         |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Work-limiting health conditions refer to any impairment or health problem that limits paid work activities among those who are either currently working or had worked in the past but was currently not working.

## 11.4 ACTIVITIES OF DAILY LIVING (ADL)

Activities of Daily Living (ADL) is a term used to refer to the normal daily self-care activities, such as movement in bed, changing position from sitting to standing, feeding, bathing, dressing, grooming, and personal hygiene. These activities are fundamental for an independent life. The ability or inability to perform ADLs is used to measure a person's functional status, especially among individuals with disabilities and the elderly. Elderly who retain their ability to perform ADL have a higher level of independence and overall well-being.

To assess ADL limitations, LASI respondents were asked if they were having any of the following limitations and expected the limitation to last for more than three months: difficulty with dressing, walking across the room, bathing, eating, getting in or out of bed, or using the toilet (including getting up and down). In this section, the percentage of older adults with any one and any two ADL limitations are presented.

Table 11.7 shows the prevalence of ADL limitations by background characteristics. The overall prevalence of at least one ADL limitation and two or more ADL limitations in India is 16% and 9%, respectively. A quarter (24%) of elderly age 60 and above reported having at least one ADL limitation, as compared to about a tenth (9%) of older adults age 45-59. The prevalence of two or more ADL limitations is almost three times (14%) higher among elderly age 60 and above compared with older adults age 45-59 (5%). The percentage of older adults age 45 and above residing in rural areas who reported at least one ADL limitation is slightly higher, as was the percentage reporting two or more ADL limitations (17% and 9%, respectively), than in urban areas (14% and 8%, respectively). Among the elderly age 60 and above, both the prevalence of at least one ADL limitation and two or more ADL limitations are higher among women (26% and 16%, respectively) compared to men (21% and 12%, respectively). These proportions are also higher among widowed (29% and 19%, respectively) and those who had worked in the past but are currently not working (30% and 19%, respectively) than their counterparts. The prevalence of ADL limitation decreases with educational attainment.

Cross-state variations in the prevalence of ADL limitations among older adult are presented in Table 11.8. More than a quarter of older adults age 45 and above reported having at least one ADL limitation in West Bengal (26%), Maharashtra (26%), Daman & Diu (26%), and Goa (25%); the proportion of older adults age 45 and above reporting two or more ADL limitations is highest in West Bengal (17%), followed by Maharashtra (16%) and Goa (14%). Between a quarter to a third of the elderly age 60 and above reported having at least one ADL limitation in the states/UTs of West Bengal (39%), Goa (37%), Maharashtra (36%), Daman & Diu (34%), Andaman & Nicobar (29%), Madhya Pradesh (27%), Tamil Nadu (26%), Himachal Pradesh (26%), and Bihar (26%). The proportion of the elderly age 60 and above reporting two or more ADL limitations are comparatively lower in all north-eastern states besides Dadra & Nagar Haveli (10%), Puducherry (9%), Punjab (9%), Haryana (8%), and Rajasthan (5%).

Tables 11.9 and Table 11.10 present the percentages of the elderly age 60 and above with different ADL limitations by background characteristics and by states/UTs. Among self-care activities, the proportion of the elderly age 60 and above who reported having difficulty using the toilet is highest (18%), followed by the proportion reporting difficulties in getting in or out of bed (12%). Around 7-8% of the elderly age 60 and above reported difficulties with dressing (such as putting on chappals, shoes, etc.), difficulties in walking across a room, difficulty in bathing, and eating difficulties (for example, chewing, breaking chapatti, mixing rice, etc.).

The highest proportions of the elderly age 60 and above reporting difficulties in dressing are found in the states/UTs of Daman & Diu (15%) and West Bengal (14%). The proportion of the elderly age 60 and above with difficulties in walking across a room is highest in Goa (14%) and with bathing is highest in West Bengal (14%). A higher percentage of the elderly age 60 and above reported eating difficulties in Madhya Pradesh (17%), followed by Tamil Nadu (14%). More than a fifth of the elderly age 60 and above reported having difficulties in getting in or out of bed in the states of West Bengal (25%), Maharashtra (22%), and Goa (22%). A quarter (or more) of the elderly age 60 and above reported having difficulties in using the toilet in the states/UTs of West Bengal (31%), Maharashtra (31%), and Andaman & Nicobar (24%).

## 11.5 INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL)

Instrumental Activities of Daily Living (IADL) are those that are not necessarily related to the fundamental functioning of a person, but which allow an individual to live independently in a community. These tasks are necessary for independent functioning of the elderly in the community. Questions related to IADL are aimed to determine the level of independence and the need for supervision or assistance on a day-to-day basis. In the LASI, respondents were asked if they were having any difficulties that were expected to last more than three months, such as preparing a hot meal, shopping for groceries, making a telephone call, taking medications, doing work around the house or garden, managing money (such as paying bills and keeping track of expenses), and getting around or finding an address in unfamiliar places.

Table 11.7 presents the percentage of older adults with at least one IADL limitation or two or more IADL limitations. Overall, a third of older adults age 45 and above reported having at least one IADL limitation (36%), and a quarter of older adults age 45 and above reported having two or more IADL limitations (26%). Close to half of the elderly age 60 and above reported having at least one IADL limitation (48%), and more than a third reported having two or more IADL limitations (37%). These proportions are higher than the 26% of older adults age 45-59 who reported having at least one IADL limitation and the 16% who reported having two or more IADL limitations. The prevalence of at least one IADL and two or more IADL limitations are higher in rural than in urban areas, and are also higher among women than men. These differences are more pronounced among the elderly age 60 and above. More than half of widowed (54%) and older adults age 45 and above who are living alone (53%) reported having at least one IADL limitation. The percentage of the elderly age 60 and above reporting two or more IADL limitations decreases with education, ranging from 46% among those with no schooling to 17% among those with 10 or more years of schooling; similarly, the percentage of the elderly age 60 and above with two or more IADL limitations also decreases as MPCE quintile increases.

Table 11.8 presents the cross-state variation in the prevalence of at least one IADL limitation and two or more IADL limitations among older adults age 45 and above. Among the elderly age 60 and above, the prevalence of at least one IADL is markedly higher in Jammu & Kashmir (66%), followed by Karnataka (60%), West Bengal (60%), Tamil Nadu (56%), and Telangana (55%). More than 40% of the elderly age 60 and above reported having two or more IADL limitations in the states/UTs of Jammu & Kashmir (55%), Karnataka (51%), West Bengal (45%), Tamil Nadu (45%), Bihar (44%), and Telangana (43%).

Table 11.9 presents the percentages of elderly age 60 and above with different IADL limitations by background characteristics. Among all IADL limitations, the highest percentage of the elderly age 60 and above reported having difficulties in getting around or finding an address in unfamiliar places (30%), followed by making phone calls (29%) and managing money (28%). The prevalence of different IADL limitations are higher among elderly living in rural areas compared to those in urban areas, as well as higher among elderly women than elderly men. The prevalence of different IADL limitations decreases with educational attainment and MPCE quintiles.

**Figure 11.1 Percentage of elderly age 60 and above with at least one Activities of Daily Living (ADL) limitation and those with at least one Instrumental Activities of Daily Living (IADL) limitation, states/UTs, LASI Wave 1, 2017-18**

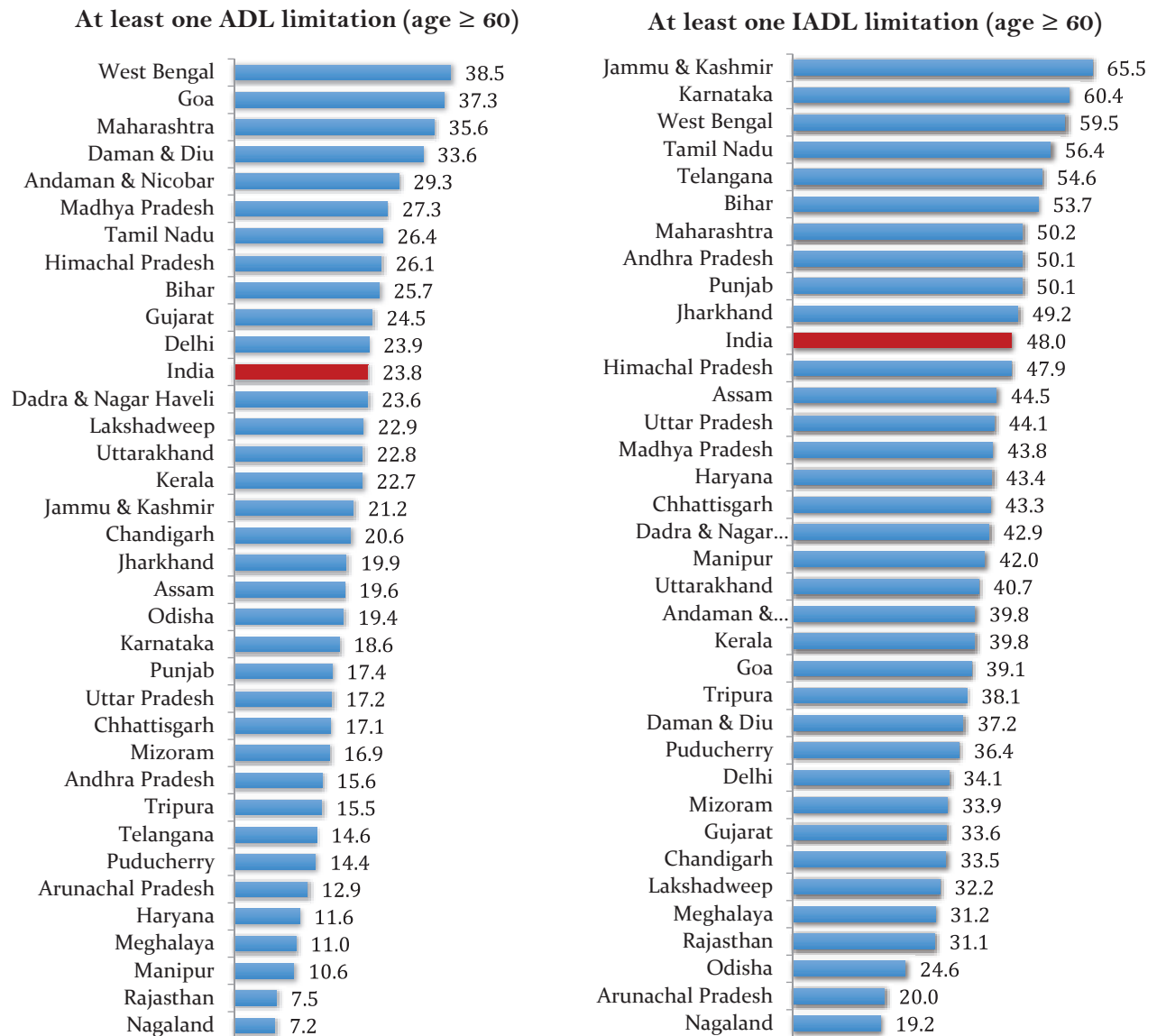
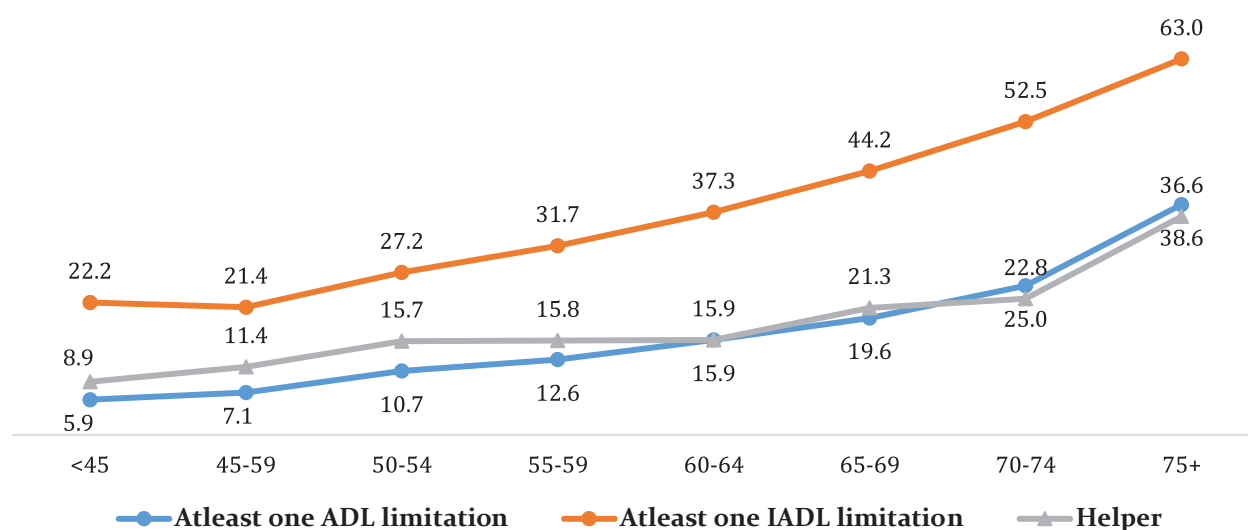


Figure 11.2 shows the percentage of older adults with at least one ADL limitation and at least one IADL limitation by age. Limitations in at least one ADL and at least one IADL increased sharply with age, with a more noticeable increase from age 65-69.

**Figure 11.2 Percentage of older adults with at least one Activities of Daily Living (ADL) limitation<sup>1</sup>, Instrumental Activities of Daily Living (IADL) limitation<sup>1</sup> and needed helper<sup>2</sup> by age, India, LASI Wave 1, 2017-18**



Notes

<sup>1</sup> Prevalence of ADL and IADL limitations were calculated based on all sample (n=71,943)

<sup>2</sup> Denominator for calculating the helper is those who reported ADL and/or IADL limitations (n=25,136)

**Table 11.7 Percentage of older adults with Activities of Daily Living (ADL)<sup>1</sup> and Instrumental Activities of Daily Living (IADL)<sup>2</sup> limitations by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*         |                    |                     |                    |                     |        | Age ≥ 60           |                    |                     |                    |                     |        | Total              |                    |                     |                    |
|------------------------------------------|--------------------|--------------------|---------------------|--------------------|---------------------|--------|--------------------|--------------------|---------------------|--------------------|---------------------|--------|--------------------|--------------------|---------------------|--------------------|
|                                          | 1+ ADL limitations |                    | 2+ ADL limitations  |                    | 2+ IADL limitations |        | 1+ ADL limitations |                    | 2+ ADL limitations  |                    | 2+ IADL limitations |        | 1+ ADL limitations |                    | 2+ ADL limitations  |                    |
|                                          | 1+ ADL limitations | 2+ ADL limitations | 1+ IADL limitations | 2+ ADL limitations | 2+ IADL limitations | Number | 1+ ADL limitations | 2+ ADL limitations | 1+ IADL limitations | 2+ ADL limitations | 2+ IADL limitations | Number | 1+ ADL limitations | 2+ ADL limitations | 1+ IADL limitations | 2+ ADL limitations |
| Place of residence                       |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
|                                          |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
|                                          |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Sex                                      |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Male                                     | 8.2                | 17.1               | 3.6                 | 9.1                | 15,395              | 25,721 | 20.9               | 38.3               | 11.7                | 26.9               | 15,014              | 14.7   | 28.1               | 7.8                | 18.3                | 30,409             |
| Female                                   | 9.9                | 30.8               | 5.0                 | 20.1               | 25,212              | 14,886 | 26.4               | 56.7               | 16.4                | 46.3               | 16,322              | 16.8   | 41.6               | 9.7                | 31.0                | 41,534             |
| Marital status                           |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Currently married                        | 8.9                | 24.7               | 4.2                 | 15.2               | 35,322              | 25,721 | 20.7               | 41.0               | 11.5                | 29.7               | 19,836              | 13.3   | 30.8               | 6.9                | 20.7                | 55,158             |
| Widowed                                  | 12.3               | 35.4               | 6.9                 | 22.7               | 3,855               | 14,886 | 28.9               | 59.6               | 18.8                | 49.4               | 10,680              | 25.0   | 53.9               | 16.0               | 43.2                | 14,535             |
| Divorced/Separated/Deserted/ Others      | 10.6               | 24.7               | 4.3                 | 16.8               | 1,430               |        | 24.0               | 52.3               | 13.0                | 42.0               | 820                 | 15.4   | 34.7               | 7.5                | 26.0                | 2,250              |
| Living arrangement                       |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Living alone                             | 14.8               | 32.7               | 5.3                 | 20.5               | 688                 |        | 27.3               | 59.3               | 16.5                | 48.7               | 1,618               | 24.5   | 53.3               | 14.0               | 42.3                | 2,306              |
| Living with spouse and/or others         | 10.4               | 28.1               | 5.0                 | 16.5               | 4,478               |        | 21.5               | 42.2               | 12.7                | 30.3               | 6,134               | 16.9   | 36.3               | 9.5                | 24.6                | 10,612             |
| Living with spouse and children          | 8.6                | 24.1               | 4.0                 | 15.0               | 30,191              |        | 20.3               | 40.3               | 10.8                | 29.2               | 13,462              | 12.3   | 29.2               | 6.2                | 19.5                | 43,653             |
| Living with children and others          | 11.8               | 34.2               | 6.6                 | 22.0               | 4,076               |        | 28.7               | 58.9               | 19.0                | 49.3               | 8,416               | 23.9   | 51.9               | 15.5               | 41.5                | 12,492             |
| Living with others only                  | 11.3               | 25.1               | 6.4                 | 16.9               | 1,174               |        | 29.0               | 59.1               | 17.1                | 47.0               | 1,706               | 22.3   | 46.3               | 13.1               | 35.6                | 2,880              |
| Religion                                 |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Hindu                                    | 8.8                | 24.8               | 4.3                 | 15.3               | 29,807              |        | 23.5               | 48.1               | 13.8                | 37.5               | 22,945              | 15.6   | 35.6               | 8.7                | 25.5                | 52,752             |
| Muslim                                   | 13.2               | 31.7               | 5.5                 | 21.7               | 4,909               |        | 26.2               | 47.1               | 15.9                | 36.9               | 3,715               | 18.9   | 38.5               | 10.1               | 28.5                | 8,624              |
| Christian                                | 4.0                | 22.8               | 2.6                 | 13.2               | 4,054               |        | 23.9               | 42.5               | 15.5                | 34.0               | 3,138               | 12.8   | 31.5               | 8.3                | 22.4                | 7,192              |
| Others                                   | 11.1               | 28.0               | 5.1                 | 15.1               | 1,837               |        | 22.8               | 51.2               | 15.3                | 30.7               | 1,538               | 16.7   | 39.2               | 10.0               | 22.7                | 3,375              |
| Caste/tribe                              |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Scheduled tribe                          | 8.2                | 25.6               | 4.1                 | 15.3               | 7,318               |        | 19.8               | 44.7               | 11.2                | 35.0               | 5,154               | 13.2   | 33.9               | 7.2                | 23.9                | 12,472             |
| Scheduled caste                          | 9.7                | 29.5               | 4.7                 | 18.6               | 6,879               |        | 25.6               | 50.6               | 15.5                | 38.5               | 5,124               | 16.9   | 39.0               | 9.6                | 27.6                | 12,003             |
| Other backward class                     | 8.3                | 25.9               | 3.7                 | 16.5               | 15,227              |        | 23.0               | 49.9               | 13.2                | 39.9               | 11,828              | 15.0   | 36.8               | 8.0                | 27.2                | 27,055             |
| None of the above                        | 11.1               | 22.6               | 5.8                 | 13.4               | 11,183              |        | 24.9               | 44.1               | 15.6                | 32.2               | 9,230               | 17.7   | 32.8               | 10.5               | 22.3                | 20,413             |
| Education                                |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| No schooling                             | 10.4               | 36.0               | 5.2                 | 24.2               | 16,260              |        | 26.2               | 56.5               | 16.0                | 45.7               | 16,836              | 18.7   | 46.7               | 10.9               | 35.5                | 33,096             |
| Less than 5 years complete               | 11.3               | 28.2               | 5.3                 | 15.9               | 4,257               |        | 29.3               | 48.9               | 16.9                | 36.3               | 3,772               | 20.0   | 38.2               | 10.9               | 25.8                | 8,029              |
| 5-9 years complete                       | 10.1               | 20.4               | 4.7                 | 11.4               | 10,853              |        | 18.6               | 37.6               | 11.2                | 26.8               | 5,985               | 13.4   | 27.0               | 7.2                | 17.3                | 16,838             |
| 10 or more years complete                | 5.3                | 10.0               | 2.4                 | 4.8                | 9,237               |        | 15.9               | 26.3               | 8.0                 | 16.5               | 4,743               | 8.9    | 15.7               | 4.3                | 8.9                 | 13,980             |
| Work status                              |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |
| Currently working                        | 7.0                | 22.1               | 3.0                 | 12.2               | 23,576              |        | 13.6               | 35.0               | 5.5                 | 21.8               | 9,265               | 9.0    | 26.0               | 3.8                | 15.2                | 32,841             |
| Worked in past but currently not working | 19.4               | 41.2               | 10.8                | 29.8               | 4,561               |        | 29.9               | 53.5               | 18.8                | 43.5               | 13,315              | 27.3   | 50.4               | 16.8               | 40.1                | 17,876             |
| Never worked                             | 9.7                | 26.7               | 4.8                 | 17.9               | 12,470              |        | 25.7               | 54.1               | 16.7                | 44.6               | 8,756               | 16.8   | 38.7               | 10.1               | 29.6                | 21,226             |
|                                          |                    |                    |                     |                    |                     |        |                    |                    |                     |                    |                     |        |                    |                    |                     | continued          |

continued

continued

| Background characteristics | Age 45-59*         |                     |                    |                     |               |  | Age ≥ 60           |                     |                    |                     |               |  | Total              |                    |
|----------------------------|--------------------|---------------------|--------------------|---------------------|---------------|--|--------------------|---------------------|--------------------|---------------------|---------------|--|--------------------|--------------------|
|                            | 1+ ADL limitations | 1+ IADL limitations | 2+ ADL limitations | 2+ IADL limitations | Number        |  | 1+ ADL limitations | 1+ IADL limitations | 2+ ADL limitations | 2+ IADL limitations | Number        |  | 1+ ADL limitations | 2+ ADL limitations |
| <b>MPCE quintile</b>       |                    |                     |                    |                     |               |  |                    |                     |                    |                     |               |  |                    |                    |
| Poorest                    | 8.3                | 28.6                | 3.9                | 18.5                | 7,640         |  | 25.6               | 50.2                | 15.5               | 40.6                | 6,459         |  | 38.9               | 29.2               |
| Poorer                     | 8.5                | 29.0                | 4.3                | 18.2                | 8,023         |  | 23.8               | 49.4                | 13.8               | 37.7                | 6,447         |  | 38.6               | 27.3               |
| Middle                     | 9.7                | 24.4                | 5.2                | 14.6                | 8,086         |  | 23.8               | 44.9                | 14.1               | 34.6                | 6,387         |  | 34.0               | 24.0               |
| Richer                     | 10.0               | 24.9                | 4.5                | 14.9                | 8,478         |  | 22.4               | 48.6                | 12.6               | 37.5                | 6,153         |  | 35.5               | 25.0               |
| Richest                    | 10.0               | 21.3                | 4.3                | 13.5                | 8,380         |  | 22.9               | 46.4                | 14.7               | 34.5                | 5,890         |  | 31.8               | 22.3               |
| <b>Total</b>               | <b>9.3</b>         | <b>25.7</b>         | <b>4.5</b>         | <b>16.0</b>         | <b>40,607</b> |  | <b>23.8</b>        | <b>48.0</b>         | <b>14.2</b>        | <b>37.1</b>         | <b>31,336</b> |  | <b>35.9</b>        | <b>25.7</b>        |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use (any one or more).

<sup>2</sup> Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place (any one or more).



**Table 11.8 Percentage of older adults with Activities of Daily Living (ADL)<sup>1</sup> and Instrumental Activities of Daily Living (IADL)<sup>2</sup> limitations, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*         |      |                    |      |        |      | Age ≥ 60           |      |                    |        |        |      | Total               |      |
|-----------------------|--------------------|------|--------------------|------|--------|------|--------------------|------|--------------------|--------|--------|------|---------------------|------|
|                       | 1+ ADL limitations |      | 2+ ADL limitations |      | Number |      | 1+ ADL limitations |      | 2+ ADL limitations |        | Number |      | 1+ IADL limitations |      |
|                       | 9.3                | 25.7 | 4.5                | 16.0 | 40,607 | 23.8 | 48.0               | 14.2 | 37.1               | 31,336 | 15.9   | 35.9 | 8.9                 | 25.7 |
| <b>India</b>          |                    |      |                    |      |        |      |                    |      |                    |        |        |      |                     |      |
| <b>North</b>          |                    |      |                    |      |        |      |                    |      |                    |        |        |      |                     |      |
| Chandigarh            | 7.8                | 11.6 | 2.2                | 4.3  | 619    | 20.6 | 33.5               | 10.9 | 26.5               | 384    | 12.9   | 20.3 | 5.6                 | 13.1 |
| Delhi                 | 8.9                | 12.7 | 4.6                | 7.3  | 822    | 23.9 | 34.1               | 16.2 | 28.2               | 494    | 14.6   | 20.9 | 9.0                 | 15.2 |
| Haryana               | 4.0                | 19.4 | 2.1                | 11.1 | 1,048  | 11.6 | 43.4               | 7.5  | 31.2               | 847    | 7.6    | 30.9 | 4.7                 | 20.7 |
| Himachal Pradesh      | 9.8                | 21.6 | 5.0                | 10.7 | 765    | 26.1 | 47.9               | 17.3 | 35.5               | 617    | 17.5   | 34.1 | 10.8                | 22.5 |
| Jammu & Kashmir       | 5.9                | 34.0 | 3.3                | 23.0 | 880    | 21.2 | 65.5               | 15.1 | 55.3               | 730    | 13.4   | 49.5 | 9.1                 | 38.9 |
| Punjab                | 8.0                | 26.3 | 3.1                | 9.9  | 1,106  | 17.4 | 50.1               | 8.6  | 26.6               | 1,001  | 12.5   | 37.7 | 5.7                 | 17.9 |
| Rajasthan             | 2.0                | 11.4 | 1.3                | 7.4  | 1,161  | 7.5  | 31.1               | 5.0  | 24.4               | 1,077  | 4.7    | 21.2 | 3.1                 | 15.9 |
| Uttarakhand           | 8.1                | 22.2 | 4.5                | 17.1 | 716    | 22.8 | 40.7               | 13.4 | 29.4               | 641    | 15.3   | 31.3 | 8.9                 | 23.2 |
| <b>Central</b>        |                    |      |                    |      |        |      |                    |      |                    |        |        |      |                     |      |
| Chhattisgarh          | 3.0                | 24.6 | 1.5                | 9.5  | 1,274  | 17.1 | 43.3               | 9.7  | 30.6               | 779    | 8.5    | 31.7 | 4.7                 | 17.6 |
| Madhya Pradesh        | 9.2                | 19.1 | 4.6                | 12.3 | 1,596  | 27.3 | 43.8               | 16.5 | 35.7               | 1,312  | 17.8   | 30.8 | 10.3                | 23.4 |
| Uttar Pradesh         | 5.6                | 23.5 | 2.5                | 14.6 | 2,393  | 17.2 | 44.1               | 9.3  | 34.6               | 2,165  | 11.3   | 33.7 | 5.8                 | 24.5 |
| <b>East</b>           |                    |      |                    |      |        |      |                    |      |                    |        |        |      |                     |      |
| Bihar                 | 9.2                | 33.1 | 4.5                | 23.7 | 1,707  | 25.7 | 53.7               | 13.2 | 44.2               | 1,806  | 18.1   | 44.2 | 9.2                 | 34.7 |
| Jharkhand             | 4.7                | 23.3 | 1.7                | 15.0 | 1,292  | 19.9 | 49.2               | 9.3  | 37.8               | 1,166  | 12.0   | 35.8 | 5.3                 | 26.0 |
| Odisha                | 7.3                | 12.2 | 3.4                | 6.2  | 1,675  | 19.4 | 24.6               | 10.9 | 17.6               | 1,230  | 12.6   | 17.7 | 6.7                 | 11.2 |
| West Bengal           | 18.2               | 36.0 | 9.2                | 22.0 | 2,382  | 38.5 | 59.5               | 27.4 | 45.4               | 1,541  | 26.4   | 45.5 | 16.6                | 31.5 |
| <b>Northeast</b>      |                    |      |                    |      |        |      |                    |      |                    |        |        |      |                     |      |
| Arunachal Pradesh     | 2.6                | 9.3  | 1.2                | 4.4  | 897    | 12.9 | 20.0               | 7.2  | 14.0               | 318    | 5.1    | 11.9 | 2.7                 | 6.8  |
| Assam                 | 4.6                | 20.1 | 1.4                | 12.9 | 1,544  | 19.6 | 44.5               | 9.7  | 37.6               | 814    | 10.0   | 28.9 | 4.4                 | 21.7 |
| Manipur               | 3.6                | 18.8 | 1.6                | 10.7 | 758    | 10.6 | 42.0               | 5.1  | 32.5               | 605    | 6.9    | 29.6 | 3.2                 | 20.9 |
| Meghalaya             | 1.2                | 13.3 | [0.6]              | 5.8  | 556    | 11.0 | 31.2               | 8.3  | 25.7               | 411    | 5.3    | 20.8 | 3.8                 | 14.1 |
| Mizoram               | 3.3                | 6.6  | 1.8                | 2.2  | 713    | 16.9 | 33.9               | 11.1 | 23.3               | 531    | 9.4    | 18.9 | 6.0                 | 11.7 |
| Nagaland              | 1.6                | 4.2  | [0.1]              | 2.5  | 708    | 7.2  | 19.2               | 3.2  | 14.0               | 607    | 4.3    | 11.5 | 1.6                 | 8.2  |
| Tripura               | 5.4                | 22.0 | 2.9                | 13.0 | 732    | 15.5 | 38.1               | 10.0 | 24.8               | 459    | 9.4    | 28.3 | 5.7                 | 17.7 |
| <b>West</b>           |                    |      |                    |      |        |      |                    |      |                    |        |        |      |                     |      |
| Dadra & Nagar Haveli  | 9.2                | 23.8 | 4.4                | 13.4 | 630    | 23.6 | 42.9               | 9.7  | 32.0               | 446    | 14.8   | 31.2 | 6.5                 | 20.6 |
| Daman & Diu           | 19.2               | 20.5 | 5.9                | 8.9  | 555    | 33.6 | 37.2               | 17.4 | 27.0               | 427    | 26.0   | 28.5 | 11.3                | 17.5 |
| Goa                   | 15.1               | 15.0 | 7.2                | 6.0  | 786    | 37.3 | 39.1               | 21.7 | 23.4               | 634    | 25.2   | 26.0 | 13.8                | 14.0 |
| Gujarat               | 13.0               | 21.9 | 5.2                | 12.3 | 1,333  | 24.5 | 33.6               | 11.7 | 24.0               | 979    | 18.2   | 27.2 | 8.1                 | 17.5 |
| Maharashtra           | 17.1               | 25.3 | 9.2                | 14.6 | 2,173  | 35.6 | 50.2               | 22.6 | 33.8               | 1,780  | 26.1   | 37.5 | 15.8                | 24.0 |

continued



continued

| State/Union Territory     | Age 45-59*         |      |                     |      |                    |      | Age ≥ 60           |      |                     |       |                    |      | Total              |      |
|---------------------------|--------------------|------|---------------------|------|--------------------|------|--------------------|------|---------------------|-------|--------------------|------|--------------------|------|
|                           | 1+ ADL limitations |      | 1+ IADL limitations |      | 2+ ADL limitations |      | 1+ ADL limitations |      | 1+ IADL limitations |       | 2+ ADL limitations |      | 1+ ADL limitations |      |
|                           | Number             |      | Number              |      | Number             |      | Number             |      | Number              |       | Number             |      | Number             |      |
| <b>South</b>              |                    |      |                     |      |                    |      |                    |      |                     |       |                    |      |                    |      |
| Andaman & Nicobar Islands | 9.4                | 14.5 | 3.0                 | 9.3  | 720                | 29.3 | 39.8               | 18.3 | 27.4                | 521   | 17.5               | 24.8 | 9.3                | 16.7 |
| Andhra Pradesh            | 4.2                | 25.5 | 2.7                 | 16.1 | 1,565              | 15.6 | 50.1               | 11.5 | 40.8                | 1,098 | 9.0                | 35.9 | 6.4                | 26.5 |
| Karnataka                 | 7.2                | 34.0 | 2.7                 | 23.2 | 1,409              | 18.6 | 60.4               | 9.5  | 51.0                | 999   | 11.7               | 44.6 | 5.4                | 34.4 |
| Kerala                    | 8.2                | 12.9 | 3.3                 | 7.4  | 1,273              | 22.7 | 39.8               | 14.3 | 30.5                | 1,203 | 15.7               | 26.8 | 9.0                | 19.4 |
| Lakshadweep               | 9.7                | 16.1 | 4.9                 | 9.3  | 637                | 22.9 | 32.2               | 14.2 | 23.8                | 500   | 16.0               | 23.8 | 9.3                | 16.2 |
| Puducherry                | 3.3                | 19.5 | 1.0                 | 6.7  | 785                | 14.4 | 36.4               | 8.8  | 25.2                | 637   | 8.5                | 27.4 | 4.7                | 15.4 |
| Tamil Nadu                | 8.4                | 32.8 | 3.4                 | 19.9 | 1,993              | 26.4 | 56.4               | 16.1 | 44.9                | 1,529 | 16.6               | 43.6 | 9.2                | 31.4 |
| Telangana                 | 3.3                | 27.4 | 1.7                 | 15.4 | 1,404              | 14.6 | 54.6               | 10.0 | 43.0                | 1,048 | 8.3                | 39.6 | 5.4                | 27.7 |
| Notes                     |                    |      |                     |      |                    |      |                    |      |                     |       |                    |      |                    |      |

\* *Including spouse irrespective of age*, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

<sup>1</sup> Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use (any one or more).

<sup>2</sup> Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place (any one or more).

**Table 11.9 Percentage of elderly age 60 and above with Activities of Daily Living (ADL) limitations<sup>1</sup> and Instrumental Activities of Daily Living (IADL) limitations<sup>2</sup> by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics          | Activities of Daily Living (ADL) limitations <sup>1</sup> (Age ≥ 60) |                     |         |                     |                       | Instrumental Activities of Daily Living (IADL) limitations <sup>2</sup> (Age ≥ 60) |                    |          |                        |                   |                |                |                                     | Number |
|-------------------------------------|----------------------------------------------------------------------|---------------------|---------|---------------------|-----------------------|------------------------------------------------------------------------------------|--------------------|----------|------------------------|-------------------|----------------|----------------|-------------------------------------|--------|
|                                     | Dressing                                                             | Walking across room | Bathing | Eating difficulties | Getting in/out of bed | Toilet use                                                                         | Preparing hot meal | Shopping | Making telephone calls | Taking medication | Gardening work | Managing money | Getting around in unfamiliar places |        |
| Place of residence                  |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
|                                     | Rural                                                                | 7.4                 | 7.8     | 7.6                 | 8.7                   | 12.3                                                                               | 18.0               | 19.5     | 24.8                   | 32.8              | 17.6           | 27.0           | 29.8                                | 32.3   |
| Urban                               | 6.5                                                                  | 6.6                 | 6.9     | 7.5                 | 11.5                  | 16.3                                                                               | 15.8               | 20.8     | 18.2                   | 10.9              | 25.2           | 22.4           | 23.6                                | 10,670 |
| Sex                                 |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Male                                | 6.2                                                                  | 6.4                 | 6.5     | 7.1                 | 10.2                  | 15.4                                                                               | 16.4               | 17.8     | 21.5                   | 11.5              | 20.5           | 17.5           | 19.3                                | 15,014 |
| Female                              | 8.0                                                                  | 8.5                 | 8.2     | 9.5                 | 13.8                  | 19.4                                                                               | 20.3               | 28.9     | 34.8                   | 19.4              | 31.9           | 36.7           | 39.1                                | 16,322 |
| Marital status                      |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Currently married                   | 5.5                                                                  | 5.6                 | 5.6     | 6.5                 | 10.4                  | 15.3                                                                               | 15.0               | 18.1     | 22.9                   | 11.9              | 20.6           | 20.5           | 23.0                                | 19,836 |
| Widowed                             | 9.8                                                                  | 10.5                | 10.4    | 11.4                | 15.1                  | 21.3                                                                               | 24.2               | 32.9     | 38.0                   | 22.2              | 36.2           | 39.5           | 41.0                                | 10,680 |
| Divorced/Separated/Deserted/ Others | 9.0                                                                  | 9.3                 | 7.9     | 9.2                 | 10.2                  | 17.7                                                                               | 19.2               | 25.8     | 31.1                   | 14.6              | 31.1           | 31.0           | 34.2                                | 820    |
| Living arrangement                  |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Living alone                        | 7.0                                                                  | 8.1                 | 7.8     | 10.6                | 12.8                  | 19.8                                                                               | 17.3               | 24.3     | 35.4                   | 18.6              | 34.9           | 34.7           | 44.5                                | 1,618  |
| Living with spouse and/or others    | 6.5                                                                  | 6.7                 | 6.3     | 7.9                 | 11.2                  | 15.7                                                                               | 15.4               | 17.2     | 24.3                   | 11.9              | 22.1           | 20.4           | 24.7                                | 6,134  |
| Living with spouse and children     | 5.0                                                                  | 5.1                 | 5.2     | 5.8                 | 9.9                   | 15.1                                                                               | 14.5               | 18.4     | 22.1                   | 11.8              | 19.7           | 20.4           | 22.0                                | 13,462 |
| Living with children and others     | 10.0                                                                 | 10.6                | 10.3    | 11.1                | 15.6                  | 21.3                                                                               | 24.9               | 33.8     | 37.6                   | 21.9              | 36.1           | 40.0           | 39.6                                | 8,416  |
| Living with others only             | 11.2                                                                 | 11.3                | 11.8    | 12.7                | 13.0                  | 21.0                                                                               | 26.3               | 33.8     | 39.1                   | 23.5              | 35.6           | 37.7           | 40.7                                | 1,706  |
| Religion                            |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Hindu                               | 6.9                                                                  | 7.3                 | 7.1     | 8.1                 | 11.9                  | 17.2                                                                               | 18.2               | 23.9     | 28.4                   | 15.8              | 26.6           | 28.2           | 30.2                                | 22,945 |
| Muslim                              | 9.0                                                                  | 8.7                 | 9.1     | 9.6                 | 13.5                  | 19.5                                                                               | 20.7               | 23.9     | 30.0                   | 15.8              | 26.3           | 27.3           | 30.0                                | 3,715  |
| Christian                           | 7.5                                                                  | 8.3                 | 7.8     | 11.7                | 11.7                  | 16.6                                                                               | 16.2               | 19.2     | 23.2                   | 14.3              | 28.3           | 20.8           | 27.4                                | 3,138  |
| Others                              | 6.7                                                                  | 6.8                 | 7.7     | 6.9                 | 11.9                  | 20.2                                                                               | 17.8               | 21.8     | 33.1                   | 14.6              | 24.0           | 21.3           | 22.1                                | 1,538  |
| Caste/tribe                         |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Scheduled tribe                     | 6.2                                                                  | 6.6                 | 6.4     | 7.2                 | 9.3                   | 13.6                                                                               | 15.8               | 22.4     | 28.7                   | 16.5              | 22.3           | 25.9           | 27.2                                | 5,154  |
| Scheduled caste                     | 9.0                                                                  | 8.5                 | 8.4     | 9.4                 | 12.7                  | 18.5                                                                               | 19.8               | 24.5     | 31.6                   | 17.7              | 26.5           | 30.0           | 32.2                                | 5,124  |
| Other backward class                | 6.3                                                                  | 6.7                 | 6.7     | 8.4                 | 11.2                  | 17.0                                                                               | 18.9               | 24.6     | 29.4                   | 15.8              | 29.1           | 30.0           | 32.2                                | 11,828 |
| None of the above                   | 7.6                                                                  | 8.2                 | 8.1     | 7.8                 | 13.9                  | 18.9                                                                               | 17.5               | 21.9     | 25.0                   | 13.9              | 23.5           | 22.7           | 25.0                                | 9,230  |
| Education                           |                                                                      |                     |         |                     |                       |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| No schooling                        | 8.5                                                                  | 9.0                 | 8.5     | 9.7                 | 13.4                  | 19.1                                                                               | 21.5               | 28.3     | 37.7                   | 20.2              | 30.2           | 35.7           | 38.4                                | 16,836 |
| Less than 5 years complete          | 7.2                                                                  | 7.6                 | 8.5     | 9.6                 | 15.1                  | 22.5                                                                               | 18.2               | 23.7     | 26.4                   | 13.1              | 26.9           | 23.4           | 26.5                                | 3,772  |
| 5-9 years complete                  | 5.0                                                                  | 5.6                 | 5.6     | 6.2                 | 9.2                   | 14.4                                                                               | 14.2               | 18.4     | 17.8                   | 11.2              | 22.0           | 17.7           | 18.3                                | 5,985  |
| 10 or more years complete           | 4.1                                                                  | 3.9                 | 4.3     | 4.6                 | 8.0                   | 11.1                                                                               | 11.4               | 11.5     | 6.7                    | 4.9               | 17.0           | 10.9           | 12.2                                | 4,743  |

continued

continued

| Background characteristics               | Activities of Daily Living (ADL) limitations <sup>1</sup> (Age ≥ 60) |                     |            |                     |                       | Instrumental Activities of Daily Living (IADL) limitations <sup>2</sup> (Age ≥ 60) |                    |             |                        |                   |                |                |                                     | Number        |
|------------------------------------------|----------------------------------------------------------------------|---------------------|------------|---------------------|-----------------------|------------------------------------------------------------------------------------|--------------------|-------------|------------------------|-------------------|----------------|----------------|-------------------------------------|---------------|
|                                          | Dressing                                                             | Walking across room | Bathing    | Eating difficulties | Getting in/out of bed | Toilet use                                                                         | Preparing hot meal | Shopping    | Making telephone calls | Taking medication | Gardening work | Managing money | Getting around in unfamiliar places |               |
| <b>Work status</b>                       |                                                                      |                     |            |                     |                       |                                                                                    |                    |             |                        |                   |                |                |                                     |               |
| Currently working                        | 2.2                                                                  | 1.6                 | 1.6        | 3.7                 | 5.4                   | 9.1                                                                                | 7.8                | 10.2        | 20.9                   | 8.5               | 9.8            | 13.8           | 17.2                                | 9,265         |
| Worked in past but currently not working | 9.9                                                                  | 10.5                | 10.4       | 10.9                | 15.9                  | 22.6                                                                               | 25.3               | 30.6        | 32.4                   | 18.5              | 34.1           | 32.4           | 34.4                                | 13,315        |
| Never worked                             | 8.5                                                                  | 9.5                 | 9.2        | 9.7                 | 13.8                  | 19.2                                                                               | 19.7               | 28.2        | 31.2                   | 19.5              | 33.7           | 36.0           | 36.9                                | 8,756         |
| <b>MPCE quintile</b>                     |                                                                      |                     |            |                     |                       |                                                                                    |                    |             |                        |                   |                |                |                                     |               |
| Poorest                                  | 8.2                                                                  | 8.8                 | 8.6        | 9.8                 | 12.6                  | 19.3                                                                               | 21.1               | 26.8        | 32.3                   | 18.0              | 28.7           | 31.4           | 33.5                                | 6,459         |
| Poorer                                   | 7.0                                                                  | 7.3                 | 7.2        | 8.2                 | 11.8                  | 17.0                                                                               | 18.8               | 23.5        | 30.1                   | 16.6              | 25.5           | 27.4           | 30.8                                | 6,447         |
| Middle                                   | 6.7                                                                  | 6.8                 | 6.9        | 8.4                 | 12.4                  | 17.9                                                                               | 18.1               | 22.2        | 27.5                   | 13.7              | 25.1           | 25.8           | 28.5                                | 6,387         |
| Richer                                   | 6.2                                                                  | 6.8                 | 6.3        | 7.0                 | 11.5                  | 16.0                                                                               | 16.6               | 24.0        | 28.1                   | 15.8              | 26.4           | 27.7           | 27.9                                | 6,153         |
| Richest                                  | 7.6                                                                  | 7.6                 | 7.9        | 8.0                 | 12.1                  | 17.2                                                                               | 17.0               | 21.2        | 23.4                   | 13.7              | 26.7           | 25.2           | 27.4                                | 5,890         |
| <b>Total</b>                             | <b>7.1</b>                                                           | <b>7.5</b>          | <b>7.4</b> | <b>8.4</b>          | <b>12.1</b>           | <b>17.5</b>                                                                        | <b>18.4</b>        | <b>23.7</b> | <b>28.6</b>            | <b>15.7</b>       | <b>26.5</b>    | <b>27.7</b>    | <b>29.8</b>                         | <b>31,336</b> |

Notes

<sup>1</sup> Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use.

<sup>2</sup> Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place.

**Table 11.10 Percentage of elderly age 60 and above with Activities of Daily Living (ADL) limitations and Instrumental Activities of Daily Living (IADL) limitations, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory | Activities of Daily Living (ADL) limitations <sup>1</sup> (Age ≥ 60) |                     |         |                     |                        | Instrumental Activities of Daily Living (IADL) limitations <sup>2</sup> (Age ≥ 60) |                    |          |                        |                   |                |                |                                     |        |
|------------------------|----------------------------------------------------------------------|---------------------|---------|---------------------|------------------------|------------------------------------------------------------------------------------|--------------------|----------|------------------------|-------------------|----------------|----------------|-------------------------------------|--------|
|                        | Dressing                                                             | Walking across room | Bathing | Eating difficulties | Getting in/ out of bed | Toilet use                                                                         | Preparing hot meal | Shopping | Making telephone calls | Taking medication | Gardening work | Managing money | Getting around in unfamiliar places | Number |
| India                  | 7.1                                                                  | 7.5                 | 7.4     | 8.4                 | 12.1                   | 17.5                                                                               | 18.4               | 23.7     | 28.6                   | 15.7              | 26.5           | 27.7           | 29.8                                | 31,336 |
| North                  |                                                                      |                     |         |                     |                        |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Chandigarh             | 8.3                                                                  | 6.4                 | 8.1     | 2.8                 | 6.2                    | 14.5                                                                               | 12.4               | 20.9     | 12.8                   | 7.1               | 19.4           | 13.7           | 19.3                                | 384    |
| Delhi                  | 8.8                                                                  | 11.7                | 7.1     | 10.7                | 8.9                    | 14.5                                                                               | 14.6               | 15.9     | 18.5                   | 15.4              | 18.0           | 14.2           | 20.1                                | 494    |
| Haryana                | 3.8                                                                  | 4.9                 | 4.8     | 6.7                 | 4.5                    | 8.2                                                                                | 16.2               | 18.1     | 28.4                   | 9.4               | 23.2           | 26.6           | 18.5                                | 847    |
| Himachal Pradesh       | 10.7                                                                 | 11.0                | 13.1    | 10.7                | 18.7                   | 16.9                                                                               | 20.9               | 25.0     | 25.2                   | 17.7              | 30.5           | 28.9           | 24.6                                | 617    |
| Jammu & Kashmir        | 9.7                                                                  | 11.0                | 12.6    | 10.2                | 13.0                   | 15.7                                                                               | 36.0               | 42.2     | 49.3                   | 30.4              | 38.0           | 45.4           | 35.5                                | 730    |
| Punjab                 | 5.2                                                                  | 5.0                 | 5.8     | 3.8                 | 5.8                    | 14.8                                                                               | 13.9               | 15.3     | 33.3                   | 10.0              | 21.2           | 16.9           | 17.0                                | 1,001  |
| Rajasthan              | 3.8                                                                  | 4.2                 | 3.8     | 3.1                 | 2.9                    | 3.7                                                                                | 6.8                | 15.3     | 19.8                   | 14.7              | 14.7           | 22.9           | 19.7                                | 1,077  |
| Uttarakhand            | 9.0                                                                  | 8.4                 | 6.7     | 6.9                 | 13.2                   | 14.2                                                                               | 12.5               | 20.6     | 24.5                   | 14.8              | 23.9           | 23.5           | 25.8                                | 641    |
| Central                |                                                                      |                     |         |                     |                        |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Chhattisgarh           | 6.5                                                                  | 8.5                 | 5.8     | 6.8                 | 6.0                    | 10.1                                                                               | 17.0               | 17.6     | 31.1                   | 12.3              | 18.3           | 20.6           | 21.4                                | 779    |
| Madhya Pradesh         | 10.3                                                                 | 8.9                 | 9.4     | 16.5                | 13.4                   | 18.5                                                                               | 17.9               | 24.2     | 23.2                   | 16.9              | 26.0           | 32.0           | 31.5                                | 1,312  |
| Uttar Pradesh          | 7.6                                                                  | 6.6                 | 6.6     | 6.1                 | 6.4                    | 10.5                                                                               | 13.7               | 20.7     | 28.2                   | 16.8              | 22.2           | 28.4           | 28.0                                | 2,165  |
| East                   |                                                                      |                     |         |                     |                        |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Bihar                  | 5.0                                                                  | 4.6                 | 5.1     | 7.6                 | 11.3                   | 20.7                                                                               | 22.0               | 27.1     | 37.6                   | 21.6              | 28.3           | 29.2           | 34.9                                | 1,806  |
| Jharkhand              | 4.6                                                                  | 6.4                 | 6.6     | 4.2                 | 7.4                    | 17.7                                                                               | 26.9               | 27.5     | 32.1                   | 16.7              | 22.5           | 25.0           | 26.3                                | 1,166  |
| Odisha                 | 6.8                                                                  | 6.7                 | 5.6     | 3.5                 | 8.2                    | 14.3                                                                               | 11.3               | 12.6     | 11.3                   | 10.0              | 12.8           | 12.7           | 10.9                                | 1,230  |
| West Bengal            | 14.4                                                                 | 13.2                | 14.2    | 11.4                | 25.3                   | 30.5                                                                               | 25.5               | 27.7     | 30.2                   | 15.9              | 35.2           | 32.8           | 43.9                                | 1,541  |
| Northeast              |                                                                      |                     |         |                     |                        |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Arunachal Pradesh      | 7.1                                                                  | 3.6                 | 3.8     | 8.1                 | 6.7                    | 5.9                                                                                | 9.8                | 9.8      | 10.5                   | 7.0               | 8.7            | 11.3           | 9.8                                 | 318    |
| Assam                  | 5.2                                                                  | 5.1                 | 6.7     | 4.2                 | 9.0                    | 15.5                                                                               | 21.9               | 29.8     | 28.2                   | 22.6              | 24.7           | 24.7           | 21.2                                | 814    |
| Manipur                | 6.0                                                                  | 3.7                 | 5.1     | 1.7                 | 2.2                    | 5.1                                                                                | 10.0               | 18.0     | 26.0                   | 7.3               | 17.2           | 24.1           | 25.7                                | 605    |
| Meghalaya              | 5.9                                                                  | 6.3                 | 6.2     | 4.5                 | 6.4                    | 8.4                                                                                | 12.1               | 14.0     | 19.6                   | 7.5               | 12.2           | 17.6           | 23.5                                | 411    |
| Mizoram                | 8.0                                                                  | 4.2                 | 10.0    | 5.6                 | 8.9                    | 11.1                                                                               | 11.4               | 14.0     | 9.3                    | 5.7               | 23.1           | 17.6           | 23.8                                | 531    |
| Nagaland               | 2.4                                                                  | 2.1                 | 2.2     | 1.3                 | 3.3                    | 5.9                                                                                | 5.9                | 10.2     | 10.3                   | 3.1               | 10.5           | 11.5           | 11.8                                | 607    |
| Tripura                | 3.4                                                                  | 2.7                 | 4.1     | 4.0                 | 9.7                    | 11.4                                                                               | 8.5                | 13.5     | 28.4                   | 7.5               | 14.7           | 15.9           | 19.9                                | 459    |
| West                   |                                                                      |                     |         |                     |                        |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Dadra & Nagar Haveli   | 5.8                                                                  | 6.4                 | 5.0     | 10.9                | 7.2                    | 13.8                                                                               | 10.6               | 17.0     | 24.2                   | 11.8              | 16.2           | 25.5           | 30.4                                | 446    |
| Daman & Diu            | 14.5                                                                 | 9.0                 | 7.0     | 8.8                 | 15.1                   | 18.9                                                                               | 11.5               | 20.9     | 19.8                   | 12.9              | 18.4           | 16.8           | 19.2                                | 427    |
| Goa                    | 11.3                                                                 | 13.7                | 11.2    | 12.9                | 21.6                   | 22.2                                                                               | 11.0               | 18.0     | 6.2                    | 7.5               | 24.9           | 15.6           | 18.0                                | 634    |
| Gujarat                | 7.2                                                                  | 4.8                 | 6.0     | 12.2                | 8.3                    | 14.7                                                                               | 8.6                | 17.6     | 17.5                   | 9.5               | 15.0           | 15.3           | 22.6                                | 979    |
| Maharashtra            | 6.9                                                                  | 10.1                | 9.9     | 8.0                 | 22.4                   | 31.4                                                                               | 21.1               | 27.1     | 29.3                   | 16.3              | 23.5           | 23.8           | 23.9                                | 1,780  |

continued

continued

| States/Union Territory    | Activities of Daily Living (ADL) limitations <sup>1</sup> (Age ≥ 60) |                     |         |                     |                        | Instrumental Activities of Daily Living (IADL) limitations <sup>2</sup> (Age ≥ 60) |                    |          |                        |                   |                |                |                                     | Number |
|---------------------------|----------------------------------------------------------------------|---------------------|---------|---------------------|------------------------|------------------------------------------------------------------------------------|--------------------|----------|------------------------|-------------------|----------------|----------------|-------------------------------------|--------|
|                           | Dressing                                                             | Walking across room | Bathing | Eating difficulties | Getting in/ out of bed | Toilet use                                                                         | Preparing hot meal | Shopping | Making telephone calls | Taking medication | Gardening work | Managing money | Getting around in unfamiliar places |        |
| <b>South</b>              |                                                                      |                     |         |                     |                        |                                                                                    |                    |          |                        |                   |                |                |                                     |        |
| Andaman & Nicobar Islands | 11.1                                                                 | 9.9                 | 11.7    | 8.9                 | 16.3                   | 23.8                                                                               | 17.7               | 18.9     | 15.0                   | 13.3              | 24.1           | 21.0           | 18.2                                | 521    |
| Andhra Pradesh            | 8.1                                                                  | 9.1                 | 8.5     | 6.5                 | 10.3                   | 11.4                                                                               | 19.4               | 22.7     | 32.2                   | 12.8              | 29.5           | 27.1           | 37.1                                | 1,098  |
| Karnataka                 | 4.5                                                                  | 4.1                 | 3.5     | 5.4                 | 9.9                    | 11.0                                                                               | 23.3               | 30.7     | 38.0                   | 16.8              | 42.0           | 42.4           | 36.9                                | 999    |
| Kerala                    | 8.6                                                                  | 7.9                 | 9.9     | 9.7                 | 11.7                   | 17.0                                                                               | 13.8               | 23.4     | 18.8                   | 10.7              | 27.8           | 19.9           | 21.4                                | 1,203  |
| Lakshadweep               | 6.4                                                                  | 6.4                 | 9.9     | 9.4                 | 11.6                   | 20.2                                                                               | 8.5                | 14.4     | 12.4                   | 11.3              | 25.9           | 18.7           | 18.8                                | 500    |
| Puducherry                | 5.8                                                                  | 5.8                 | 7.1     | 6.4                 | 6.1                    | 8.9                                                                                | 11.1               | 16.4     | 13.1                   | 9.3               | 19.0           | 12.5           | 27.8                                | 637    |
| Tamil Nadu                | 4.6                                                                  | 8.3                 | 5.7     | 14.2                | 10.7                   | 19.2                                                                               | 21.1               | 22.1     | 26.7                   | 15.0              | 35.0           | 30.8           | 39.5                                | 1,529  |
| Telangana                 | 7.8                                                                  | 7.5                 | 6.6     | 4.5                 | 8.4                    | 10.0                                                                               | 21.5               | 22.8     | 44.4                   | 10.7              | 27.8           | 25.1           | 35.9                                | 1,048  |

Notes

<sup>1</sup> Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use.

<sup>2</sup> Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place.

**Table 11.11 Percentage of older adults with ADL/IADL limitations who needed helper by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                  | Helper <sup>1</sup> |               |             |               |             |               |
|---------------------------------------------|---------------------|---------------|-------------|---------------|-------------|---------------|
|                                             | Age 45-59*          | Number        | Age ≥ 60    | Number        | Total       | Number        |
| <b>Place of residence</b>                   |                     |               |             |               |             |               |
| Rural                                       | 12.5                | 7,198         | 23.8        | 10,433        | 19.4        | 17,631        |
| Urban                                       | 17.0                | 2,992         | 27.9        | 4,513         | 23.6        | 7,505         |
| <b>Sex</b>                                  |                     |               |             |               |             |               |
| Male                                        | 17.8                | 2,611         | 23.4        | 5,829         | 21.7        | 8,440         |
| Female                                      | 12.2                | 7,579         | 25.7        | 9,117         | 19.8        | 16,696        |
| <b>Marital status</b>                       |                     |               |             |               |             |               |
| Currently married                           | 13.4                | 8,425         | 20.9        | 8,179         | 17.1        | 16,604        |
| Widowed                                     | 14.6                | 1,362         | 30.0        | 6,361         | 27.6        | 7,723         |
| Divorced/Separated/Deserted/<br>Others      | 17.9                | 403           | 17.3        | 406           | 17.6        | 809           |
| <b>Living arrangement</b>                   |                     |               |             |               |             |               |
| Living alone                                | 5.2                 | 205           | 12.3        | 908           | 11.2        | 1,113         |
| Living with spouse and/or others            | 10.7                | 1,257         | 19.8        | 2,583         | 16.9        | 3,840         |
| Living with spouse and children             | 13.9                | 7,008         | 21.3        | 5,490         | 17.1        | 12,498        |
| Living with children and others             | 15.5                | 1,377         | 32.5        | 4,972         | 29.2        | 6,349         |
| Living with others only                     | 18.5                | 343           | 31.4        | 993           | 28.7        | 1,336         |
| <b>Religion</b>                             |                     |               |             |               |             |               |
| Hindu                                       | 12.5                | 7,701         | 24.3        | 11,142        | 19.8        | 18,843        |
| Muslim                                      | 20.8                | 1,427         | 29.1        | 1,896         | 25.3        | 3,323         |
| Christian                                   | 11.1                | 596           | 27.9        | 1,195         | 21.4        | 1,791         |
| Others                                      | 11.5                | 466           | 21.0        | 713           | 17.4        | 1,179         |
| <b>Caste/tribe</b>                          |                     |               |             |               |             |               |
| Scheduled tribe                             | 12.0                | 1,521         | 24.7        | 2,162         | 19.3        | 3,683         |
| Scheduled caste                             | 11.3                | 1,981         | 24.1        | 2,595         | 18.8        | 4,576         |
| Other backward class                        | 15.6                | 3,976         | 23.9        | 5,886         | 20.7        | 9,862         |
| None of the above                           | 12.7                | 2,712         | 27.0        | 4,303         | 21.7        | 7,015         |
| <b>Education</b>                            |                     |               |             |               |             |               |
| No schooling                                | 14.7                | 5,716         | 23.7        | 9,511         | 20.3        | 15,227        |
| Less than 5 years complete                  | 13.6                | 1,091         | 26.8        | 1,798         | 21.8        | 2,889         |
| 5-9 years complete                          | 12.2                | 2,201         | 27.8        | 2,273         | 20.4        | 4,474         |
| 10 or more years complete                   | 10.4                | 1,182         | 26.0        | 1,364         | 19.4        | 2,546         |
| <b>Work status</b>                          |                     |               |             |               |             |               |
| Currently working                           | 9.1                 | 5,153         | 10.8        | 3,238         | 9.8         | 8,391         |
| Worked in past but currently not<br>working | 26.9                | 1,674         | 30.2        | 7,086         | 29.5        | 8,760         |
| Never worked                                | 13.4                | 3,363         | 27.2        | 4,622         | 21.8        | 7,985         |
| <b>MPCE quintile</b>                        |                     |               |             |               |             |               |
| Poorest                                     | 10.6                | 2,055         | 21.7        | 3,195         | 17.4        | 5,250         |
| Poorer                                      | 11.7                | 2,154         | 24.7        | 3,108         | 19.5        | 5,262         |
| Middle                                      | 16.2                | 1,950         | 25.9        | 3,026         | 22.2        | 4,976         |
| Richer                                      | 11.9                | 2,079         | 27.3        | 2,933         | 21.2        | 5,012         |
| Richest                                     | 19.7                | 1,952         | 25.1        | 2,684         | 23.0        | 4,636         |
| <b>Total</b>                                | <b>13.7</b>         | <b>10,190</b> | <b>24.8</b> | <b>14,946</b> | <b>20.4</b> | <b>25,136</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Helper refers to any person/s assisting respondent in any ADL/IADL limitations.

**Table 11.12 Percentage of older adults with ADL/IADL limitations who needed helper, states/UTs, LASI Wave 1, 2017-18**

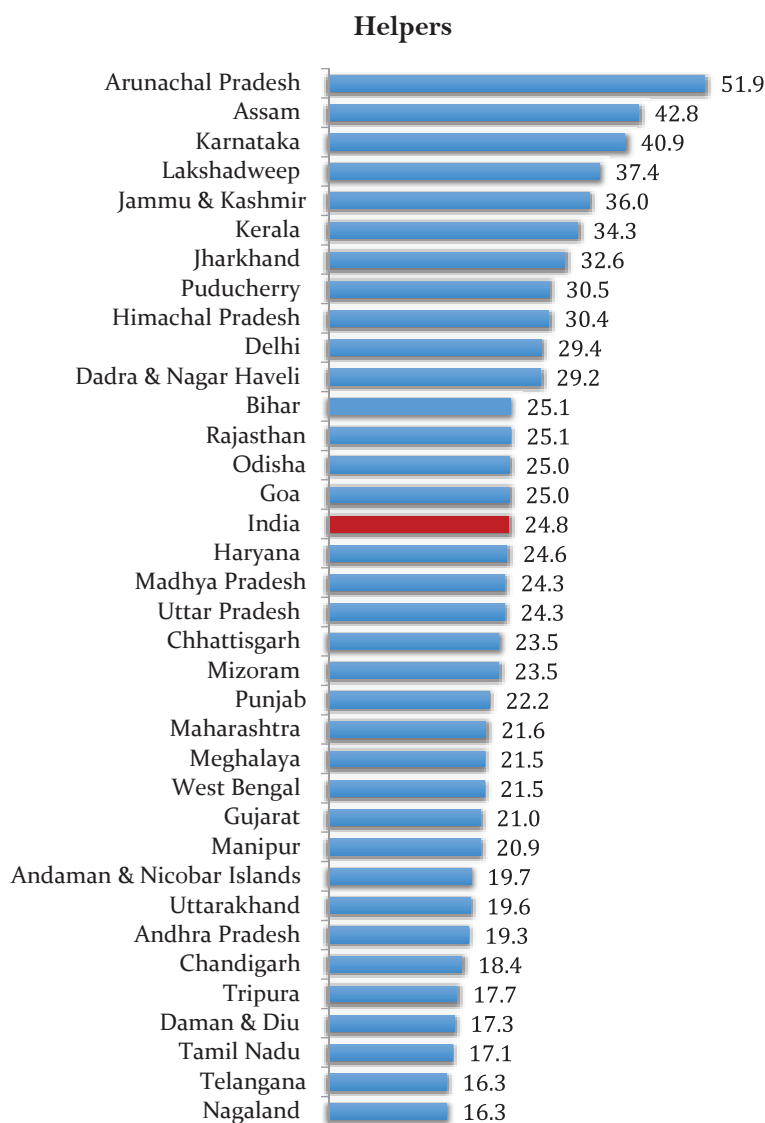
| State/Union Territory     | Helper <sup>1</sup> |               |             |               |             |               |
|---------------------------|---------------------|---------------|-------------|---------------|-------------|---------------|
|                           | Age 45-59*          | Number        | Age ≥ 60    | Number        | Total       | Number        |
| <b>India</b>              | <b>13.7</b>         | <b>10,190</b> | <b>24.8</b> | <b>14,946</b> | <b>20.4</b> | <b>25,136</b> |
| <b>North</b>              |                     |               |             |               |             |               |
| Chandigarh                | 4.1                 | 112           | 18.4        | 143           | 13.0        | 255           |
| Delhi                     | 21.8                | 145           | 29.4        | 184           | 26.3        | 329           |
| Haryana                   | 10.2                | 224           | 24.6        | 375           | 19.7        | 599           |
| Himachal Pradesh          | 16.4                | 191           | 30.4        | 312           | 25.6        | 503           |
| Jammu & Kashmir           | 17.4                | 321           | 36.0        | 443           | 29.4        | 764           |
| Punjab                    | 19.5                | 313           | 22.2        | 497           | 21.2        | 810           |
| Rajasthan                 | 12.7                | 139           | 25.1        | 341           | 21.7        | 480           |
| Uttarakhand               | 2.0                 | 171           | 19.6        | 293           | 13.3        | 464           |
| <b>Central</b>            |                     |               |             |               |             |               |
| Chhattisgarh              | 9.5                 | 330           | 23.5        | 344           | 16.9        | 674           |
| Madhya Pradesh            | 7.4                 | 411           | 24.3        | 610           | 18.8        | 1,021         |
| Uttar Pradesh             | 13.1                | 575           | 24.3        | 990           | 20.3        | 1,565         |
| <b>East</b>               |                     |               |             |               |             |               |
| Bihar                     | 17.0                | 627           | 25.1        | 1,000         | 22.3        | 1,627         |
| Jharkhand                 | 26.8                | 315           | 32.6        | 595           | 30.6        | 910           |
| Odisha                    | 13.2                | 269           | 25.0        | 398           | 20.5        | 667           |
| West Bengal               | 4.7                 | 940           | 21.5        | 953           | 13.3        | 1,893         |
| <b>Northeast</b>          |                     |               |             |               |             |               |
| Arunachal Pradesh         | 25.9                | 90            | 51.9        | 77            | 36.9        | 167           |
| Assam                     | 23.7                | 377           | 42.8        | 399           | 34.1        | 776           |
| Manipur                   | 5.2                 | 167           | 20.9        | 280           | 15.5        | 447           |
| Meghalaya                 | 8.3                 | 73            | 21.5        | 132           | 16.8        | 205           |
| Mizoram                   | 23.0                | 45            | 23.5        | 180           | 23.4        | 225           |
| Nagaland                  | 3.6                 | 33            | 16.3        | 137           | 13.6        | 170           |
| Tripura                   | 7.1                 | 177           | 17.7        | 186           | 12.6        | 363           |
| <b>West</b>               |                     |               |             |               |             |               |
| Dadra & Nagar Haveli      | 16.3                | 196           | 29.2        | 220           | 23.2        | 416           |
| Daman & Diu               | 6.5                 | 160           | 17.3        | 204           | 12.7        | 364           |
| Goa                       | 7.8                 | 171           | 25.0        | 296           | 19.0        | 467           |
| Gujarat                   | 17.8                | 348           | 21.0        | 428           | 19.6        | 776           |
| Maharashtra               | 9.6                 | 637           | 21.6        | 1,004         | 17.3        | 1,641         |
| <b>South</b>              |                     |               |             |               |             |               |
| Andaman & Nicobar Islands | 2.0                 | 147           | 19.7        | 237           | 12.8        | 384           |
| Andhra Pradesh            | 8.0                 | 422           | 19.3        | 558           | 14.7        | 980           |
| Karnataka                 | 32.7                | 502           | 40.9        | 622           | 37.2        | 1,124         |
| Kerala                    | 33.7                | 206           | 34.3        | 541           | 34.2        | 747           |
| Lakshadweep               | 31.6                | 116           | 37.4        | 202           | 35.2        | 318           |
| Puducherry                | 6.5                 | 193           | 30.5        | 287           | 21.2        | 480           |
| Tamil Nadu                | 7.9                 | 631           | 17.1        | 873           | 13.3        | 1,504         |
| Telangana                 | 5.6                 | 416           | 16.3        | 605           | 12.2        | 1,021         |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Helper refers to any person/s assisting respondent in any ADL/IADL limitations.

**Figure 11.3 Percentage of elderly age 60 and above who needed helper for ADL/IADL Limitations, states/ UTs, LASI Wave 1, 2017-18**



## 11.6 HELPERS

Respondents were also asked whether they received any help from someone to carry out ADL or IADL. The helper could have been any household member, relative, paid professional or non-professional, or any other person; additionally, there could be more than one helper.

Table 11.11 presents the percentage of older adults who needed a helper to carry out their ADL and IADL activities by background characteristics. Overall in India, 20% of older adults age 45 and above with any ADL and/or IADL limitations needed a helper to perform ADL and IADL. A quarter (25%) of elderly age 60 and above with any ADL and/or IADL limitations needed a helper, compared to 14% among older adults age 45-59. The percentage of older adults age 45 and above who needed a helper is higher in urban areas (24%) than rural areas (19%). Among the elderly age 60 and above, the need for helper is higher among women (26%) than the men (23%), and higher among the widowed (30%) than currently married (21%) as well as divorced/separated/deserted/others (17%). In contrast, among the older adults age 45-59, the need for helper is higher among men (18%) than women (12%). The percentage of older adults and elderly needing helper increases with MPCE quintile.



Among older adults age 45 and above, the need for helper ranges from 12% in Telangana to 37% in Karnataka. A higher percentage of elderly in the state of Arunachal Pradesh (52%) and more than one third of elderly needed a helper to assist in their daily activities in the states/UTs of Assam (43%), Karnataka (41%) Lakshadweep (37%) and Jammu & Kashmir (36%).

#### Key findings: ADL and IADL limitations and helpers

- A quarter of elderly age 60 and above (24%) reported having at least one ADL limitation; 14% reported having two or more ADL limitations; close to half of elderly age 60 and above reported having at least one IADL limitation (48%) and; more than a third reported having two or more IADL limitations (37%).
- Older adults as well as elderly women, those residing in rural areas, widowed, those living alone or with others and those worked in past but currently not working are more likely to have ADL and IADL limitations. The proportion of elderly age 60 and above with ADL limitations do not vary much by education or MPCE quintile; however, elderly with no schooling and in poorest MPCE quintile are more likely to have IADL limitations.
- Difficulty in using toilet facility is most common ADL limitation faced by elderly age 60 and above; whereas, among IADL limitations, getting around in unfamiliar places is most common difficulty reported by elderly.
- A higher proportion of elderly age 60 and above reported having ADL limitations in West Bengal and; a higher proportion of elderly in Jammu & Kashmir reported having IADL limitations.
- Overall, 20% of older adults age 45 and above needed a helper to perform daily activities of living and a quarter (25%) of elderly age 60 and above with any ADL and/or IADL limitations needed a helper. Elderly who are widowed, women, living with children and others and in richest MPCE quintile are more likely to seek helper to assist in daily activities.
- Need of helper is higher among elderly age 60 and above in the states/UTs of Arunachal Pradesh (52%), Assam (43%), Karnataka (41%) Lakshadweep (37%) and Jammu & Kashmir (36%).

## 11.7 USE OF AIDS OR SUPPORTIVE DEVICES

Use of assistive technology (AT) or supportive devices is defined as “the application of organized knowledge and skills, procedures and systems related to provision of assistive products, whose primary purpose is to maintain or improve an individual’s functioning and independence, facilitate participation, and enhance overall well-being and quality of life”(WHO, 2014b). Use of AT or supportive devices provides significant support and benefits for older adults in various ways: safety and prevention (i.e., prevention of falls), mobility and independence, social connectivity and ease of living, preservation of cognitive abilities, delays in depression and functional loss and improved well-being and quality of life.

All LASI survey participants were asked about the use of any aid or supportive device to assist them in their ADL. Any aid or supportive devices includes hearing aid, spectacles/contact lenses, dentures, and any aid for physical disabilities, such as walker/walking sticks, wheelchairs, adjustable shower tools/ commodes, back/neck collar, any orthosis or prosthesis, and any other aid.

Table 11.13 presents the percentage of older adults using aids/supportive devices by background characteristics. Overall, more than a third of older adults age 45 and above (36%) reported having used any aid or supportive device; this proportions is much higher among the elderly age 60 and above (43%) compared with older adults age 45-59 (30%). A higher percentage of older adult men (40%) reported using any aid or supportive devices than did older adult women (33%); this sex difference is less pronounced among the elderly age 60 and above compared to older adults age 45-59. Around three fifth of the elderly age 60 and above residing in urban areas (59%) have used any aid or supportive device, compared with 37% in rural areas; this proportion increases with educational attainment and MPCE quintile, ranging from 33% in those with no schooling and 32% in the poorest quintile to 70% in those with 10 or more years of schooling and 54% in the richest MPCE quintile.

Overall in India, 33% of older adults age 45 and above reported using spectacles/contact lenses; 6% are using aids for physical disability; 2% are using dentures, and less than 1% are using hearing aids (0.5%). The proportion of elderly age 60 and above (10%) using aids for physical disability is six times compared with older adults age 45-59 (1.6%). Among the elderly age 60 and above, the use of aids for physical disability is higher in rural (11%) than in urban areas (8%), whereas the use of spectacles/contact lenses (56%), hearing aids (1.1%), and dentures (5%) are higher in urban areas compared with their rural counterparts. Compared to elderly women, a higher proportion of elderly men age 60 and above reported using hearing aids, dentures, spectacles/contact lenses, or an aid for physical disability. The proportion of elderly age 60 and above using spectacles/contact lenses, dentures, or hearing aids is higher among those with 10 or more years of schooling, whereas the use of aids for physical disability is higher among those with lower education. Use of all types of aids or supportive devices is higher in the richest MPCE quintile.

Table 11.14 presents state variations in the use of aids or supportive devices. Use of any aid or supportive device among older adults age 45 and above is higher in the western states, and is comparatively lower in central and eastern Indian states, ranging from 67% in Goa to 12% in Meghalaya. A fifth of elderly age 60 and above are using dentures in Chandigarh (20%) and Mizoram (20%). The percentage of elderly age 60 and above using an aid for physical disability is highest in Telangana (18%), followed by Manipur (18%), Himachal Pradesh, and Jammu & Kashmir (16% each). Among the elderly age 60 and above, the use of spectacles/contact lenses is comparatively lower in the states of Meghalaya (15%), Nagaland (14%), Odisha (11%), and Arunachal Pradesh (6%).

### Key findings: use of aids or supportive devices

- In India, 43% of the elderly age 60 and above have been using any aid or supportive devices. More than half of elderly in urban areas of India reported using any aid or supportive devices. Apart from spectacles/contact lenses, a higher proportion of the elderly age 60 and above reported using aids for physical disabilities.
- Elderly age 60 and above with higher education and those in richest MPCE quintile are more likely to use aid/ supportive device.
- Use of any aid or supportive device among older adults age 45 and above is higher in the western states, and is comparatively lower in central and eastern Indian states, ranging from 67% in Goa to 12% in Meghalaya.

**Table 11.13 Percentage of older adults using aids or supportive devices<sup>1</sup> by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics          | Age 45-59*                       |                            |         |                                     |                               |                            |             |                            |         |                                     | Age ≥ 60                      |        |             |                            |         |                                     |                               |        |             |                            | Total                         |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|-------------------------------------|----------------------------------|----------------------------|---------|-------------------------------------|-------------------------------|----------------------------|-------------|----------------------------|---------|-------------------------------------|-------------------------------|--------|-------------|----------------------------|---------|-------------------------------------|-------------------------------|--------|-------------|----------------------------|-------------------------------|-------------------------------------|-------------------------------|--------|-------------|-------------------------------------|---------|-------------------------------------|-------------------------------|--|-------------------------------|--|--|--|--|
|                                     | Hearing aid                      |                            |         |                                     |                               | Spectacles/ Contact lenses |             |                            |         |                                     | Denture                       |        |             |                            |         | Aids used for physical disabilities |                               |        |             |                            | Any aid or supportive devices |                                     |                               |        |             | Aids used for physical disabilities |         |                                     |                               |  | Any aid or supportive devices |  |  |  |  |
|                                     | Hearing aid                      | Spectacles/ Contact lenses | Denture | Aids used for physical disabilities | Any aid or supportive devices | Number                     | Hearing aid | Spectacles/ Contact lenses | Denture | Aids used for physical disabilities | Any aid or supportive devices | Number | Hearing aid | Spectacles/ Contact lenses | Denture | Aids used for physical disabilities | Any aid or supportive devices | Number | Hearing aid | Spectacles/ Contact lenses | Denture                       | Aids used for physical disabilities | Any aid or supportive devices | Number | Hearing aid | Spectacles/ Contact lenses          | Denture | Aids used for physical disabilities | Any aid or supportive devices |  |                               |  |  |  |  |
| Place of residence                  |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Rural                            | 0.2                        | 22.8    | 1.1                                 | 1.2                           | 24.0                       | 25,718      | 0.6                        | 30.0    | 2.1                                 | 10.9                          | 36.8   | 20,663      | 0.4                        | 26.2    | 1.6                                 | 5.8                           | 30.1   | 46,381      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Urban                            | 0.5                        | 41.7    | 2.3                                 | 2.3                           | 42.7                       | 14,884      | 1.1                        | 55.7    | 5.4                                 | 8.1                           | 59.0   | 10,670      | 0.7                        | 47.6    | 3.6                                 | 4.7                           | 49.6   | 25,554      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Sex                                 |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Male                             | 0.5                        | 34.2    | 1.9                                 | 2.5                           | 35.6                       | 15,394      | 0.9                        | 38.2    | 3.3                                 | 10.9                          | 44.6   | 15,012      | 0.7                        | 36.3    | 2.6                                 | 6.8                           | 40.3   | 30,406      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Female                              | 0.2                              | 26.2                       | 1.3     | 1.1                                 | 27.2                          | 25,208                     | 0.6         | 36.8                       | 2.9     | 9.4                                 | 42.0                          | 16,321 | 0.3         | 30.6                       | 2.0     | 4.5                                 | 33.3                          | 41,529 |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Marital status                      |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Currently married                | 0.3                        | 29.7    | 1.5                                 | 1.6                           | 30.8                       | 35,318      | 0.7                        | 38.0    | 3.1                                 | 8.4                           | 43.1   | 19,834      | 0.4                        | 32.8    | 2.1                                 | 4.1                           | 35.4   | 55,152      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Widowed                          | 0.2                        | 27.2    | 1.4                                 | 1.3                           | 28.9                       | 3,855       | 0.8                        | 37.1    | 2.9                                 | 13.2                          | 44.2   | 10,679      | 0.7                        | 34.8    | 2.6                                 | 10.4                          | 40.7   | 14,534      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Divorced/Separated/Deserted/ Others | [0.2]                            | 18.9                       | 1.2     | 2.0                                 | 21.5                          | 1,429                      | 0.2         | 26.2                       | 3.6     | 7.2                                 | 31.9                          | 820    | 0.2         | 21.5                       | 2.1     | 3.9                                 | 25.3                          | 2,249  |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Living arrangement                  |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Living alone                     | -                          | 32.2    | 1.5                                 | 0.8                           | 33.5                       | 688         | 1.6                        | 32.8    | 3.2                                 | 10.9                          | 38.9   | 1,617       | 1.3                        | 32.6    | 2.8                                 | 8.6                           | 37.7   | 2,305       |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Living with spouse and/or others | 0.2                        | 31.4    | 1.5                                 | 1.3                           | 32.5                       | 4,476       | 0.8                        | 37.0    | 2.9                                 | 9.2                           | 42.4   | 6,134       | 0.6                        | 34.7    | 2.3                                 | 5.9                           | 38.3   | 10,610      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Living with spouse and children     | 0.3                              | 29.3                       | 1.5     | 1.7                                 | 30.4                          | 30,189                     | 0.7         | 38.6                       | 3.3     | 8.0                                 | 43.4                          | 13,460 | 0.4         | 32.3                       | 2.1     | 3.7                                 | 34.5                          | 43,649 |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Living with children and others     | 0.1                              | 26.6                       | 1.6     | 1.2                                 | 28.1                          | 4,076                      | 0.6         | 38.7                       | 3.0     | 13.2                                | 45.6                          | 8,416  | 0.5         | 35.2                       | 2.6     | 9.7                                 | 40.6                          | 12,492 |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Living with others only             | 0.6                              | 22.6                       | 0.9     | 2.5                                 | 25.6                          | 1,173                      | 0.5         | 29.5                       | 2.7     | 12.6                                | 37.6                          | 1,706  | 0.6         | 26.9                       | 2.1     | 8.8                                 | 33.1                          | 2,879  |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Religion                            |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Hindu                            | 0.3                        | 28.7    | 1.1                                 | 1.3                           | 29.9                       | 29,803      | 0.7                        | 37.5    | 3.1                                 | 10.3                          | 43.3   | 22,942      | 0.5                        | 32.8    | 2.0                                 | 5.4                           | 36.1   | 52,745      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Muslim                              | 0.2                              | 32.4                       | 3.6     | 3.9                                 | 33.6                          | 4,909                      | 0.8         | 37.9                       | 1.8     | 8.0                                 | 42.4                          | 3,715  | 0.5         | 34.8                       | 2.8     | 5.7                                 | 37.4                          | 8,624  |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Christian                        | [0.1]                      | 22.0    | 1.5                                 | 0.9                           | 23.0                       | 4,054       | 0.9                        | 28.0    | 4.1                                 | 9.8                           | 34.6   | 3,138       | 0.5                        | 24.7    | 2.7                                 | 4.8                           | 28.2   | 7,192       |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Others                              | 0.1                              | 34.2                       | 3.2     | 1.9                                 | 36.1                          | 1,836                      | 0.6         | 43.1                       | 6.0     | 12.8                                | 50.3                          | 1,538  | 0.4         | 38.5                       | 4.6     | 7.2                                 | 43.0                          | 3,374  |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Caste/tribe                         |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Scheduled tribe                  | 0.1                        | 14.4    | 0.5                                 | 1.1                           | 15.7                       | 7,317       | 0.1                        | 18.5    | 1.0                                 | 10.2                          | 26.3   | 5,154       | 0.1                        | 16.2    | 0.7                                 | 5.1                           | 20.3   | 12,471      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Scheduled caste                     | 0.2                              | 22.8                       | 0.9     | 1.0                                 | 24.0                          | 6,879                      | 0.4         | 31.2                       | 1.6     | 10.5                                | 36.5                          | 5,124  | 0.3         | 26.6                       | 1.2     | 5.3                                 | 29.6                          | 12,003 |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | Other backward class             | 0.4                        | 28.1    | 1.8                                 | 1.9                           | 29.1                       | 15,225      | 0.7                        | 36.4    | 2.9                                 | 9.5                           | 42.3   | 11,826      | 0.5                        | 31.8    | 2.3                                 | 5.4                           | 35.1   | 27,051      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| None of the above                   | 0.3                              | 40.9                       | 1.9     | 1.6                                 | 42.3                          | 11,181                     | 1.1         | 49.0                       | 4.9     | 10.7                                | 54.4                          | 9,229  | 0.7         | 44.7                       | 3.3     | 5.9                                 | 48.1                          | 20,410 |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Education                           |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | No schooling                     | 0.2                        | 15.1    | 1.5                                 | 2.0                           | 16.6                       | 16,256      | 0.5                        | 26.1    | 1.7                                 | 10.7                          | 33.1   | 16,834      | 0.3                        | 20.9    | 1.6                                 | 6.6                           | 25.3   | 33,090      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| Less than 5 years complete          | 0.2                              | 27.0                       | 1.3     | 1.4                                 | 28.1                          | 4,256                      | 0.7         | 42.0                       | 3.8     | 13.8                                | 48.4                          | 3,771  | 0.4         | 34.3                       | 2.5     | 7.4                                 | 38.0                          | 8,027  |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     | 5-9 years complete               | 0.1                        | 36.8    | 1.6                                 | 1.2                           | 37.8                       | 10,853      | 0.7                        | 47.5    | 3.7                                 | 7.5                           | 51.4   | 5,985       | 0.3                        | 40.9    | 2.4                                 | 3.6                           | 43.1   | 16,838      |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
| 10 or more years complete           | 0.7                              | 49.6                       | 1.6     | 1.3                                 | 50.2                          | 9,237                      | 1.8         | 67.2                       | 7.4     | 7.7                                 | 70.0                          | 4,743  | 1.1         | 55.7                       | 3.6     | 3.5                                 | 57.0                          | 13,980 |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |
|                                     |                                  |                            |         |                                     |                               |                            |             |                            |         |                                     |                               |        |             |                            |         |                                     |                               |        |             |                            |                               |                                     |                               |        |             |                                     |         |                                     |                               |  |                               |  |  |  |  |

continued

continued

| Background characteristics               | Age 45-59*  |             |                           |            |             |               |                                     |             |                               |               | Age ≥ 60    |             |                           |               |            | Total       |                                     |               |                               |             |
|------------------------------------------|-------------|-------------|---------------------------|------------|-------------|---------------|-------------------------------------|-------------|-------------------------------|---------------|-------------|-------------|---------------------------|---------------|------------|-------------|-------------------------------------|---------------|-------------------------------|-------------|
|                                          | Hearing aid |             | Spectacles/Contact lenses |            | Denture     |               | Aids used for physical disabilities |             | Any aid or supportive devices |               | Hearing aid |             | Spectacles/Contact lenses |               | Denture    |             | Aids used for physical disabilities |               | Any aid or supportive devices |             |
|                                          |             |             |                           |            |             |               |                                     |             |                               |               |             |             |                           |               |            |             |                                     |               |                               |             |
| <b>Work status</b>                       |             |             |                           |            |             |               |                                     |             |                               |               |             |             |                           |               |            |             |                                     |               |                               |             |
| Currently working                        | 0.4         | 28.4        | 0.8                       | 0.7        | 29.1        | 23,576        | 0.6                                 | 29.1        | 29.1                          | 23,576        | 0.6         | 29.1        | 29.1                      | 23,576        | 0.6        | 29.1        | 29.1                                | 23,576        | 0.6                           | 29.1        |
| Worked in past but currently not working | 0.2         | 34.6        | 4.0                       | 6.9        | 37.6        | 4,559         | 0.8                                 | 40.7        | 37.6                          | 4,559         | 0.8         | 40.7        | 37.6                      | 4,559         | 0.8        | 40.7        | 37.6                                | 4,559         | 0.8                           | 40.7        |
| Never worked                             | 0.2         | 28.5        | 1.8                       | 1.2        | 29.8        | 12,467        | 0.7                                 | 42.0        | 29.8                          | 12,467        | 0.7         | 42.0        | 29.8                      | 12,467        | 0.7        | 42.0        | 29.8                                | 12,467        | 0.7                           | 42.0        |
| <b>MPCE quintile</b>                     |             |             |                           |            |             |               |                                     |             |                               |               |             |             |                           |               |            |             |                                     |               |                               |             |
| Poorest                                  | 0.2         | 18.5        | 0.5                       | 0.7        | 19.3        | 7,638         | 0.5                                 | 25.7        | 19.3                          | 7,638         | 0.5         | 25.7        | 19.3                      | 7,638         | 0.5        | 25.7        | 19.3                                | 7,638         | 0.5                           | 25.7        |
| Poorer                                   | 0.1         | 25.9        | 1.0                       | 0.9        | 27.0        | 8,023         | 0.5                                 | 34.6        | 27.0                          | 8,023         | 0.5         | 34.6        | 27.0                      | 8,023         | 0.5        | 34.6        | 27.0                                | 8,023         | 0.5                           | 34.6        |
| Middle                                   | 0.1         | 28.6        | 1.1                       | 1.9        | 30.1        | 8,086         | 0.9                                 | 38.8        | 30.1                          | 8,086         | 0.9         | 38.8        | 30.1                      | 8,086         | 0.9        | 38.8        | 30.1                                | 8,086         | 0.9                           | 38.8        |
| Richer                                   | 0.2         | 33.5        | 1.5                       | 1.0        | 34.6        | 8,476         | 0.6                                 | 42.9        | 34.6                          | 8,476         | 0.6         | 42.9        | 34.6                      | 8,476         | 0.6        | 42.9        | 34.6                                | 8,476         | 0.6                           | 42.9        |
| Richest                                  | 0.8         | 39.7        | 3.6                       | 3.6        | 40.9        | 8,379         | 1.2                                 | 48.6        | 40.9                          | 8,379         | 1.2         | 48.6        | 40.9                      | 8,379         | 1.2        | 48.6        | 40.9                                | 8,379         | 1.2                           | 48.6        |
| <b>Total</b>                             | <b>0.3</b>  | <b>29.2</b> | <b>1.5</b>                | <b>1.6</b> | <b>30.3</b> | <b>40,602</b> | <b>0.7</b>                          | <b>37.5</b> | <b>30.3</b>                   | <b>40,602</b> | <b>0.7</b>  | <b>37.5</b> | <b>30.3</b>               | <b>40,602</b> | <b>0.7</b> | <b>37.5</b> | <b>30.3</b>                         | <b>40,602</b> | <b>0.7</b>                    | <b>37.5</b> |

Notes

\* Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

1. Supportive devices include spectacles, dentures and devices to help in moving or sitting (such as, walker, walking sticks, wheelchairs, adjustable shower stools/ commodes, back/neck collar, orthosis/prosthesis).

**Table 11.14 Percentage of older adults using aids or supportive devices<sup>1</sup>, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory | Age 45-59*  |                                  |            |                                           |                                     |               | Age ≥ 60    |                                  |            |                                           |                                     |               | Total       |                                  |            |                                           |                                     |               |
|-----------------------|-------------|----------------------------------|------------|-------------------------------------------|-------------------------------------|---------------|-------------|----------------------------------|------------|-------------------------------------------|-------------------------------------|---------------|-------------|----------------------------------|------------|-------------------------------------------|-------------------------------------|---------------|
|                       | Hearing aid | Spectacles/<br>Contact<br>lenses | Denture    | Aids used<br>for physical<br>disabilities | Any aid or<br>supportive<br>devices | Number        | Hearing aid | Spectacles/<br>Contact<br>lenses | Denture    | Aids used<br>for physical<br>disabilities | Any aid or<br>supportive<br>devices | Number        | Hearing aid | Spectacles/<br>Contact<br>lenses | Denture    | Aids used<br>for physical<br>disabilities | Any aid or<br>supportive<br>devices | Number        |
|                       |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |
| <b>India</b>          | <b>0.3</b>  | <b>29.2</b>                      | <b>1.5</b> | <b>1.6</b>                                | <b>30.3</b>                         | <b>40,602</b> | <b>0.7</b>  | <b>37.5</b>                      | <b>3.1</b> | <b>10.1</b>                               | <b>43.3</b>                         | <b>31,333</b> | <b>0.5</b>  | <b>33.0</b>                      | <b>2.2</b> | <b>5.5</b>                                | <b>36.2</b>                         | <b>71,935</b> |
| <b>North</b>          |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |
| Chandigarh            | [0.9]       | 52.2                             | 6.6        | 1.3                                       | 53.9                                | 619           | 2.0         | 71.0                             | 20.2       | 10.7                                      | 75.8                                | 384           | 1.3         | 59.7                             | 12.0       | 5.0                                       | 62.6                                | 1,003         |
| Delhi                 | [0.4]       | 35.6                             | [0.1]      | 0.3                                       | 36.2                                | 822           | 1.9         | 53.4                             | 6.1        | 8.0                                       | 56.1                                | 494           | 1.0         | 42.4                             | 2.4        | 3.3                                       | 43.7                                | 1,316         |
| Haryana               | [0.1]       | 32.5                             | 2.6        | 1.2                                       | 34.7                                | 1,048         | 0.7         | 41.5                             | 5.5        | 8.4                                       | 46.5                                | 846           | 0.4         | 36.8                             | 4.0        | 4.6                                       | 40.3                                | 1,894         |
| Himachal Pradesh      | [0.2]       | 36.3                             | 5.5        | 2.4                                       | 40.8                                | 765           | 0.6         | 50.2                             | 14.4       | 15.8                                      | 58.9                                | 617           | 0.4         | 42.9                             | 9.7        | 8.7                                       | 49.3                                | 1,382         |
| Jammu & Kashmir       | [0.3]       | 15.6                             | 1.9        | 4.9                                       | 19.4                                | 880           | 1.5         | 25.6                             | 4.7        | 15.9                                      | 36.5                                | 730           | 0.9         | 20.5                             | 3.3        | 10.3                                      | 27.8                                | 1,610         |
| Punjab                | [0.3]       | 40.5                             | 6.9        | 1.9                                       | 43.1                                | 1,106         | 0.8         | 47.5                             | 12.9       | 12.5                                      | 54.1                                | 1,001         | 0.5         | 43.9                             | 9.8        | 7.0                                       | 48.4                                | 2,107         |
| Rajasthan             | 0.9         | 23.2                             | 0.7        | 0.9                                       | 25.1                                | 1,161         | 1.3         | 32.0                             | 2.6        | 13.9                                      | 40.7                                | 1,077         | 1.1         | 27.6                             | 1.6        | 7.4                                       | 32.9                                | 2,238         |
| Uttarakhand           | [0.6]       | 37.4                             | 2.6        | 1.3                                       | 38.9                                | 716           | 1.2         | 47.1                             | 5.3        | 9.7                                       | 53.1                                | 641           | 0.9         | 42.2                             | 3.9        | 5.4                                       | 45.9                                | 1,357         |
| <b>Central</b>        |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |
| Chhattisgarh          | -           | 12.8                             | [0.3]      | 0.8                                       | 13.7                                | 1,274         | 0.7         | 21.0                             | 0.8        | 10.1                                      | 28.4                                | 779           | 0.3         | 15.9                             | 0.5        | 4.4                                       | 19.3                                | 2,053         |
| Madhya Pradesh        | [0.3]       | 20.6                             | 0.9        | 0.8                                       | 21.8                                | 1,596         | 0.6         | 26.7                             | 1.8        | 12.5                                      | 34.4                                | 1,312         | 0.4         | 23.5                             | 1.3        | 6.4                                       | 27.8                                | 2,908         |
| Uttar Pradesh         | [0.1]       | 28.6                             | 1.0        | 0.5                                       | 29.3                                | 2,393         | 1.3         | 37.1                             | 3.1        | 8.6                                       | 43.2                                | 2,165         | 0.7         | 32.8                             | 2.0        | 4.5                                       | 36.2                                | 4,558         |
| <b>East</b>           |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |
| Bihar                 | -           | 19.5                             | [0.1]      | 0.7                                       | 20.2                                | 1,707         | 0.5         | 29.2                             | 0.7        | 8.1                                       | 35.3                                | 1,806         | 0.3         | 24.7                             | 0.4        | 4.7                                       | 28.3                                | 3,513         |
| Jharkhand             | [0.1]       | 18.3                             | 0.6        | 0.5                                       | 19.0                                | 1,292         | [0.4]       | 27.6                             | 1.3        | 11.1                                      | 36.0                                | 1,165         | 0.2         | 22.8                             | 1.0        | 5.6                                       | 27.2                                | 2,457         |
| Odisha                | [0.1]       | 8.4                              | 0.3        | 1.0                                       | 9.6                                 | 1,675         | 0.4         | 10.8                             | 0.6        | 13.1                                      | 22.9                                | 1,230         | 0.2         | 9.5                              | 0.4        | 6.3                                       | 15.4                                | 2,905         |
| West Bengal           | 0.2         | 44.1                             | 1.5        | 1.3                                       | 44.9                                | 2,381         | 0.8         | 51.9                             | 3.2        | 9.0                                       | 54.9                                | 1,541         | 0.4         | 47.3                             | 2.2        | 4.4                                       | 49.0                                | 3,922         |
| <b>Northeast</b>      |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |
| Arunachal Pradesh     | -           | 10.2                             | -          | 1.6                                       | 11.3                                | 896           | [1.1]       | 6.3                              | -          | 13.4                                      | 18.6                                | 318           | [0.3]       | 9.2                              | -          | 4.5                                       | 13.1                                | 1,214         |
| Assam                 | [0.1]       | 26.3                             | 0.5        | 0.8                                       | 27.0                                | 1,544         | [0.3]       | 34.8                             | 1.6        | 4.8                                       | 37.9                                | 814           | [0.2]       | 29.4                             | 0.9        | 2.3                                       | 30.9                                | 2,358         |
| Manipur               | [0.3]       | 35.3                             | 3.3        | 2.6                                       | 38.3                                | 758           | [0.8]       | 42.2                             | 8.9        | 17.8                                      | 54.6                                | 605           | 0.5         | 38.5                             | 5.9        | 9.7                                       | 45.9                                | 1,363         |
| Meghalaya             | -           | 9.1                              | [0.4]      | [0.5]                                     | 9.5                                 | 556           | 0.6         | 14.8                             | [0.5]      | 2.4                                       | 15.3                                | 411           | [0.3]       | 11.5                             | [0.4]      | 1.3                                       | 12.0                                | 967           |
| Mizoram               | -           | 27.4                             | 4.8        | [0.4]                                     | 30.4                                | 713           | 3.2         | 33.2                             | 20.4       | 3.7                                       | 42.0                                | 531           | 1.4         | 30.0                             | 11.8       | 1.9                                       | 35.6                                | 1,244         |
| Nagaland              | -           | 14.5                             | 0.5        | [0.6]                                     | 14.9                                | 708           | [0.4]       | 14.1                             | 0.9        | 7.4                                       | 21.4                                | 607           | [0.2]       | 14.3                             | 0.7        | 3.9                                       | 18.0                                | 1,315         |
| Tripura               | [0.1]       | 29.1                             | 1.6        | 0.7                                       | 29.9                                | 732           | [0.5]       | 28.9                             | 1.5        | 6.5                                       | 34.2                                | 459           | [0.2]       | 29.0                             | 1.5        | 3.0                                       | 31.6                                | 1,191         |
| <b>West</b>           |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |             |                                  |            |                                           |                                     |               |
| Dadra & Nagar Haveli  | -           | 47.3                             | 1.4        | 1.5                                       | 48.3                                | 630           | [0.9]       | 42.4                             | 4.3        | 13.7                                      | 52.3                                | 446           | [0.3]       | 45.3                             | 2.6        | 6.3                                       | 49.9                                | 1,076         |
| Daman & Diu           | [0.1]       | 55.8                             | 1.1        | 1.4                                       | 56.9                                | 555           | 2.1         | 56.2                             | 11.5       | 11.3                                      | 61.2                                | 427           | 1.1         | 56.0                             | 6.0        | 6.1                                       | 58.9                                | 982           |

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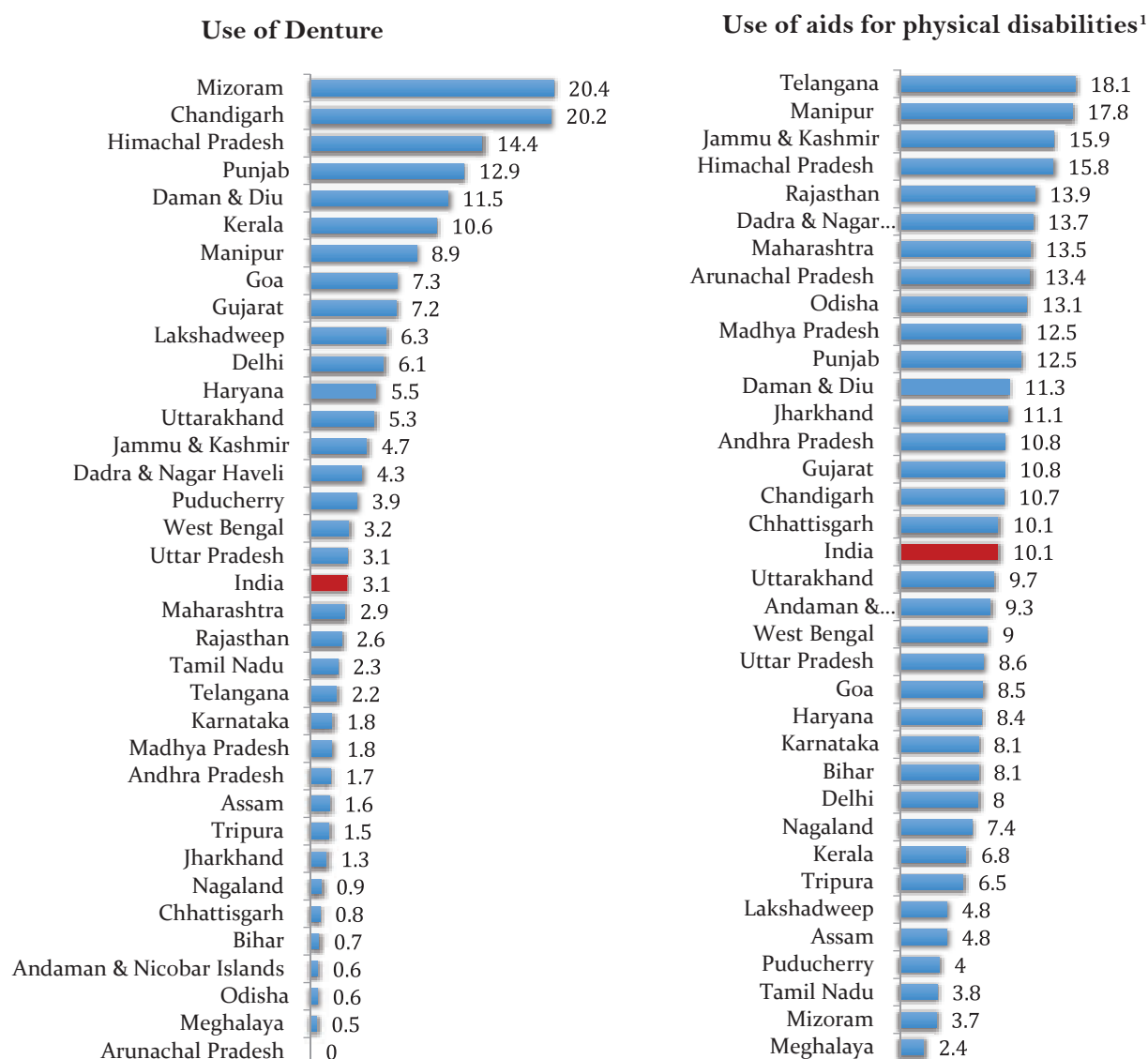
| State/Union Territory     | Age 45-59*  |                                  |         |                                           |                                     | Age ≥ 60 |             |                                  |         |                                           | Total                               |        |             |                                  |         |                                           |                                     |        |
|---------------------------|-------------|----------------------------------|---------|-------------------------------------------|-------------------------------------|----------|-------------|----------------------------------|---------|-------------------------------------------|-------------------------------------|--------|-------------|----------------------------------|---------|-------------------------------------------|-------------------------------------|--------|
|                           | Hearing aid | Spectacles/<br>Contact<br>lenses | Denture | Aids used<br>for physical<br>disabilities | Any aid or<br>supportive<br>devices | Number   | Hearing aid | Spectacles/<br>Contact<br>lenses | Denture | Aids used<br>for physical<br>disabilities | Any aid or<br>supportive<br>devices | Number | Hearing aid | Spectacles/<br>Contact<br>lenses | Denture | Aids used<br>for physical<br>disabilities | Any aid or<br>supportive<br>devices | Number |
| Goa                       | -           | 63.9                             | 1.0     | 2.7                                       | 64.2                                | 786      | [0.5]       | 68.5                             | 7.3     | 8.5                                       | 70.9                                | 634    | [0.2]       | 66.0                             | 3.9     | 5.4                                       | 67.3                                | 1,420  |
| Gujarat                   | -           | 41.3                             | 3.2     | 1.5                                       | 43.4                                | 1,333    | [0.3]       | 43.1                             | 7.2     | 10.8                                      | 49.6                                | 979    | [0.1]       | 42.1                             | 5.0     | 5.7                                       | 46.2                                | 2,312  |
| Maharashtra               | [0.1]       | 43.9                             | 0.7     | 3.1                                       | 44.6                                | 2,172    | 0.6         | 54.0                             | 2.9     | 13.5                                      | 58.6                                | 1,779  | 0.4         | 48.9                             | 1.8     | 8.2                                       | 51.5                                | 3,951  |
| South                     |             |                                  |         |                                           |                                     |          |             |                                  |         |                                           |                                     |        |             |                                  |         |                                           |                                     |        |
| Andaman & Nicobar Islands | [0.1]       | 36.3                             | [0.3]   | [0.5]                                     | 36.8                                | 720      | 1.6         | 39.8                             | 0.6     | 9.3                                       | 44.8                                | 521    | 0.7         | 37.7                             | 0.4     | 4.1                                       | 40.1                                | 1,241  |
| Andhra Pradesh            | [0.1]       | 33.4                             | 1.1     | 1.6                                       | 34.4                                | 1,564    | 0.4         | 42.8                             | 1.7     | 10.8                                      | 48.2                                | 1,098  | 0.2         | 37.4                             | 1.4     | 5.4                                       | 40.2                                | 2,662  |
| Karnataka                 | [0.8]       | 22.4                             | 2.4     | 2.9                                       | 23.4                                | 1,409    | 0.5         | 35.3                             | 1.8     | 8.1                                       | 38.6                                | 999    | 0.7         | 27.4                             | 2.2     | 4.9                                       | 29.4                                | 2,408  |
| Kerala                    | [0.2]       | 45.7                             | 6.4     | 1.4                                       | 48.1                                | 1,273    | 1.0         | 53.5                             | 10.6    | 6.8                                       | 57.6                                | 1,203  | 0.6         | 49.7                             | 8.6     | 4.2                                       | 53.0                                | 2,476  |
| Lakshadweep               | -           | 45.6                             | 3.8     | [0.3]                                     | 46.1                                | 637      | [0.4]       | 44.4                             | 6.3     | 4.8                                       | 49.7                                | 500    | [0.2]       | 45.1                             | 5.0     | 2.5                                       | 47.8                                | 1,137  |
| Puducherry                | [0.2]       | 35.7                             | 1.1     | [0.5]                                     | 36.3                                | 785      | [0.4]       | 47.9                             | 3.9     | 4.0                                       | 49.6                                | 637    | 0.3         | 41.4                             | 2.4     | 2.2                                       | 42.5                                | 1,422  |
| Tamil Nadu                | 0.3         | 19.1                             | 1.1     | 0.1                                       | 20.1                                | 1,993    | 0.8         | 26.2                             | 2.3     | 3.8                                       | 29.6                                | 1,529  | 0.5         | 22.3                             | 1.6     | 1.8                                       | 24.5                                | 3,522  |
| Telangana                 | [0.1]       | 35.2                             | 1.3     | 2.9                                       | 37.0                                | 1,403    | [0.1]       | 42.3                             | 2.2     | 18.1                                      | 49.6                                | 1,048  | [0.1]       | 38.4                             | 1.7     | 9.7                                       | 42.6                                | 2,451  |
| Notes                     |             |                                  |         |                                           |                                     |          |             |                                  |         |                                           |                                     |        |             |                                  |         |                                           |                                     |        |

Notes

\* *Including spouse irrespective of age*, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

<sup>1</sup> Supportive devices include spectacles, dentures and devices to help in moving or sitting (such as, walker, walking sticks, wheelchairs, adjustable showers stools/ commodes, back/neck collar, orthosis/prosthesis).

**Figure 11.4 Percentage of elderly age 60 and above using dentures and aids for physical disabilities, states/UTs, LASI Wave 1, 2017-18**



Note

<sup>1</sup> Aids used for physical disabilities include wheelchairs, adjustable shower stools/commodes, back/neck collars and orthosis and prosthesis



## 12. HEALTH BEHAVIOUR AND RISK FACTORS

Health behaviours shape the health and well-being of individuals and populations. Health behaviours are recognized as multidimensional and are embedded in healthy lifestyles, varying over time and space. WHO defines risk factors in the report of ‘Global Health Risks’ (WHO, 2009) as ‘a factor that raises the probability of adverse health outcomes’. Modifiable health risk factors contribute significantly to the global burden of disease. Tobacco use, alcohol consumption, physical inactivity, and inadequate fruit and vegetable intake are recognized as important risk factors for chronic disease and mortality. Reducing the disease burden in a population through preventing health risks is essential. Promoting physical activity, endorsing a healthy diet and reduced tobacco and alcohol use is important for improving a population’s health status.

In the LASI, information was collected on four domains of health risk factors: tobacco use, alcohol consumption, physical activity, and spiritual activity. In addition, information on household food availability is also collected. This chapter describes the prevalence of health risk factors and food availability across states/UTs of India.

### 12.1 TOBACCO CONSUMPTION (SMOKING/SMOKELESS)

Tobacco use is a primary risk factor for a number of chronic diseases, including cancer, lung disease, cardiovascular disease, and oral health conditions. Each year an estimated seven million deaths worldwide are attributed to tobacco use, with the most common tobacco-related cause of death being cardiovascular disease, followed by stroke. Despite the high association between tobacco use and non-communicable disease, tobacco consumption is common throughout the world (WHO, 2018b). In India, about 42% of men, 14% of women, and 29% (266.8 million) of all adults aged 15 years and older currently use tobacco in some form (GATS, 2016-17a; WHO, 2017d).

Tobacco consumption occurs in various forms, broadly comprising two categories: smoked and smokeless. Smoked tobacco involves burning tobacco products and inhaling the smoke (comprising particle and gaseous products), whereas smokeless tobacco involves consuming tobacco in forms other than smoking and is widely used across India. A ban on tobacco use in public places is enforced under ‘The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003’ (COTPA, 2003).

In the LASI, information was collected on ever and current use of tobacco; smoking and smokeless tobacco use; age at which the respondent first started using tobacco; daily frequency of tobacco use; and age at the time of quitting tobacco use.

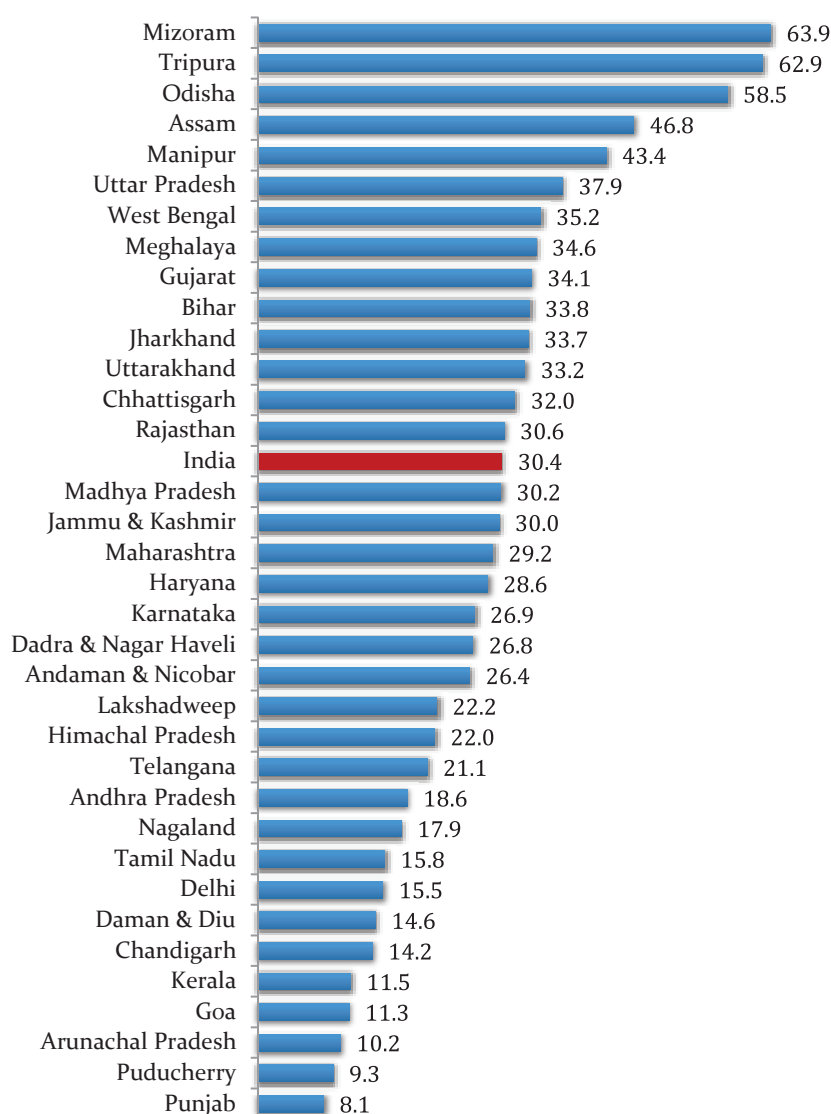
#### Types of tobacco use:

- Smoked tobacco or tobacco smoking is the practice of burning tobacco products and inhaling the smoke, which includes particle and gaseous products.
- Smokeless tobacco use includes chewing, sniffing, placing the product between the teeth and gum, or consumption of the smokeless tobacco such as pan, gutkha, khaini, etc.



Figure 12.1 shows the percentage of older adults age 45 and above who reported current tobacco use (smoked or smokeless) by states/UTs. Overall, 30% of older adults age 45 and above in India reported that they are currently using tobacco in either smoked or smokeless form. The prevalence of current use of tobacco among older adults age 45 and above is comparatively much higher in the states of the northeast such as Mizoram (64%), Tripura (63%), Assam (47%), and Manipur (43%) besides Odisha (59%); whereas the prevalence of current tobacco use (smoked or smokeless) is less than 10% in Puducherry (9%) and Punjab (8%).

**Figure 12.1 Percentage of older adults age 45 and above\* who reported current tobacco use (smoked or smokeless), states/UTs, LASI Wave 1, 2017-18**



Note

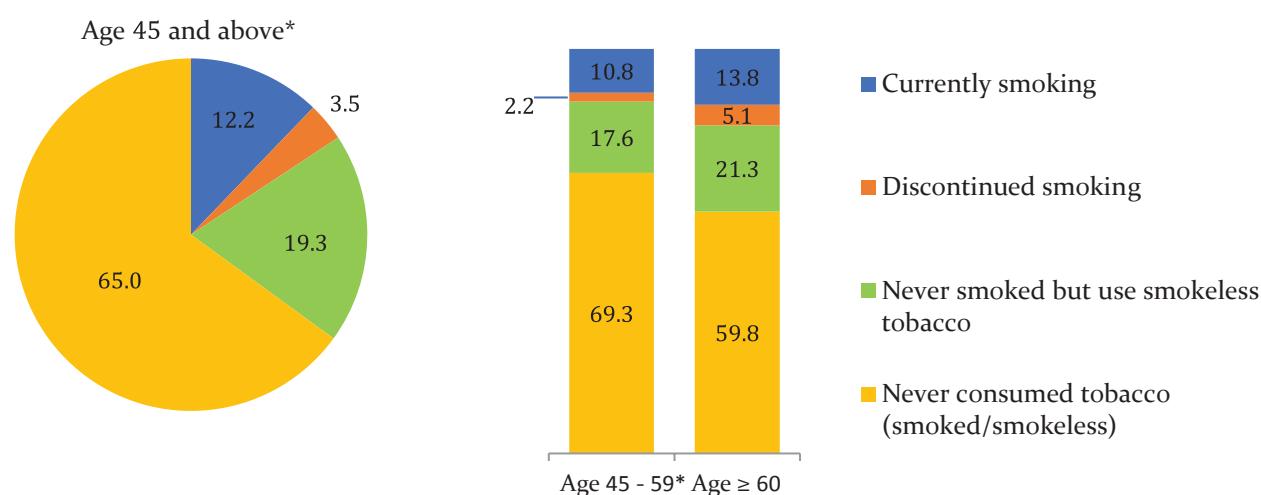
\* Including spouse irrespective of age

### 12.1.1 Smoking tobacco

A broader definition of smoked tobacco may include simply inhaling tobacco smoke through the mouth, and then releasing it, as is done with some cigarettes, bidi, tobacco pipes, cigars, hookahs, and cheroots. The prevalence of smoking is calculated as the proportion of all respondents who reported that they are current smokers at the time of the survey. Discontinuation of smoking is calculated as the proportion of ever smokers who are not currently smoking.

Figure 12.2 shows the distribution of older adults by smoking status and age. Overall, 12% of older adults age 45 and above are current smokers; 4% are former smokers who discontinued smoking and 65% never consumed tobacco; however, 19% of older adults age 45 and above who have never smoked tobacco (cigarettes, bidi, tobacco pipes, cigars, hookahs, and cheroots) have used smokeless tobacco. The prevalence of current smoking is slightly higher among the elderly age 60 and above (14%) than in older adults age 45-59 (11%). The proportion who discontinued smoking is also higher among elderly age 60 and above (5%) compared to older adults age 45-59 (2%).

**Figure 12.2 Percent distribution of older adults age 45 and above\* by smoking status and age, India, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age

Table 12.1 shows the prevalence of current smokers by sex according to background characteristics. Twenty-six percent of older adult men age 45 and above are current smokers, as are 2.4% of older adult women. Among women, the current smoking prevalence is higher among the elderly age 60 and above (3.4%) compared to their counterparts age 45-59 (1.7%), whereas among men, the current smoking prevalence does not vary by age groups. The prevalence of current smoking is higher among older adult men as well as older adult women age 45 and above in rural areas (29% and 3.3%, respectively) compared to those living in urban areas (18% and 0.5%, respectively). In both older adult men and women, across all age groups, the proportion of current smokers is highest in those with no education and decreases as education level increases.

The prevalence of current smokers across the states/UTs is presented in Table 12.2. The prevalence of current smoking among elderly men age 60 and above ranges from about half in Haryana (53%) and Tripura (52%) to less than 10% in Lakshadweep (9%), Arunachal Pradesh (7%), Goa (7%) and Jharkhand (7%). The prevalence of current smoking among elderly women age 60 and above is higher in the states of Mizoram (24%), Tripura (19%), Uttarakhand (18%), Haryana (14%), Manipur (12%), and Jammu & Kashmir (11%).



**Table 12.2 Percentage of older adults by smoking status and sex, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Currently smoking <sup>1</sup> |                  |                  |                  |               |                  |                   |                  |                 |                  |
|---------------------------|--------------------------------|------------------|------------------|------------------|---------------|------------------|-------------------|------------------|-----------------|------------------|
|                           | Male                           |                  |                  |                  |               | Female           |                   |                  |                 |                  |
|                           | Age 45-59*<br>26.1             | Number<br>15,302 | Age ≥ 60<br>25.5 | Number<br>14,941 | Total<br>25.8 | Number<br>30,243 | Age 45-59*<br>1.7 | Number<br>25,108 | Age ≥ 60<br>3.4 | Number<br>16,263 |
| <b>India</b>              |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| <b>North</b>              |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| Chandigarh                | 26.9                           | 249              | 13.6             | 179              | 21.0          | 428              | 2.8               | 361              | 6.7             | 197              |
| Delhi                     | 27.0                           | 346              | 17.2             | 247              | 22.8          | 593              | 1.6               | 475              | 3.2             | 244              |
| Haryana                   | 50.7                           | 428              | 53.1             | 358              | 51.8          | 786              | 5.5               | 618              | 13.7            | 484              |
| Himachal Pradesh          | 45.2                           | 256              | 43.5             | 298              | 44.2          | 554              | 2.6               | 505              | 8.9             | 316              |
| Jammu & Kashmir           | 49.6                           | 328              | 35.3             | 381              | 41.6          | 709              | 6.9               | 552              | 11.0            | 348              |
| Punjab                    | 12.3                           | 413              | 10.1             | 497              | 11.1          | 910              | [0.1]             | 679              | [0.3]           | 496              |
| Rajasthan                 | 43.7                           | 460              | 42.8             | 501              | 43.2          | 961              | 7.5               | 700              | 8.6             | 572              |
| Uttarakhand               | 43.7                           | 251              | 46.7             | 302              | 45.4          | 553              | 8.3               | 463              | 17.5            | 338              |
| <b>Central</b>            |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| Chhattisgarh              | 22.0                           | 514              | 21.3             | 391              | 21.7          | 905              | [0.3]             | 760              | 1.6             | 387              |
| Madhya Pradesh            | 31.2                           | 668              | 31.8             | 642              | 31.5          | 1,310            | 1.1               | 914              | 1.5             | 667              |
| Uttar Pradesh             | 34.3                           | 955              | 27.5             | 1,113            | 30.5          | 2,068            | 3.4               | 1,432            | 4.8             | 1,045            |
| <b>East</b>               |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| Bihar                     | 10.5                           | 625              | 11.4             | 921              | 11.0          | 1,546            | 4.5               | 1,076            | 9.6             | 883              |
| Jharkhand                 | 7.2                            | 454              | 7.2              | 582              | 7.2           | 1,036            | [0.3]             | 832              | 1.2             | 582              |
| Odisha                    | 18.3                           | 652              | 17.9             | 596              | 18.1          | 1,248            | 1.2               | 1,018            | 1.2             | 632              |
| West Bengal               | 42.2                           | 861              | 40.4             | 747              | 41.3          | 1,608            | 0.4               | 1,513            | 1.1             | 790              |
| <b>Northeast</b>          |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| Arunachal Pradesh         | 11.5                           | 375              | 6.8              | 176              | 10.2          | 551              | [0.2]             | 519              | [4.8]           | 142              |
| Assam                     | 15.5                           | 581              | 14.9             | 383              | 15.3          | 964              | [0.2]             | 961              | 2.0             | 427              |
| Manipur                   | 30.0                           | 317              | 28.7             | 260              | 29.4          | 577              | 3.4               | 438              | 11.7            | 340              |
| Meghalaya                 | 53.4                           | 204              | 33.8             | 164              | 44.9          | 368              | [0.4]             | 351              | 4.8             | 245              |
| Mizoram                   | 56.2                           | 298              | 44.0             | 265              | 49.9          | 563              | 17.7              | 415              | 24.4            | 266              |
| Nagaland                  | 24.4                           | 287              | 14.4             | 301              | 18.7          | 588              | -                 | 419              | -               | 306              |
| Tripura                   | 52.7                           | 262              | 51.6             | 223              | 52.2          | 485              | 8.1               | 466              | 18.6            | 232              |
| <b>West</b>               |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| Dadra & Nagar Haveli      | 13.7                           | 265              | 30.3             | 192              | 20.2          | 457              | [0.1]             | 354              | -               | 248              |
| Daman & Diu               | 11.2                           | 220              | 12.3             | 177              | 11.7          | 397              | -                 | 327              | -               | 244              |
| Goa                       | 8.5                            | 277              | 7.4              | 284              | 8.0           | 561              | -                 | 505              | 1.1             | 346              |
| Gujarat                   | 31.8                           | 518              | 32.8             | 441              | 32.2          | 959              | [0.7]             | 793              | 1.1             | 521              |
| Maharashtra               | 10.0                           | 771              | 11.7             | 821              | 10.9          | 1,592            | 0.2               | 1,393            | 0.3             | 954              |
| <b>South</b>              |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |
| Andaman & Nicobar Islands | 7.2                            | 288              | 12.9             | 275              | 9.9           | 563              | 0.9               | 429              | 1.4             | 246              |
| Andhra Pradesh            | 24.8                           | 566              | 26.2             | 544              | 25.5          | 1,110            | 3.2               | 991              | 4.5             | 552              |
| Karnataka                 | 21.6                           | 485              | 27.6             | 472              | 24.4          | 957              | -                 | 914              | -               | 524              |
| Kerala                    | 26.6                           | 442              | 18.5             | 528              | 22.0          | 970              | -                 | 819              | -               | 666              |
| Lakshadweep               | 25.0                           | 204              | 8.8              | 238              | 15.5          | 442              | [0.4]             | 429              | -               | 262              |
| Puducherry                | 11.0                           | 275              | 10.0             | 268              | 10.5          | 543              | [0.1]             | 507              | -               | 364              |
| Tamil Nadu                | 24.9                           | 708              | 21.4             | 681              | 23.1          | 1,389            | -                 | 1,283            | [0.3]           | 845              |
| Telangana                 | 28.8                           | 499              | 34.9             | 493              | 31.9          | 992              | 1.0               | 897              | 4.5             | 552              |
| <b>Notes</b>              |                                |                  |                  |                  |               |                  |                   |                  |                 |                  |

\*Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

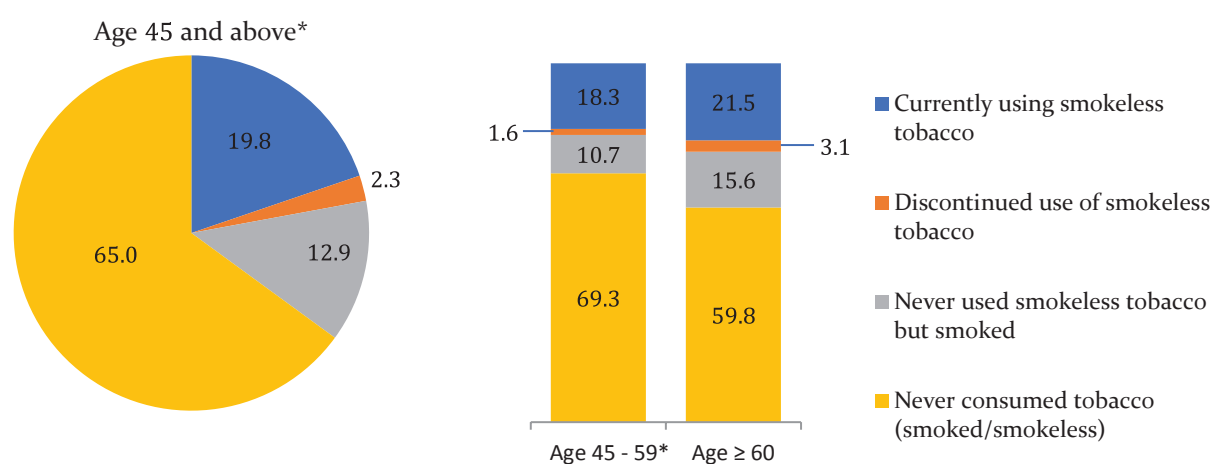
<sup>1</sup> Smoking refers to smoking any tobacco product such as cigarette, bidi, cigar, hookah and cheroot etc.

### 12.1.2 Smokeless tobacco

Smokeless tobacco is the use of tobacco or tobacco products in ways other than smoking. These include chewing, sniffing, placing the product between the teeth and gum, or use of the smokeless tobacco in forms such as *pan*, *gutkha*, *khaini* etc., which are widely consumed across India. Information on the quantity of smokeless tobacco (in grams) consumed daily and number of times smokeless tobacco was used in a day or week was collected in addition to the other information mentioned in the introduction. The prevalence of current use of smokeless tobacco is calculated as the proportion of all respondents who reported that they are currently using smokeless tobacco at the time of the survey.

Figure 12.3 presents the distribution of older adults by smokeless tobacco consumption status and age. Overall, the prevalence of current use of smokeless tobacco among older adults age 45 and above is 20%; around 2% have discontinued the use of smokeless tobacco, while 65% never used tobacco; thirteen percent of older adults age 45 and above never used smokeless tobacco but have smoked tobacco. A quarter of the elderly age 60 and above (22%) are currently using smokeless tobacco compared to 18% of older adults age 45-59.

**Figure 12.3 Percent distribution of older adults age 45 and above\* by smokeless tobacco consumption status and age, India, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age

Table 12.3 shows the percentage of older adults currently using smokeless tobacco by background characteristics. The prevalence of current use of smokeless tobacco among older adult men age 45 and above is 28% compared to 14% among older adult women. Among men, the current use of smokeless tobacco shows not much variation by age; whereas among women, current users of smokeless tobacco are 16% among elderly women age 60 and above compared to 12% among older adult women age 45-59. The proportion of older adults age 45-59 and elderly age 60 and above who are current users of smokeless tobacco is twice in rural areas for both men and women compared to urban areas. Among older adults age 45 and above, 36% of men compared to 22% of women from Scheduled tribe are currently using smokeless tobacco. The proportion of older adults age 45 and above who reported that they are currently using smokeless tobacco decreases with increase in education and MPCE quintiles.

Table 12.4 presents the cross-state variation in the percentage of older adults who are current users of smokeless tobacco in India. Among older adult men age 45 and above, besides West Bengal (20%), most of the eastern states show higher prevalence for current use of smokeless tobacco. More than half of the elderly men age 60 and above are currently using smokeless tobacco in Odisha (65%), Jharkhand (57%), and Bihar (53%), in contrast, less than 5% are current users of smokeless tobacco in Goa (4%), Puducherry (2%), Himachal Pradesh (2%), Kerala (2%) and Haryana (2%). Among older adult women age 45 and above, the proportion who are current users of smokeless tobacco is lower in north Indian states/UTs, along with a few west and south Indian states, ranging from 54% in Tripura to less than 1% in Punjab and Himachal Pradesh. More than half of elderly women age 60 and above are currently using smokeless tobacco in Odisha (57%) and Tripura (56%).

**Table 12.3 Percentage of older adults by use of smokeless tobacco status and sex by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Currently using smokeless tobacco <sup>1</sup> |               |             |               |             |               |             |               |             |               |
|------------------------------------------|------------------------------------------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|
|                                          | Male                                           |               |             |               |             | Female        |             |               |             |               |
|                                          | Age 45-59*                                     | Number        | Age ≥ 60    | Number        | Total       | Number        | Age 45-59*  | Number        | Age ≥ 60    | Number        |
| <b>Place of residence</b>                |                                                |               |             |               |             |               |             |               |             |               |
| Rural                                    | 33.0                                           | 9,786         | 31.1        | 10,002        | 32.0        | 19,788        | 14.6        | 15,833        | 18.7        | 10,595        |
| Urban                                    | 18.6                                           | 5,516         | 17.7        | 4,939         | 18.2        | 10,455        | 8.2         | 9,275         | 10.4        | 5,668         |
| <b>Marital status</b>                    |                                                |               |             |               |             |               |             |               |             |               |
| Currently married                        | 28.2                                           | 14,247        | 27.7        | 12,266        | 28.0        | 26,513        | 11.8        | 20,899        | 13.7        | 7,482         |
| Widowed                                  | 33.6                                           | 476           | 28.2        | 2,271         | 29.0        | 2,747         | 16.1        | 3,369         | 18.1        | 8,366         |
| Divorced/Separated/Deserted/ Others      | 25.4                                           | 579           | 16.5        | 404           | 21.4        | 983           | 10.9        | 840           | 17.6        | 415           |
| <b>Living arrangement</b>                |                                                |               |             |               |             |               |             |               |             |               |
| Living alone                             | 31.8                                           | 223           | 23.4        | 363           | 25.5        | 586           | 19.6        | 460           | 21.8        | 1,251         |
| Living with spouse and/or others         | 24.4                                           | 1,555         | 26.7        | 3,614         | 26.0        | 5,169         | 13.1        | 2,772         | 12.5        | 2,438         |
| Living with spouse and children          | 28.6                                           | 12,465        | 28.1        | 8,524         | 28.4        | 20,989        | 11.6        | 17,708        | 14.4        | 4,936         |
| Living with children and others          | 29.9                                           | 606           | 27.5        | 1,926         | 28.0        | 2,532         | 15.4        | 3,467         | 17.4        | 6,484         |
| Living with others only                  | 31.8                                           | 453           | 27.1        | 514           | 29.0        | 967           | 10.2        | 701           | 16.9        | 1,154         |
| <b>Religion</b>                          |                                                |               |             |               |             |               |             |               |             |               |
| Hindu                                    | 29.5                                           | 11,277        | 28.0        | 10,959        | 28.8        | 22,236        | 12.2        | 18,372        | 16.1        | 11,881        |
| Muslim                                   | 24.8                                           | 1,727         | 28.5        | 1,784         | 26.7        | 3,511         | 15.8        | 3,164         | 19.1        | 1,920         |
| Christian                                | 15.4                                           | 1,565         | 15.4        | 1,459         | 15.4        | 3,024         | 9.5         | 2,480         | 12.1        | 1,673         |
| Others                                   | 20.7                                           | 733           | 21.0        | 739           | 20.8        | 1,472         | 7.7         | 1,092         | 11.3        | 789           |
| <b>Caste/tribe</b>                       |                                                |               |             |               |             |               |             |               |             |               |
| Scheduled tribe                          | 35.9                                           | 2,844         | 36.6        | 2,417         | 36.2        | 5,261         | 22.4        | 4,444         | 21.6        | 2,720         |
| Scheduled caste                          | 29.9                                           | 2,578         | 28.9        | 2,429         | 29.4        | 5,007         | 16.3        | 4,266         | 21.5        | 2,677         |
| Other backward class                     | 26.9                                           | 5,695         | 27.2        | 5,718         | 27.0        | 11,413        | 9.5         | 9,462         | 13.3        | 6,063         |
| None of the above                        | 26.9                                           | 4,185         | 24.4        | 4,377         | 25.6        | 8,562         | 11.1        | 6,936         | 15.4        | 4,803         |
| <b>Education</b>                         |                                                |               |             |               |             |               |             |               |             |               |
| No schooling                             | 30.6                                           | 3,980         | 31.1        | 5,425         | 30.9        | 9,405         | 16.1        | 12,224        | 18.0        | 11,349        |
| Less than 5 years complete               | 33.9                                           | 1,866         | 31.0        | 2,168         | 32.3        | 4,034         | 16.2        | 2,365         | 17.8        | 1,590         |
| 5-9 years complete                       | 31.2                                           | 4,709         | 28.9        | 3,814         | 30.1        | 8,523         | 9.2         | 6,084         | 11.0        | 2,141         |
| 10 or more years complete                | 21.4                                           | 4,747         | 17.2        | 3,534         | 19.6        | 8,281         | 2.8         | 4,435         | 2.4         | 1,183         |
| <b>Work status</b>                       |                                                |               |             |               |             |               |             |               |             |               |
| Currently working                        | 29.5                                           | 13,384        | 33.5        | 6,260         | 30.9        | 19,644        | 15.9        | 10,080        | 22.0        | 2,953         |
| Worked in past but currently not working | 20.5                                           | 1,414         | 23.5        | 7,933         | 23.1        | 9,347         | 12.6        | 3,125         | 19.2        | 5,333         |
| Never worked                             | 13.8                                           | 504           | 12.6        | 748           | 13.1        | 1,252         | 8.9         | 11,903        | 11.6        | 7,977         |
| <b>MPCE quintile</b>                     |                                                |               |             |               |             |               |             |               |             |               |
| Poorest                                  | 32.1                                           | 2,901         | 33.3        | 3,000         | 32.7        | 5,901         | 14.7        | 4,700         | 18.0        | 3,425         |
| Poorer                                   | 31.3                                           | 3,005         | 31.2        | 3,039         | 31.3        | 6,044         | 15.6        | 4,985         | 17.9        | 3,385         |
| Middle                                   | 30.7                                           | 3,019         | 26.1        | 3,031         | 28.2        | 6,050         | 12.1        | 5,030         | 16.7        | 3,337         |
| Richer                                   | 29.1                                           | 3,208         | 25.2        | 2,965         | 27.1        | 6,173         | 10.8        | 5,228         | 15.6        | 3,163         |
| Richest                                  | 18.2                                           | 3,169         | 19.9        | 2,906         | 19.0        | 6,075         | 8.5         | 5,165         | 11.2        | 2,953         |
| <b>Total</b>                             | <b>28.3</b>                                    | <b>15,302</b> | <b>27.5</b> | <b>14,941</b> | <b>27.9</b> | <b>30,243</b> | <b>12.4</b> | <b>25,108</b> | <b>16.2</b> | <b>16,263</b> |
| <b>Total</b>                             |                                                |               |             |               |             |               |             |               |             | <b>41,371</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Smokeless tobacco refers to tobacco products such as chewing tobacco, gutka or pan masala.

**Table 12.4 Percentage of older adults by use of smokeless tobacco status and sex, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Currently using smokeless tobacco <sup>1</sup> |                  |                  |                  |               |                  |                    |                  |                  |                  |
|---------------------------|------------------------------------------------|------------------|------------------|------------------|---------------|------------------|--------------------|------------------|------------------|------------------|
|                           | Male                                           |                  |                  |                  |               | Female           |                    |                  |                  |                  |
|                           | Age 45-59*<br>28.3                             | Number<br>15,302 | Age ≥ 60<br>27.5 | Number<br>14,941 | Total<br>27.9 | Number<br>30,243 | Age 45-59*<br>12.4 | Number<br>25,108 | Age ≥ 60<br>16.2 | Number<br>16,263 |
| <b>India</b>              |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| <b>North</b>              |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| Chandigarh                | 8.8                                            | 249              | 4.8              | 179              | 7.0           | 428              | [1.1]              | 361              | [1.1]            | 197              |
| Delhi                     | 11.5                                           | 346              | 7.1              | 247              | 9.6           | 593              | 1.5                | 475              | [1.1]            | 244              |
| Haryana                   | 5.2                                            | 428              | 1.7              | 358              | 3.5           | 786              | [0.4]              | 618              | 2.2              | 484              |
| Himachal Pradesh          | 5.0                                            | 256              | 2.1              | 298              | 3.3           | 554              | 0.7                | 505              | -                | 316              |
| Jammu & Kashmir           | 6.0                                            | 328              | 12.6             | 381              | 9.7           | 709              | 2.9                | 552              | 12.6             | 348              |
| Punjab                    | 10.0                                           | 413              | 7.0              | 497              | 8.3           | 910              | 0.2                | 679              | -                | 496              |
| Rajasthan                 | 14.6                                           | 460              | 13.0             | 501              | 13.8          | 961              | 5.0                | 700              | 5.2              | 572              |
| Uttarakhand               | 12.5                                           | 251              | 10.9             | 302              | 11.6          | 553              | 4.8                | 463              | 7.4              | 338              |
| <b>Central</b>            |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| Chhattisgarh              | 33.0                                           | 514              | 33.2             | 391              | 33.1          | 905              | 14.6               | 760              | 16.0             | 387              |
| Madhya Pradesh            | 27.7                                           | 668              | 24.0             | 642              | 25.8          | 1,310            | 9.6                | 914              | 11.0             | 667              |
| Uttar Pradesh             | 36.1                                           | 955              | 34.5             | 1,113            | 35.2          | 2,068            | 14.1               | 1,432            | 17.2             | 1,045            |
| <b>East</b>               |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| Bihar                     | 60.6                                           | 625              | 52.8             | 921              | 55.7          | 1,546            | 5.2                | 1,076            | 5.3              | 883              |
| Jharkhand                 | 55.9                                           | 454              | 56.6             | 582              | 56.3          | 1,036            | 11.6               | 832              | 17.8             | 582              |
| Odisha                    | 62.9                                           | 652              | 65.1             | 596              | 64.0          | 1,248            | 43.8               | 1,018            | 56.5             | 632              |
| West Bengal               | 19.6                                           | 861              | 20.5             | 747              | 20.0          | 1,608            | 15.9               | 1,513            | 25.2             | 790              |
| <b>Northeast</b>          |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| Arunachal Pradesh         | 8.4                                            | 375              | 6.0              | 176              | 7.7           | 551              | 3.1                | 519              | 6.3              | 142              |
| Assam                     | 55.9                                           | 581              | 43.6             | 383              | 50.9          | 964              | 35.4               | 961              | 38.8             | 427              |
| Manipur                   | 44.2                                           | 317              | 16.9             | 260              | 31.2          | 577              | 41.1               | 438              | 21.8             | 340              |
| Meghalaya                 | 11.5                                           | 204              | 6.1              | 164              | 9.2           | 368              | 21.9               | 351              | 22.2             | 245              |
| Mizoram                   | 25.5                                           | 298              | 29.0             | 265              | 27.3          | 563              | 52.7               | 415              | 32.9             | 266              |
| Nagaland                  | 25.5                                           | 287              | 12.6             | 301              | 18.0          | 588              | 12.1               | 419              | [7.4]            | 306              |
| Tripura                   | 21.8                                           | 262              | 12.9             | 223              | 17.6          | 485              | 52.9               | 466              | 55.5             | 232              |
| <b>West</b>               |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| Dadra & Nagar Haveli      | 33.2                                           | 265              | 34.2             | 192              | 33.6          | 457              | 9.1                | 354              | 10.3             | 248              |
| Daman & Diu               | 32.3                                           | 220              | 14.6             | 177              | 23.8          | 397              | 3.3                | 327              | 2.5              | 244              |
| Goa                       | 11.3                                           | 277              | 3.9              | 284              | 7.4           | 561              | 6.5                | 505              | 12.0             | 346              |
| Gujarat                   | 39.1                                           | 518              | 22.2             | 441              | 30.9          | 959              | 17.2               | 793              | 16.7             | 521              |
| Maharashtra               | 38.8                                           | 771              | 35.9             | 821              | 37.2          | 1,592            | 11.8               | 1,393            | 23.4             | 954              |
| <b>South</b>              |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |
| Andaman & Nicobar Islands | 28.4                                           | 288              | 27.4             | 275              | 27.9          | 563              | 15.6               | 429              | 25.0             | 246              |
| Andhra Pradesh            | 6.5                                            | 566              | 9.5              | 544              | 8.0           | 1,110            | 3.6                | 991              | 6.3              | 552              |
| Karnataka                 | 19.4                                           | 485              | 22.6             | 472              | 20.8          | 957              | 15.9               | 914              | 21.1             | 524              |
| Kerala                    | 1.4                                            | 442              | 2.2              | 528              | 1.8           | 970              | 1.6                | 819              | 6.9              | 666              |
| Lakshadweep               | 11.3                                           | 204              | 13.4             | 238              | 12.5          | 442              | 17.7               | 429              | 24.8             | 262              |
| Puducherry                | 2.2                                            | 275              | 1.6              | 268              | 1.9           | 543              | 4.0                | 507              | 11.7             | 364              |
| Tamil Nadu                | 5.6                                            | 708              | 6.2              | 681              | 5.9           | 1,389            | 5.6                | 1,283            | 9.0              | 845              |
| Telangana                 | 6.1                                            | 499              | 5.6              | 493              | 5.9           | 992              | 5.6                | 897              | 10.3             | 552              |
| <b>Notes</b>              |                                                |                  |                  |                  |               |                  |                    |                  |                  |                  |

\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

<sup>1</sup> Smokeless tobacco refers to tobacco products such as chewing tobacco, gutka or pan masala.



## 12.2 ALCOHOL CONSUMPTION

Alcohol is a toxic psychoactive substance with dependence-producing properties. Globally, alcohol consumption contributes to 3 million deaths annually, as well as to disability and poor health in millions of people (WHO, 2018d). Along with a higher prevalence of tobacco use, alcohol use is more common in India and is substantially higher among men (Gururaj et al., 2016). Alcohol affects every organ of the body. Harmful use of alcohol is primarily associated with caustic effects on the digestive, brain, and cardiovascular systems. Alcoholic beverages are classified as carcinogenic by the International Agency for Research on Cancer and increase the risk of several cancer types (Roswall and Weiderpass, 2015). Alcohol also increases the risk of communicable diseases, including tuberculosis and HIV. Further, excessive alcohol consumption affects the central nervous system and increases the risk for intentional and unintentional injuries and adverse social consequences. Therefore, protecting the health of the population by preventing and reducing harmful alcohol use is a public health priority. Nationally, about 14.6% of the population (between 10 and 75 years of age) consumes alcohol and excessive alcohol consumption in India is around 2.7% (MoSJ&E, GoI, 2019).

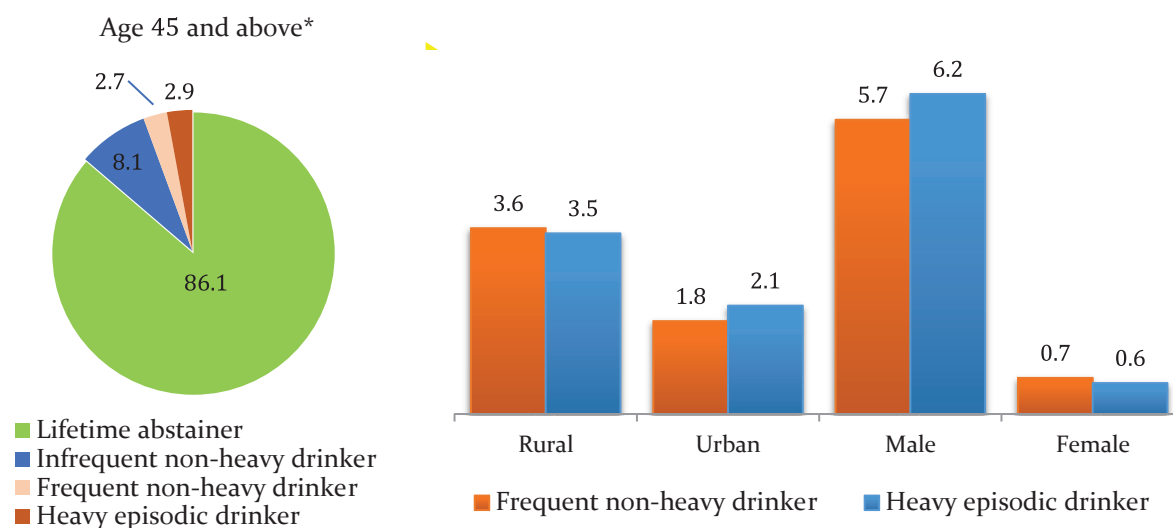
Information on alcohol consumption collected in the LASI includes ever and current use of alcohol; age at which alcohol consumption started; type of alcohol usually consumed; frequency of consumption; frequency of drinking more than five standard drinks; and the respondent's own opinion on drinking. Based on WHO guidelines for drinking frequency and cut off of five standard drinks (approx. 60 grams), drinkers are categorized as heavy and non-heavy drinkers as follows.

### Categorization based on alcohol consumption:

- Lifetime abstainer- those who never consumed alcoholic beverages.
- Infrequent non-heavy drinker (social drinkers)- those who consume alcohol less than once a month.
- Frequent non-heavy drinker- those who consume alcohol 1-3 days per month, 1-4 days per week, or 5 or more days per week but did not consume more than 5 standard drinks on any occasion in the past 30 days.
- Heavy episodic drinker- those who consume at least 60 grams or more (approximately 5 drinks) of pure alcohol on at least one occasion in the past 30 days.

Figure 12.4 shows the distribution of older adults by alcohol consumption status and percentage of adult men and women in urban and rural areas by alcohol consumption. In India, 86% of older adults age 45 and above have never consumed any form of alcohol in their lifetime; 8% are social drinkers; 3% consume alcohol frequently but in lower quantities; and another 3% are heavy episodic drinkers. The distribution shows that the prevalence of frequent non-heavy drinking and heavy episodic drinking is higher among older adult age 45 and above residing in rural (3.6% and 3.5%, respectively) than urban (1.8% and 2.1%, respectively) areas.

**Figure 12.4 Percent distribution of older adults age 45 and above\* by alcohol consumption status, India, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age

Table 12.5 presents the percentage of older adults who are frequent non-heavy drinkers and heavy episodic drinkers by background characteristics. Among older adult men age 45 and above, 6% are frequent non-heavy drinkers and another 6% are heavy episodic drinkers in India; whereas among older adult women age 45 and above, the prevalence of frequent non-heavy drinkers and heavy episodic drinkers is less than 1% in India. Among men, the prevalence of heavy episodic drinking is higher among older adults age 45-59 (8%) than among the elderly age 60 and above (5%), and among older adults age 45 and above in rural (7%) compared to urban areas (5%). The prevalence of heavy episodic drinking among older adult men and women age 45 and above declines as the level of education increases. Among older adult men and women age 45 and above, the proportion of heavy episodic drinkers is relatively higher among Christians (13% and 1.5%, respectively) and those belonging to Scheduled tribe (15% and 3.3%, respectively).

A cross-state variation in the prevalence of frequent non-heavy drinking and heavy episodic drinking is presented in Table 12.6. More than 15% of older adult men age 45 and above are heavy episodic drinkers in Manipur (22%), Daman & Diu (19%), and Assam (16%); whereas, the prevalence of frequent non-heavy drinkers among older adult men age 45 and above is more than 20% in Telangana (24%) and Daman & Diu (23%). Among older adult women age 45 and above, the prevalence of heavy episodic drinking is higher in Arunachal Pradesh (5%) followed by Dadra & Nagar Haveli (3.4%), Assam (3%), and Telangana (2.6%); whereas the prevalence of frequent non-heavy drinkers among older adult women is 4-6% in Odisha, Telangana and Dadra & Nagar Haveli.

**Table 12.5 Percentage of older adults age 45 and above\* who are frequent non-heavy drinker and heavy episodic drinker by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Male                                    |                                     |               | Female                                  |                                     |               |
|------------------------------------------|-----------------------------------------|-------------------------------------|---------------|-----------------------------------------|-------------------------------------|---------------|
|                                          | Frequent non-heavy drinker <sup>3</sup> | Heavy episodic drinker <sup>4</sup> | Number        | Frequent non-heavy drinker <sup>3</sup> | Heavy episodic drinker <sup>4</sup> | Number        |
| <b>Place of residence</b>                |                                         |                                     |               |                                         |                                     |               |
| Rural                                    | 6.2                                     | 6.7                                 | 19,790        | 0.8                                     | 0.7                                 | 26,436        |
| Urban                                    | 4.3                                     | 5.1                                 | 10,461        | 0.1                                     | 0.2                                 | 14,944        |
| <b>Age</b>                               |                                         |                                     |               |                                         |                                     |               |
| 45-59*                                   | 6.5                                     | 7.6                                 | 15,309        | 0.5                                     | 0.5                                 | 25,112        |
| ≥ 60                                     | 4.9                                     | 4.9                                 | 14,942        | 0.7                                     | 0.6                                 | 16,268        |
| <b>Marital status</b>                    |                                         |                                     |               |                                         |                                     |               |
| Currently married                        | 5.6                                     | 6.3                                 | 26,519        | 0.5                                     | 0.4                                 | 28,386        |
| Widowed                                  | 5.4                                     | 5.3                                 | 2,749         | 0.8                                     | 0.8                                 | 11,739        |
| Divorced/Separated/Deserted/ Others      | 7.2                                     | 6.2                                 | 983           | 0.7                                     | 0.4                                 | 1,255         |
| <b>Living arrangement</b>                |                                         |                                     |               |                                         |                                     |               |
| Living alone                             | 3.1                                     | 8.0                                 | 586           | 1.0                                     | 0.4                                 | 1,710         |
| Living with spouse and/or others         | 5.8                                     | 5.6                                 | 5,166         | 0.6                                     | 0.5                                 | 5,211         |
| Living with spouse and children          | 5.6                                     | 6.5                                 | 20,997        | 0.4                                     | 0.3                                 | 22,648        |
| Living with children and others          | 6.3                                     | 5.6                                 | 2,533         | 0.7                                     | 0.9                                 | 9,956         |
| Living with others only                  | 6.3                                     | 4.9                                 | 969           | 0.8                                     | 0.6                                 | 1,855         |
| <b>Religion</b>                          |                                         |                                     |               |                                         |                                     |               |
| Hindu                                    | 6.1                                     | 6.5                                 | 22,243        | 0.6                                     | 0.5                                 | 30,256        |
| Muslim                                   | 1.1                                     | 0.7                                 | 3,511         | -                                       | -                                   | 5,084         |
| Christian                                | 13.1                                    | 12.8                                | 3,023         | 2.3                                     | 1.5                                 | 4,153         |
| Others                                   | 4.4                                     | 11.0                                | 1,474         | 0.1                                     | 1.1                                 | 1,887         |
| <b>Caste/tribe</b>                       |                                         |                                     |               |                                         |                                     |               |
| Scheduled tribe                          | 12.3                                    | 14.9                                | 5,262         | 4.0                                     | 3.3                                 | 7,164         |
| Scheduled caste                          | 6.9                                     | 8.1                                 | 5,008         | 0.5                                     | 0.6                                 | 6,949         |
| Other backward class                     | 5.3                                     | 5.5                                 | 11,415        | 0.3                                     | 0.2                                 | 15,527        |
| None of the above                        | 3.3                                     | 3.2                                 | 8,566         | -                                       | -                                   | 11,740        |
| <b>Education</b>                         |                                         |                                     |               |                                         |                                     |               |
| No schooling                             | 7.6                                     | 8.2                                 | 9,406         | 0.8                                     | 0.8                                 | 23,579        |
| Less than 5 years complete               | 5.9                                     | 6.6                                 | 4,031         | 0.6                                     | 0.2                                 | 3,955         |
| 5-9 years complete                       | 5.0                                     | 6.1                                 | 8,528         | 0.1                                     | 0.1                                 | 8,228         |
| 10 or more years complete                | 3.7                                     | 3.5                                 | 8,286         | 0.1                                     | 0.1                                 | 5,618         |
| <b>Work status</b>                       |                                         |                                     |               |                                         |                                     |               |
| Currently working                        | 6.6                                     | 7.0                                 | 19,651        | 1.1                                     | 1.0                                 | 13,035        |
| Worked in past but currently not working | 4.1                                     | 4.9                                 | 9,350         | 0.6                                     | 0.5                                 | 8,458         |
| Never worked                             | 2.6                                     | 3.7                                 | 1,250         | 0.2                                     | 0.2                                 | 19,887        |
| <b>MPCE quintile</b>                     |                                         |                                     |               |                                         |                                     |               |
| Poorest                                  | 6.2                                     | 5.8                                 | 5,901         | 1.2                                     | 0.7                                 | 8,126         |
| Poorer                                   | 5.1                                     | 6.6                                 | 6,047         | 0.7                                     | 0.8                                 | 8,372         |
| Middle                                   | 5.7                                     | 6.5                                 | 6,047         | 0.5                                     | 0.5                                 | 8,369         |
| Richer                                   | 6.4                                     | 6.5                                 | 6,178         | 0.3                                     | 0.2                                 | 8,394         |
| Richest                                  | 5.0                                     | 5.6                                 | 6,078         | 0.3                                     | 0.3                                 | 8,119         |
| <b>Total</b>                             | <b>5.7</b>                              | <b>6.2</b>                          | <b>30,251</b> | <b>0.6</b>                              | <b>0.5</b>                          | <b>41,380</b> |

Notes

\*Including spouse irrespective of age, "-" indicates less number of cases/no cases

<sup>1</sup> Frequent non-heavy drinker refers to those who consume alcohol 1-3 days per month, 1-4 days per week or 5 or more days per week but not consume more than 5 standard drinks on any occasion in past 30 days

<sup>2</sup> Heavy episodic drinker refers to those who consume at least 60 grams or more (approximately 5 drinks) of pure alcohol on at least one occasion in the past 30 days.

**Table 12.6 Percentage of older adults age 45 and above\* who are frequent non-heavy drinker and heavy episodic drinker, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Male                                    |                                     |               | Female                                  |                                     |               |
|---------------------------|-----------------------------------------|-------------------------------------|---------------|-----------------------------------------|-------------------------------------|---------------|
|                           | Frequent non-heavy drinker <sup>1</sup> | Heavy episodic drinker <sup>2</sup> | Number        | Frequent non-heavy drinker <sup>1</sup> | Heavy episodic drinker <sup>2</sup> | Number        |
| <b>India</b>              | <b>5.7</b>                              | <b>6.2</b>                          | <b>30,251</b> | <b>0.6</b>                              | <b>0.5</b>                          | <b>41,380</b> |
| <b>North</b>              |                                         |                                     |               |                                         |                                     |               |
| Chandigarh                | 6.8                                     | 9.4                                 | 432           | -                                       | [0.2]                               | 560           |
| Delhi                     | 2.9                                     | 8.3                                 | 594           | -                                       | -                                   | 719           |
| Haryana                   | 5.8                                     | 9.2                                 | 788           | -                                       | [0.1]                               | 1,102         |
| Himachal Pradesh          | 12.6                                    | 5.9                                 | 555           | -                                       | -                                   | 821           |
| Jammu & Kashmir           | [0.3]                                   | 4.3                                 | 708           | [0.2]                                   | -                                   | 900           |
| Punjab                    | 4.9                                     | 12.3                                | 912           | -                                       | -                                   | 1,181         |
| Rajasthan                 | 4.2                                     | 4.7                                 | 961           | -                                       | -                                   | 1,272         |
| Uttarakhand               | 9.4                                     | 7.1                                 | 553           | [0.1]                                   | -                                   | 801           |
| <b>Central</b>            |                                         |                                     |               |                                         |                                     |               |
| Chhattisgarh              | 10.3                                    | 7.6                                 | 905           | 2.9                                     | 1.3                                 | 1,147         |
| Madhya Pradesh            | 3.9                                     | 4.5                                 | 1,310         | [0.2]                                   | [0.1]                               | 1,581         |
| Uttar Pradesh             | 1.9                                     | 4.5                                 | 2,068         | -                                       | [0.1]                               | 2,477         |
| <b>East</b>               |                                         |                                     |               |                                         |                                     |               |
| Bihar                     | 1.5                                     | 0.8                                 | 1,546         | -                                       | -                                   | 1,959         |
| Jharkhand                 | 8.1                                     | 10.2                                | 1,036         | 1.2                                     | 2.0                                 | 1,414         |
| Odisha                    | 15.1                                    | 8.3                                 | 1,248         | 4.3                                     | 2.2                                 | 1,650         |
| West Bengal               | 2.7                                     | 5.0                                 | 1,606         | 0.1                                     | 0.3                                 | 2,303         |
| <b>Northeast</b>          |                                         |                                     |               |                                         |                                     |               |
| Arunachal Pradesh         | 3.4                                     | 13.9                                | 550           | [1.4]                                   | 5.2                                 | 661           |
| Assam                     | 6.7                                     | 15.9                                | 965           | 3.4                                     | 3.0                                 | 1,388         |
| Manipur                   | 7.1                                     | 21.7                                | 579           | 1.1                                     | 2.2                                 | 778           |
| Meghalaya                 | 2.6                                     | 8.8                                 | 368           | -                                       | [0.4]                               | 597           |
| Mizoram                   | 3.7                                     | 2.0                                 | 562           | -                                       | -                                   | 681           |
| Nagaland                  | 9.8                                     | 6.3                                 | 588           | [0.1]                                   | -                                   | 725           |
| Tripura                   | 2.3                                     | 11.0                                | 485           | [0.3]                                   | 1.9                                 | 698           |
| <b>West</b>               |                                         |                                     |               |                                         |                                     |               |
| Dadra & Nagar Haveli      | 18.0                                    | 8.3                                 | 457           | 6.0                                     | 3.4                                 | 602           |
| Daman & Diu               | 22.7                                    | 18.7                                | 397           | 2.6                                     | 1.3                                 | 570           |
| Goa                       | 4.5                                     | 5.4                                 | 561           | -                                       | [0.1]                               | 851           |
| Gujarat                   | 4.5                                     | 6.4                                 | 959           | 0.5                                     | 1.0                                 | 1,314         |
| Maharashtra               | 4.8                                     | 4.9                                 | 1,593         | -                                       | -                                   | 2,348         |
| <b>South</b>              |                                         |                                     |               |                                         |                                     |               |
| Andaman & Nicobar Islands | 5.1                                     | 12.8                                | 562           | [0.5]                                   | 2.1                                 | 675           |
| Andhra Pradesh            | 14.7                                    | 4.8                                 | 1,110         | [0.2]                                   | -                                   | 1,543         |
| Karnataka                 | 7.6                                     | 8.7                                 | 957           | [0.1]                                   | 0.7                                 | 1,437         |
| Kerala                    | 8.8                                     | 5.6                                 | 970           | -                                       | -                                   | 1,485         |
| Lakshadweep               | -                                       | [0.2]                               | 442           | -                                       | -                                   | 691           |
| Puducherry                | 11.2                                    | 11.3                                | 543           | -                                       | -                                   | 871           |
| Tamil Nadu                | 5.5                                     | 8.6                                 | 1,389         | [0.1]                                   | [0.1]                               | 2,129         |
| Telangana                 | 24.1                                    | 8.6                                 | 992           | 5.1                                     | 2.6                                 | 1,449         |

Notes

\*Including spouse irrespective of age, “[ ]” based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, “-” indicates less number of cases/no cases.

<sup>1</sup> Frequent non-heavy drinker refers to those who consume alcohol 1-3 days per month, 1-4 days per week or 5 or more days per week but not consume more than 5 standard drinks on any occasion in past 30 days

<sup>2</sup> Heavy episodic drinker refers to those who consume at least 60 grams or more (approximately 5 drinks) of pure alcohol on at least one occasion in the past 30 days.

### Key findings: tobacco and alcohol consumption

- Overall, in India, 12% of older adults age 45 and above are current smokers and 20% are current users of smokeless tobacco. The prevalence of current tobacco consumption (smoking or smokeless) among older adults age 45 and above is 30% in India.
- Among elderly women age 60 and above, 16% are current users of smokeless tobacco and 3% are current smokers; whereas, among elderly men age 60 and above, 28% are current users of smokeless tobacco and 26% are current smokers, indicating very small difference between use of smokeless tobacco and smoking.
- More than half of elderly men age 60 and above are current smokers in the states/UTs of Haryana (53%) and Tripura (52%); whereas, current users of smokeless tobacco among elderly men age 60 and above are higher in the states of Odisha (65%), Jharkhand (57%), and Bihar (53%).
- Among elderly women age 60 and above, current users of smokeless tobacco are higher in the states of Odisha (57%), Tripura (56%), Assam (39%), and Mizoram (33%) whereas, the prevalence of current smoking is higher in the states of Mizoram (24%), Tripura (19%), and Uttarakhand (18%).
- In India, 3% of older adults age 45 and above are heavy episodic drinkers and at risk of harmful effects of alcohol. Heavy episodic drinking is more common in older adult men (6%) than in older adult women (0.5%) age 45 and above.

## 12.3 PHYSICAL ACTIVITY

Physical activity means movement of the body that consumes energy, and it is essential to optimum health and wellbeing. Regular physical activity is beneficial in many ways because it reduces the risk of non-communicable diseases such as ischaemic heart disease, hypertension, stroke, diabetes, cancer, dementia, and depression. Additionally, it also prevents overweight and obesity and can improve mental health and musculoskeletal problems (osteoarthritis, osteoporosis), and help to achieve healthy aging. In individuals who are not sufficiently physically active, the risk of cardiovascular disease, diabetes, and cancer is 20-30% higher than in those who are sufficiently active. Physical inactivity also shortens the life span by 3-4 years (GoI, 2018).

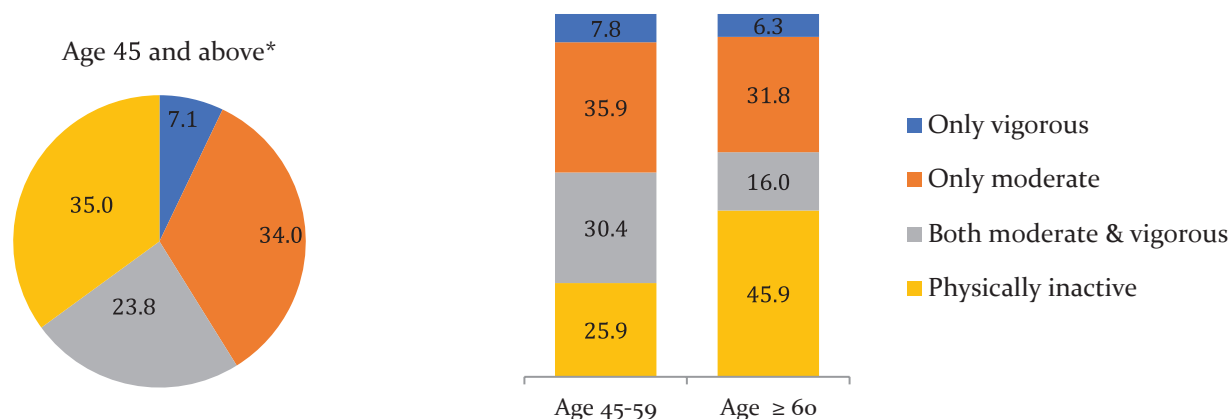
In the LASI, information was collected on moderate and vigorous physical activities, frequency of physical activity, and the average time spent daily in the activity. For moderate physical activity, respondents were asked about their engagement in moderately energetic activities such as cleaning house, washing clothes, fetching water, drawing water from a well, gardening, walking at a moderate pace, bicycling at a regular pace, and floor or stretching exercises. For vigorous activity, respondents were asked about their involvement in running or jogging, swimming, going to a health centre/gym, cycling, digging with a spade or shovel, heavy lifting, chopping, farm work, fast bicycling, and cycling with loads. WHO Global recommendations on moderate and vigorous physical activity were used for developing physical activity indicators for the LASI (GoI, 2018).

WHO global physical activity recommendations for older adults and elderly:

- Moderate physical activity: Those who perform at least 150 minutes of moderate-intensity physical activity throughout the week.
- Vigorous physical activity: Those who perform at least 75 minutes of vigorous-intensity physical activity throughout the week.
- Physically active: Those who are either engaged in moderate physical activity or vigorous physical activity or an equivalent combination of moderate- and vigorous-intensity activity.
- Physically inactive: Those who are not engaged in any type of moderate or vigorous physical activity for a given time throughout the week.

Figure 12.5 shows physically active and inactive status among older adults age 45 and above by age. In India, 34% of older adults age 45 and above are engaged in only moderate physical activity, 7% in vigorous activity, 24% are engaged in both moderate and vigorous activities; and 35% are physically inactive.

**Figure 12.5 Percent distribution of physically active and inactive older adults by age, India, LASI Wave 1, 2017-18**



Note

\* Including spouse irrespective of age

Table 12.7 shows the percentage of older adults age 45 and above who are physically active and physically inactive by sex and background characteristics. A higher proportion of older adult women age 45 and above (69%) are physically active compared to men (60%). In contrast, physical inactivity is higher among older adult men age 45 and above (40%) compared with women (31%). A higher proportion of older adult men age 45 and above residing in rural areas (62%) are more physically active than those residing in urban areas (55%).

A cross-state variation in the percentage of older adults age 45 and above who are physically active and inactive is presented in Table 12.8. More than three-fourths of older adult men and women age 45 and above are physically active in Himachal Pradesh, Assam, Karnataka, Jharkhand, Puducherry, and Nagaland. In older men age 45 and above, the prevalence of physical inactivity is higher in Mizoram (80%), Delhi (63%), Telangana (62%) and Haryana (60%); whereas more than half of the older women age 45 and above are physically inactive in Mizoram (75%), Arunachal Pradesh (56%), Delhi (55%), and Haryana (50%).

**Table 12.7 Percentage of physically active and inactive older adults age 45 and above\* by sex and background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Male                           |                                  |               | Female                         |                                  |               |
|------------------------------------------|--------------------------------|----------------------------------|---------------|--------------------------------|----------------------------------|---------------|
|                                          | Physically active <sup>1</sup> | Physically inactive <sup>2</sup> | Number        | Physically active <sup>1</sup> | Physically inactive <sup>2</sup> | Number        |
| <b>Place of residence</b>                |                                |                                  |               |                                |                                  |               |
| Rural                                    | 61.7                           | 38.3                             | 19,794        | 67.6                           | 32.4                             | 26,438        |
| Urban                                    | 55.4                           | 44.6                             | 10,466        | 70.9                           | 29.1                             | 14,945        |
| <b>Age</b>                               |                                |                                  |               |                                |                                  |               |
| 45-59*                                   | 69.2                           | 51.0                             | 15,311        | 77.0                           | 23.0                             | 25,115        |
| ≥ 60                                     | 30.8                           | 49.0                             | 14,949        | 56.9                           | 43.1                             | 16,269        |
| <b>Marital status</b>                    |                                |                                  |               |                                |                                  |               |
| Currently married                        | 61.5                           | 38.5                             | 26,523        | 74.0                           | 26.0                             | 28,388        |
| Widowed                                  | 46.5                           | 53.5                             | 2,751         | 56.2                           | 43.8                             | 11,740        |
| Divorced/Separated/Deserted/ Others      | 56.3                           | 43.7                             | 986           | 74.4                           | 25.6                             | 1,255         |
| <b>Living arrangement</b>                |                                |                                  |               |                                |                                  |               |
| Living alone                             | 58.9                           | 41.1                             | 586           | 70.0                           | 30.0                             | 1,710         |
| Living with spouse and/or others         | 58.3                           | 41.7                             | 5,167         | 73.8                           | 26.2                             | 5,211         |
| Living with spouse and children          | 62.3                           | 37.7                             | 21,000        | 74.2                           | 25.8                             | 22,649        |
| Living with children and others          | 47.2                           | 52.8                             | 2,536         | 56.4                           | 43.6                             | 9,958         |
| Living with others only                  | 49.2                           | 50.8                             | 971           | 54.8                           | 45.2                             | 1,855         |
| <b>Religion</b>                          |                                |                                  |               |                                |                                  |               |
| Hindu                                    | 60.3                           | 39.7                             | 22,248        | 68.9                           | 31.1                             | 30,260        |
| Muslim                                   | 58.4                           | 41.6                             | 3,512         | 66.9                           | 33.1                             | 5,084         |
| Christian                                | 57.2                           | 42.8                             | 3,026         | 71.2                           | 28.8                             | 4,154         |
| Others                                   | 53.7                           | 46.3                             | 1,474         | 66.1                           | 33.9                             | 1,885         |
| <b>Caste/tribe</b>                       |                                |                                  |               |                                |                                  |               |
| Scheduled tribe                          | 64.4                           | 35.6                             | 5,264         | 70.2                           | 29.8                             | 7,165         |
| Scheduled caste                          | 60.2                           | 39.8                             | 5,010         | 65.9                           | 34.1                             | 6,949         |
| Other backward class                     | 59.8                           | 40.2                             | 11,417        | 70.8                           | 29.2                             | 15,530        |
| None of the above                        | 58.0                           | 42.0                             | 8,569         | 66.6                           | 33.4                             | 11,739        |
| <b>Education</b>                         |                                |                                  |               |                                |                                  |               |
| No schooling                             | 58.2                           | 41.8                             | 9,411         | 65.0                           | 35.0                             | 23,582        |
| Less than 5 years complete               | 61.1                           | 38.9                             | 4,032         | 72.2                           | 27.8                             | 3,955         |
| 5-9 years complete                       | 60.3                           | 39.7                             | 8,529         | 73.9                           | 26.1                             | 8,228         |
| 10 or more years complete                | 60.6                           | 39.4                             | 8,288         | 76.8                           | 23.2                             | 5,618         |
| <b>Work status</b>                       |                                |                                  |               |                                |                                  |               |
| Currently working                        | 71.8                           | 28.2                             | 19,650        | 82.4                           | 17.6                             | 13,036        |
| Worked in past but currently not working | 37.3                           | 62.7                             | 9,356         | 59.7                           | 40.3                             | 8,460         |
| Never worked                             | 36.1                           | 63.9                             | 1,254         | 63.2                           | 36.8                             | 19,887        |
| <b>MPCE quintile</b>                     |                                |                                  |               |                                |                                  |               |
| Poorest                                  | 60.4                           | 39.6                             | 5,904         | 66.1                           | 33.9                             | 8,128         |
| Poorer                                   | 60.7                           | 39.3                             | 6,047         | 68.1                           | 31.9                             | 8,373         |
| Middle                                   | 59.1                           | 40.9                             | 6,050         | 68.9                           | 31.1                             | 8,367         |
| Richer                                   | 58.0                           | 42.0                             | 6,177         | 70.8                           | 29.2                             | 8,396         |
| Richest                                  | 60.8                           | 39.2                             | 6,082         | 69.7                           | 30.3                             | 8,119         |
| <b>Total</b>                             | <b>59.8</b>                    | <b>40.2</b>                      | <b>30,260</b> | <b>68.7</b>                    | <b>31.3</b>                      | <b>41,383</b> |

Notes

*\*Including spouse irrespective of age*

<sup>1</sup> Physically active: Those who are either engaged in moderate physical activity (at least 150 minutes throughout the week) or vigorous physical activity (at least 75 minutes throughout the week) or an equivalent combination of moderate- and vigorous-intensity activity.

<sup>2</sup> Physically inactive: Those who are not engaged in any type of moderate or vigorous physical activity for a given time throughout the week.



**Table 12.8 Percentage of physically active and inactive older adults age 45 and above\* by sex, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Male                           |                                  |               | Female                         |                                  |               |
|---------------------------|--------------------------------|----------------------------------|---------------|--------------------------------|----------------------------------|---------------|
|                           | Physically active <sup>1</sup> | Physically inactive <sup>2</sup> | Number        | Physically active <sup>1</sup> | Physically inactive <sup>2</sup> | Number        |
| <b>India</b>              | <b>59.8</b>                    | <b>40.2</b>                      | <b>30,260</b> | <b>68.7</b>                    | <b>31.3</b>                      | <b>41,384</b> |
| <b>North</b>              |                                |                                  |               |                                |                                  |               |
| Chandigarh                | 51.3                           | 48.7                             | 432           | 62.4                           | 37.6                             | 560           |
| Delhi                     | 36.6                           | 63.4                             | 595           | 44.9                           | 55.1                             | 719           |
| Haryana                   | 40.5                           | 59.5                             | 788           | 49.9                           | 50.1                             | 1,102         |
| Himachal Pradesh          | 76.6                           | 23.4                             | 555           | 86.7                           | 13.3                             | 821           |
| Jammu & Kashmir           | 41.5                           | 58.5                             | 709           | 54.6                           | 45.4                             | 900           |
| Punjab                    | 48.2                           | 51.8                             | 910           | 58.5                           | 41.6                             | 1,180         |
| Rajasthan                 | 54.9                           | 45.1                             | 961           | 56.5                           | 43.5                             | 1,272         |
| Uttarakhand               | 68.8                           | 31.2                             | 553           | 72.9                           | 27.1                             | 801           |
| <b>Central</b>            |                                |                                  |               |                                |                                  |               |
| Chhattisgarh              | 65.1                           | 34.9                             | 905           | 69.2                           | 30.8                             | 1,147         |
| Madhya Pradesh            | 55.3                           | 44.7                             | 1,310         | 61.5                           | 38.5                             | 1,581         |
| Uttar Pradesh             | 56.9                           | 43.1                             | 2,068         | 53.2                           | 46.8                             | 2,478         |
| <b>East</b>               |                                |                                  |               |                                |                                  |               |
| Bihar                     | 63.7                           | 36.3                             | 1,546         | 66.8                           | 33.2                             | 1,960         |
| Jharkhand                 | 74.7                           | 25.3                             | 1,036         | 78.4                           | 21.6                             | 1,414         |
| Odisha                    | 74.1                           | 25.9                             | 1,248         | 78.0                           | 22.0                             | 1,650         |
| West Bengal               | 71.6                           | 28.4                             | 1,608         | 75.2                           | 24.8                             | 2,303         |
| <b>Northeast</b>          |                                |                                  |               |                                |                                  |               |
| Arunachal Pradesh         | 40.6                           | 59.4                             | 552           | 44.3                           | 55.7                             | 662           |
| Assam                     | 79.1                           | 20.9                             | 965           | 78.9                           | 21.1                             | 1,388         |
| Manipur                   | 54.3                           | 45.7                             | 579           | 62.6                           | 37.4                             | 778           |
| Meghalaya                 | 44.4                           | 55.6                             | 368           | 52.5                           | 47.5                             | 597           |
| Mizoram                   | 19.7                           | 80.3                             | 563           | 24.7                           | 75.3                             | 681           |
| Nagaland                  | 75.7                           | 24.3                             | 589           | 82.4                           | 17.6                             | 725           |
| Tripura                   | 65.2                           | 34.8                             | 485           | 67.5                           | 32.5                             | 698           |
| <b>West</b>               |                                |                                  |               |                                |                                  |               |
| Dadra & Nagar Haveli      | 67.1                           | 32.9                             | 457           | 85.7                           | 14.3                             | 602           |
| Daman & Diu               | 47.8                           | 52.2                             | 397           | 72.8                           | 27.2                             | 570           |
| Goa                       | 40.7                           | 59.3                             | 560           | 74.5                           | 25.5                             | 851           |
| Gujarat                   | 63.1                           | 36.9                             | 959           | 78.8                           | 21.2                             | 1,314         |
| Maharashtra               | 55.4                           | 44.6                             | 1,594         | 75.9                           | 24.1                             | 2,348         |
| <b>South</b>              |                                |                                  |               |                                |                                  |               |
| Andaman & Nicobar Islands | 51.4                           | 48.6                             | 563           | 61.1                           | 38.9                             | 675           |
| Andhra Pradesh            | 47.8                           | 52.2                             | 1,111         | 63.4                           | 36.6                             | 1,544         |
| Karnataka                 | 73.1                           | 26.9                             | 955           | 84.2                           | 15.8                             | 1,437         |
| Kerala                    | 42.0                           | 58.0                             | 973           | 58.2                           | 41.8                             | 1,486         |
| Lakshadweep               | 47.2                           | 52.8                             | 442           | 74.7                           | 25.3                             | 691           |
| Puducherry                | 70.2                           | 29.8                             | 543           | 81.3                           | 18.7                             | 871           |
| Tamil Nadu                | 53.5                           | 46.5                             | 1,389         | 68.4                           | 31.6                             | 2,129         |
| Telangana                 | 38.5                           | 61.5                             | 992           | 55.4                           | 44.6                             | 1,449         |

Notes

\*Including spouse irrespective of age

<sup>1</sup> Physically active: Those who are either engaged in moderate physical activity (at least 150 minutes throughout the week) or vigorous physical activity (at least 75 minutes throughout the week) or an equivalent combination of moderate- and vigorous-intensity activity.

<sup>2</sup> Physically inactive: Those who are not engaged in any type of moderate or vigorous physical activity for a given time throughout the week.

## 12.4 YOGA, MEDITATION, ASANA, AND PRANAYAMA

*Yoga*, meditation, *asana*, and *pranayama* are all components of *yoga*, developed for all-round human well-being and growth. Experts from various branches of medicine, including modern medical sciences, are realizing the role of these techniques in preventing and mitigating disease and promoting health. Regular practice of *yoga* prevents mental health disorders and improves an individual's resistance and ability to endure stressful situations (MoA, 2019).

The LASI is the first nationally representative study to collect data on *yoga* practice, meditation, *asana*, *pranayama*, etc. among older adults age 45 and above in all India's states/UTs. Questions asked to participants include 'have you engaged in activities like *yoga*, meditation, *asana*, *pranayama*, and similar activities', frequency of activities; and average time spent engaging in these activities.

The prevalence of *yoga*, meditation, *asana* and *pranayama* practice by background characteristics is presented in Table 12.9. About 11% of older adults age 45 and above in India are practicing some form of *yoga* more than once a week. Among elderly age 60 and above, a higher proportion of men (14%) than women (9%) and those residing in urban (16%) than rural areas (9%) are engaged in *yoga* activities more than once a week. The prevalence of *yoga*, meditation, *asana*, and *pranayama* increases with increase in education and MPCE quintiles.

Wide cross-state variation is seen in *yoga*, meditation, *asana*, and *pranayama* practice among older adults age 45 and above; ranging from 64% in Punjab to less than 1% in Meghalaya (0.8) and Mizoram (0.3%) (Table 12.10). More than a fifth of elderly age 60 and above are practicing *yoga* in the states/UTs of Punjab (67%), Nagaland (36%), Chandigarh (29%), and Jharkhand (27%); whereas the proportion of older adults age 45 and above engaged in *yoga* related activities are quite low in the south and central Indian states/UTs.

**Table 12.9 Percentage of older adults practicing yoga/meditation/asanas/pranayama etc. more than once a week by background characteristics, India, LASI Wave 1, 2017-2018**

| Background characteristics               | Age 45-59*                         |               | Age ≥ 60                           |               | Total                              |               |
|------------------------------------------|------------------------------------|---------------|------------------------------------|---------------|------------------------------------|---------------|
|                                          | More than once a week <sup>1</sup> | Number        | More than once a week <sup>1</sup> | Number        | More than once a week <sup>1</sup> | Number        |
| <b>Place of residence</b>                |                                    |               |                                    |               |                                    |               |
| Rural                                    | 9.0                                | 25,608        | 9.4                                | 20,576        | 9.2                                | 46,184        |
| Urban                                    | 13.4                               | 14,795        | 15.7                               | 10,607        | 14.4                               | 25,402        |
| <b>Sex</b>                               |                                    |               |                                    |               |                                    |               |
| Male                                     | 10.8                               | 15,305        | 13.7                               | 14,933        | 12.3                               | 30,238        |
| Female                                   | 10.3                               | 25,098        | 9.0                                | 16,250        | 9.8                                | 41,348        |
| <b>Marital status</b>                    |                                    |               |                                    |               |                                    |               |
| Currently married                        | 10.9                               | 35,140        | 13.0                               | 19,737        | 11.7                               | 54,877        |
| Widowed                                  | 8.1                                | 3,845         | 8.3                                | 10,627        | 8.3                                | 1,4472        |
| Divorced/Separated/Deserted/ Others      | 7.2                                | 1,418         | 8.6                                | 819           | 7.7                                | 2,237         |
| <b>Living arrangement</b>                |                                    |               |                                    |               |                                    |               |
| Living alone                             | 8.4                                | 683           | 5.9                                | 1,611         | 6.4                                | 2,294         |
| Living with spouse and/or others         | 10.0                               | 4,322         | 10.4                               | 6,044         | 10.2                               | 10,366        |
| Living with spouse and children          | 11.0                               | 30,171        | 14.4                               | 13,456        | 12.1                               | 43,627        |
| Living with children and others          | 8.1                                | 4,073         | 8.9                                | 8,405         | 8.7                                | 12,478        |
| Living with others only                  | 8.5                                | 1,154         | 7.9                                | 1,667         | 8.1                                | 2,821         |
| <b>Religion</b>                          |                                    |               |                                    |               |                                    |               |
| Hindu                                    | 10.0                               | 29,645        | 10.3                               | 22,825        | 10.2                               | 52,470        |
| Muslim                                   | 9.8                                | 4,885         | 11.5                               | 3,696         | 10.5                               | 8,581         |
| Christian                                | 5.8                                | 4,046         | 5.2                                | 3,130         | 5.5                                | 7,176         |
| Others                                   | 30.2                               | 1,827         | 35.4                               | 1,532         | 32.8                               | 3,359         |
| <b>Caste/tribe</b>                       |                                    |               |                                    |               |                                    |               |
| Scheduled tribe                          | 5.7                                | 7,287         | 6.1                                | 5,134         | 5.8                                | 12,421        |
| Scheduled caste                          | 9.0                                | 6,847         | 9.8                                | 5,100         | 9.3                                | 11,947        |
| Other backward class                     | 9.9                                | 15,155        | 9.6                                | 11,776        | 9.7                                | 26,931        |
| None of the above                        | 14.5                               | 11,114        | 16.2                               | 9,173         | 15.4                               | 20,287        |
| <b>Education</b>                         |                                    |               |                                    |               |                                    |               |
| No schooling                             | 6.3                                | 16,193        | 6.7                                | 16,758        | 6.5                                | 32,951        |
| Less than 5 years complete               | 8.7                                | 4,231         | 11.1                               | 3,753         | 9.9                                | 7,984         |
| 5-9 years complete                       | 11.5                               | 10,798        | 14.2                               | 5,953         | 12.6                               | 16,751        |
| 10 or more years complete                | 18.5                               | 9,181         | 25.9                               | 4,719         | 21.1                               | 13,900        |
| <b>Work status</b>                       |                                    |               |                                    |               |                                    |               |
| Currently working                        | 9.1                                | 23,467        | 9.8                                | 9,213         | 9.3                                | 32,680        |
| Worked in past but currently not working | 9.6                                | 4,542         | 12.2                               | 13,255        | 11.5                               | 17,797        |
| Never worked                             | 13.9                               | 12,394        | 11.3                               | 8,715         | 12.8                               | 21,109        |
| <b>MPCE quintile</b>                     |                                    |               |                                    |               |                                    |               |
| Poorest                                  | 6.0                                | 7,602         | 7.1                                | 6,421         | 6.5                                | 14,023        |
| Poorer                                   | 8.9                                | 7,987         | 9.6                                | 6,423         | 9.2                                | 14,410        |
| Middle                                   | 11.8                               | 8,044         | 11.8                               | 6,362         | 11.8                               | 14,406        |
| Richer                                   | 12.6                               | 8,436         | 12.8                               | 6,128         | 12.7                               | 14,564        |
| Richest                                  | 13.4                               | 8,334         | 16.2                               | 5,849         | 14.6                               | 14,183        |
| <b>Total</b>                             | <b>10.5</b>                        | <b>40,403</b> | <b>11.2</b>                        | <b>31,183</b> | <b>10.8</b>                        | <b>71,586</b> |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Refers to yoga/meditation/asanas/pranayama etc. practicing daily or more than once a week

**Table 12.10 Percentage of older adults practicing yoga/meditation/asanas/pranayama etc. more than once a week, States/UTs, LASI Wave 1, 2017-2018**

| State/ Union Territory    | Age 45-59*                         |        | Age ≥ 60                           |        | Total                              |        |
|---------------------------|------------------------------------|--------|------------------------------------|--------|------------------------------------|--------|
|                           | More than once a week <sup>1</sup> | Number | More than once a week <sup>1</sup> | Number | More than once a week <sup>1</sup> | Number |
| <b>India</b>              | 10.5                               | 40,403 | 11.2                               | 31,183 | 10.8                               | 71,586 |
| <b>North</b>              |                                    |        |                                    |        |                                    |        |
| Chandigarh                | 28.2                               | 614    | 28.8                               | 376    | 28.4                               | 990    |
| Delhi                     | 16.9                               | 822    | 19.9                               | 492    | 18.0                               | 1,314  |
| Haryana                   | 10.1                               | 1,047  | 8.5                                | 843    | 9.3                                | 1,890  |
| Himachal Pradesh          | 15.3                               | 761    | 17.5                               | 615    | 16.4                               | 1,376  |
| Jammu & Kashmir           | 5.1                                | 870    | 6.2                                | 712    | 5.6                                | 1,582  |
| Punjab                    | 60.1                               | 1,094  | 67.3                               | 998    | 63.6                               | 2,092  |
| Rajasthan                 | 12.9                               | 1,160  | 11.9                               | 1,073  | 12.4                               | 2,233  |
| Uttarakhand               | 13.0                               | 714    | 11.0                               | 640    | 12.0                               | 1,354  |
| <b>Central</b>            |                                    |        |                                    |        |                                    |        |
| Chhattisgarh              | 4.0                                | 1,274  | 4.4                                | 778    | 4.1                                | 2,052  |
| Madhya Pradesh            | 11.1                               | 1,582  | 12.1                               | 1,309  | 11.6                               | 2,891  |
| Uttar Pradesh             | 10.3                               | 2,387  | 10.5                               | 2,159  | 10.4                               | 4,546  |
| <b>East</b>               |                                    |        |                                    |        |                                    |        |
| Bihar                     | 9.4                                | 1,702  | 9.0                                | 1,804  | 9.2                                | 3,506  |
| Jharkhand                 | 27.6                               | 1,287  | 26.9                               | 1,163  | 27.3                               | 2,450  |
| Odisha                    | 10.3                               | 1,670  | 11.9                               | 1,228  | 11.0                               | 2,898  |
| West Bengal               | 11.9                               | 2,374  | 13.5                               | 1,537  | 12.6                               | 3,911  |
| <b>Northeast</b>          |                                    |        |                                    |        |                                    |        |
| Arunachal Pradesh         | 3.1                                | 895    | 2.3                                | 318    | 2.9                                | 1,213  |
| Assam                     | 14.5                               | 1,542  | 15.3                               | 811    | 14.8                               | 2,353  |
| Manipur                   | 5.9                                | 756    | 6.0                                | 601    | 5.9                                | 1,357  |
| Meghalaya                 | [0.6]                              | 554    | [1.0]                              | 410    | [0.8]                              | 964    |
| Mizoram                   | [0.5]                              | 713    | -                                  | 531    | [0.3]                              | 1,244  |
| Nagaland                  | 48.7                               | 705    | 35.7                               | 607    | 42.3                               | 1,312  |
| Tripura                   | 12.4                               | 728    | 12.1                               | 455    | 12.3                               | 1,183  |
| <b>West</b>               |                                    |        |                                    |        |                                    |        |
| Dadra & Nagar Haveli      | 22.6                               | 619    | 12.9                               | 439    | 18.8                               | 1,058  |
| Daman & Diu               | 11.4                               | 547    | 19.9                               | 419    | 15.4                               | 966    |
| Goa                       | 16.2                               | 781    | 17.3                               | 629    | 16.7                               | 1,410  |
| Gujarat                   | 7.7                                | 1,311  | 12.9                               | 962    | 10.1                               | 2,273  |
| Maharashtra               | 11.3                               | 2,167  | 12.5                               | 1,774  | 11.9                               | 3,941  |
| <b>South</b>              |                                    |        |                                    |        |                                    |        |
| Andaman & Nicobar Islands | 9.6                                | 717    | 7.6                                | 521    | 8.8                                | 1,238  |
| Andhra Pradesh            | 4.1                                | 1,554  | 2.9                                | 1,091  | 3.6                                | 2,645  |
| Karnataka                 | 8.4                                | 1,396  | 6.8                                | 996    | 7.7                                | 2,392  |
| Kerala                    | 4.8                                | 1,261  | 3.6                                | 1,193  | 4.2                                | 2,454  |
| Lakshadweep               | 1.0                                | 633    | 2.7                                | 500    | 1.8                                | 1,133  |
| Puducherry                | 5.3                                | 782    | 6.1                                | 632    | 5.7                                | 1,414  |
| Tamil Nadu                | 3.0                                | 1,991  | 2.6                                | 1,527  | 2.8                                | 3,518  |
| Telangana                 | 1.2                                | 1,393  | 1.5                                | 1,040  | 1.3                                | 2,433  |

Notes

\* Including spouse irrespective of age

<sup>1</sup> Refers to yoga/meditation/asanas/pranayama etc. practicing daily or more than once a week

## 12.5 FOOD AVAILABILITY

Nutrition is another domain of health behaviour included in the LASI, which explored food availability at the household level. Food security in a population means that all people, at all times, have access to sufficient food to meet their dietary needs for a productive and healthy life (FANTA, 2018). A broader look at the extent of food insecurity beyond hunger shows that 17.2% of the global population, or 1.3 billion people, have experienced food insecurity at moderate levels. This means that they do not have regular access to sufficient food even if they are not necessarily suffering from hunger; they are at greater risk of malnutrition and poor health (FAO, 2019). Despite being one of the fastest growing economies in the world, India is ranked 103 of 119 countries on food security, with hunger levels categorized as ‘serious’ (Grebmer et al., 2018).

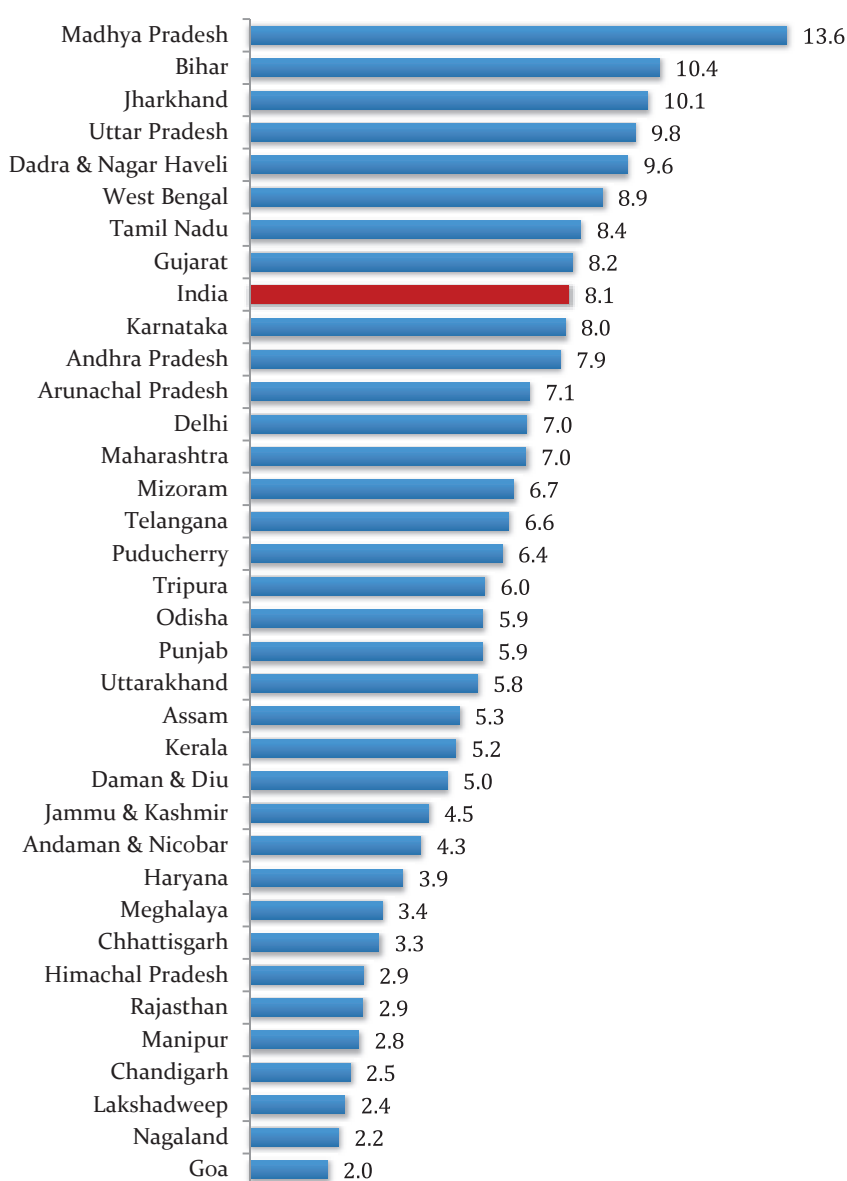
In the LASI, severe food security-related information as defined by FANTA was collected on household food non-availability over a period of twelve months prior to the survey. Respondents were asked whether, in the past 12 months, household members had to reduce the size of meals, were hungry but did not have enough food, did not eat food of their choice, or did not have food for a full day because food was unavailable (e.g. not because of health-related restrictions). LASI interviewers ensured that respondents were alone while answering these questions.

Table 12.11 shows the percentage of older adults who experienced food insufficiency by background characteristics. Overall, 6% of older adults age 45 and above in India had to reduce the size of meals, 5% were hungry but did not eat because there was not enough food, and 4% did not eat for a full day because food was unavailable in the past 12 months. None of the three indicators show much difference by age or sex; however a high percentage of older adults age 45 and above residing in rural areas reduced their meal size (7%), were hungry but did not eat (6%), or did not eat for a full day (5%) compared to their urban counterparts. Food inadequacy is evident in older adults age 45 and above living alone: 14% reduced their meal size; 14% were hungry but did not eat, and 10% did not eat for a full day. Food insufficiency is negatively related with education and MPCE quintile.

Figure 12.6 shows that, in India, 8% of older adults age 45 and above reported severe constraint in household food availability in the past 12 months, where they either reduced their meal size, did not eat even though they were hungry, or did not eat for a whole day because not enough food was available at the household level. More than one in ten older adults in Madhya Pradesh (14%), Bihar (10%), and Jharkhand (10%) reported constraint in food availability.

Cross-state variation (Table 12.12) of food insufficiency shows that the percentage of older adults who reduced their meal size is higher than the national average (6%) in states/UTs of Dadra & Nagar Haveli (7%), West Bengal (8%), Bihar (8%), Jharkhand (8%), Uttar Pradesh (8%), and Madhya Pradesh (10%). More than 6% of older adults were hungry but did not eat in most of the east Indian and central states and Tamil Nadu. The proportion of older adults who did not eat for a full day is less than 5% in most of the states/UTs, except for Bihar (6%), Uttar Pradesh (6%), and Madhya Pradesh (7%).

**Figure 12.6 Percentage of older adults age 45 and above\* who reported severe constraint\*\* in household food availability, states/UTs, LASI Wave 1, 2017-18**



**Notes**

\* Including spouse irrespective of age

\*\*Severe constraint in availability of food means in the past 12 months, household members had to reduce the size of meals, were hungry but did not have enough food, did not eat food of their choice, or did not have food for a full day because food was unavailable.

**Table 12.11 Percentage of older adults who experienced food insufficiency at household by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Reduced the size of meal <sup>1</sup> |               | Hungry but didn't eat <sup>2</sup> |               | Didn't eat for whole day <sup>3</sup> |               |
|------------------------------------------|---------------------------------------|---------------|------------------------------------|---------------|---------------------------------------|---------------|
|                                          | Age ≥ 45                              | Number        | Age ≥ 45                           | Number        | Age ≥ 45                              | Number        |
| <b>Age</b>                               |                                       |               |                                    |               |                                       |               |
| 45-59*                                   | 5.6                                   | 40,399        | 5.0                                | 40,408        | 3.4                                   | 40,408        |
| ≥ 60                                     | 6.4                                   | 31,196        | 5.6                                | 31,200        | 4.2                                   | 31,199        |
| <b>Place of residence</b>                |                                       |               |                                    |               |                                       |               |
| Rural                                    | 7.2                                   | 46,208        | 6.2                                | 46,209        | 4.6                                   | 46,209        |
| Urban                                    | 3.3                                   | 25,387        | 3.3                                | 25,399        | 2.0                                   | 25,398        |
| <b>Sex</b>                               |                                       |               |                                    |               |                                       |               |
| Male                                     | 5.9                                   | 30,239        | 5.2                                | 30,243        | 4.0                                   | 30,241        |
| Female                                   | 6.0                                   | 41,356        | 5.4                                | 41,365        | 3.6                                   | 41,366        |
| <b>Marital status</b>                    |                                       |               |                                    |               |                                       |               |
| Currently married                        | 5.3                                   | 54,878        | 4.9                                | 54,892        | 3.3                                   | 54,890        |
| Widowed                                  | 7.7                                   | 14,477        | 6.5                                | 14,477        | 5.0                                   | 14,479        |
| Divorced/Separated/Deserted/Others       | 9.6                                   | 2,240         | 7.2                                | 2,239         | 5.2                                   | 2,238         |
| <b>Living arrangement</b>                |                                       |               |                                    |               |                                       |               |
| Living alone                             | 13.6                                  | 2,295         | 13.7                               | 2,294         | 10.0                                  | 2,294         |
| Living with spouse and/or others         | 7.2                                   | 10,355        | 5.9                                | 10,357        | 4.5                                   | 10,357        |
| Living with spouse and children          | 4.9                                   | 43,639        | 4.6                                | 43,651        | 3.0                                   | 43,649        |
| Living with children and others          | 6.4                                   | 12,488        | 4.9                                | 12,489        | 3.8                                   | 12,490        |
| Living with others only                  | 9.2                                   | 2,818         | 7.4                                | 2,817         | 6.0                                   | 2,817         |
| <b>Religion</b>                          |                                       |               |                                    |               |                                       |               |
| Hindu                                    | 5.7                                   | 52,470        | 5.0                                | 52,476        | 3.7                                   | 52,477        |
| Muslim                                   | 7.3                                   | 8,593         | 7.1                                | 8,594         | 4.6                                   | 8,593         |
| Christian                                | 8.1                                   | 7,173         | 7.8                                | 7,176         | 3.9                                   | 7,176         |
| Others                                   | 5.4                                   | 3,359         | 5.1                                | 3,362         | 3.1                                   | 3,361         |
| <b>Caste/tribe</b>                       |                                       |               |                                    |               |                                       |               |
| Scheduled tribe                          | 7.3                                   | 12,422        | 6.0                                | 12,422        | 4.3                                   | 12,423        |
| Scheduled caste                          | 9.2                                   | 11,952        | 7.9                                | 11,955        | 6.4                                   | 11,953        |
| Other backward class                     | 5.2                                   | 26,933        | 5.0                                | 26,935        | 3.3                                   | 26,935        |
| None of the above                        | 4.5                                   | 20,288        | 3.7                                | 20,296        | 2.5                                   | 20,296        |
| <b>Education</b>                         |                                       |               |                                    |               |                                       |               |
| No schooling                             | 7.8                                   | 32,979        | 6.8                                | 32,980        | 5.1                                   | 32,980        |
| Less than 5 years complete               | 7.2                                   | 7,981         | 5.8                                | 7,983         | 4.0                                   | 7,983         |
| 5-9 years complete                       | 4.6                                   | 16,749        | 4.0                                | 16,750        | 2.9                                   | 16,749        |
| 10 or more years complete                | 1.9                                   | 13,886        | 2.5                                | 13,895        | 1.1                                   | 13,895        |
| <b>Work status</b>                       |                                       |               |                                    |               |                                       |               |
| Currently working                        | 6.3                                   | 32,664        | 5.9                                | 32,672        | 4.2                                   | 32,673        |
| Worked in past but currently not working | 7.2                                   | 17,800        | 6.2                                | 17,800        | 4.4                                   | 17,798        |
| Never worked                             | 4.2                                   | 21,131        | 3.5                                | 21,136        | 2.4                                   | 21,136        |
| <b>MPCE quintile</b>                     |                                       |               |                                    |               |                                       |               |
| Poorest                                  | 7.5                                   | 14,023        | 7.0                                | 14,023        | 5.5                                   | 14,023        |
| Poorer                                   | 6.7                                   | 14,412        | 5.8                                | 14,417        | 3.9                                   | 14,417        |
| Middle                                   | 5.8                                   | 14,411        | 4.9                                | 14,412        | 3.5                                   | 14,413        |
| Richer                                   | 5.3                                   | 14,565        | 4.1                                | 14,567        | 3.2                                   | 14,565        |
| Richest                                  | 4.3                                   | 14,184        | 4.6                                | 14,189        | 2.4                                   | 14,189        |
| <b>Total</b>                             | <b>6.0</b>                            | <b>71,595</b> | <b>5.3</b>                         | <b>71,608</b> | <b>3.8</b>                            | <b>71,607</b> |

Notes

\*Including spouse irrespective of age

<sup>1</sup> Respondents were asked as 'Did you ever reduce the size of your meals or skip meals because there was not enough food at household in past 12 months?'

<sup>2</sup> Respondents were asked as 'Were you hungry but didn't eat because there was not enough food at household in past 12 months?'

<sup>3</sup> Respondents were asked as 'Did you ever not eat for a whole day because there was not enough food at household in past 12 months?'

**Table 12.12 Percentage of older adults who experienced food insufficiency at household, states/UTs, LASI Wave 1, 2017-18**

| State/Union territory     | Reduced the size of meal <sup>1</sup> |        | Hungry but didn't eat <sup>2</sup> |        | Didn't eat for whole day <sup>3</sup> |        |
|---------------------------|---------------------------------------|--------|------------------------------------|--------|---------------------------------------|--------|
|                           | Age ≥ 45*                             | Number | Age ≥ 45*                          | Number | Age ≥ 45*                             | Number |
| <b>India</b>              | 6.0                                   | 71,595 | 5.3                                | 71,608 | 3.8                                   | 71,607 |
| <b>North</b>              |                                       |        |                                    |        |                                       |        |
| Chandigarh                | 1.3                                   | 990    | 0.9                                | 995    | 1.2                                   | 994    |
| Delhi                     | 3.9                                   | 1,313  | 3.5                                | 1,313  | 3.1                                   | 1,313  |
| Haryana                   | 2.8                                   | 1,887  | 2.6                                | 1,888  | 1.3                                   | 1,888  |
| Himachal Pradesh          | 1.3                                   | 1,376  | 2.1                                | 1,376  | 1.3                                   | 1,376  |
| Jammu & Kashmir           | 3.5                                   | 1,608  | 1.5                                | 1,608  | 0.8                                   | 1,608  |
| Punjab                    | 4.0                                   | 2,092  | 3.1                                | 2,096  | 1.7                                   | 2,095  |
| Rajasthan                 | 2.2                                   | 2,232  | 1.7                                | 2,232  | 1.1                                   | 2,232  |
| Uttarakhand               | 3.6                                   | 1,354  | 2.9                                | 1,354  | 2.7                                   | 1,354  |
| <b>Central</b>            |                                       |        |                                    |        |                                       |        |
| Chhattisgarh              | 1.5                                   | 2,050  | 1.8                                | 2,051  | 1.0                                   | 2,051  |
| Madhya Pradesh            | 10.0                                  | 2,889  | 8.2                                | 2,888  | 6.8                                   | 2,888  |
| Uttar Pradesh             | 7.7                                   | 4,544  | 6.2                                | 4,543  | 5.7                                   | 4,544  |
| <b>East</b>               |                                       |        |                                    |        |                                       |        |
| Bihar                     | 8.2                                   | 3,505  | 6.9                                | 3,505  | 6.2                                   | 3,505  |
| Jharkhand                 | 8.4                                   | 2,451  | 7.8                                | 2,451  | 4.7                                   | 2,451  |
| Odisha                    | 5.1                                   | 2,897  | 4.1                                | 2,898  | 2.1                                   | 2,898  |
| West Bengal               | 8.0                                   | 3,909  | 6.4                                | 3,908  | 3.8                                   | 3,907  |
| <b>Northeast</b>          |                                       |        |                                    |        |                                       |        |
| Arunachal Pradesh         | 6.1                                   | 1,210  | 1.9                                | 1,210  | [0.3]                                 | 1,210  |
| Assam                     | 4.4                                   | 2,353  | 2.3                                | 2,353  | 1.5                                   | 2,353  |
| Manipur                   | 1.5                                   | 1,357  | 1.9                                | 1,357  | 1.3                                   | 1,357  |
| Meghalaya                 | 1.6                                   | 965    | 2.3                                | 965    | 0.8                                   | 965    |
| Mizoram                   | 5.1                                   | 1,244  | 4.0                                | 1,244  | 3.7                                   | 1,244  |
| Nagaland                  | 2.1                                   | 1,314  | 0.7                                | 1,314  | [0.4]                                 | 1,314  |
| Tripura                   | 5.4                                   | 1,183  | 4.9                                | 1,183  | 2.9                                   | 1,183  |
| <b>West</b>               |                                       |        |                                    |        |                                       |        |
| Dadra & Nagar Haveli      | 7.3                                   | 1,056  | 3.7                                | 1,057  | 4.0                                   | 1,057  |
| Daman & Diu               | 4.3                                   | 963    | 2.8                                | 963    | 2.7                                   | 964    |
| Goa                       | 0.9                                   | 1,410  | 1.4                                | 1,410  | 0.7                                   | 1,410  |
| Gujarat                   | 5.6                                   | 2,269  | 4.6                                | 2,270  | 4.1                                   | 2,269  |
| Maharashtra               | 4.6                                   | 3,941  | 4.4                                | 3,941  | 3.6                                   | 3,941  |
| <b>South</b>              |                                       |        |                                    |        |                                       |        |
| Andaman & Nicobar Islands | 3.3                                   | 1,237  | 3.3                                | 1,237  | 1.1                                   | 1,237  |
| Andhra Pradesh            | 4.7                                   | 2,654  | 5.3                                | 2,653  | 3.9                                   | 2,653  |
| Karnataka                 | 5.0                                   | 2,388  | 5.6                                | 2,389  | 2.3                                   | 2,389  |
| Kerala                    | 3.6                                   | 2,455  | 2.9                                | 2,457  | 1.7                                   | 2,457  |
| Lakshadweep               | 1.2                                   | 1,133  | 0.7                                | 1,133  | 0.7                                   | 1,133  |
| Puducherry                | 5.1                                   | 1,412  | 5.0                                | 1,414  | 3.2                                   | 1,414  |
| Tamil Nadu                | 5.8                                   | 3,516  | 6.3                                | 3,516  | 4.1                                   | 3,516  |
| Telangana                 | 5.1                                   | 2,438  | 3.5                                | 2,436  | 2.7                                   | 2,437  |

**Notes**

\*Including spouse irrespective of age, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

<sup>1</sup> Respondents were asked as 'Did you ever reduce the size of your meals or skip meals because there was not enough food at household in past 12 months?'

<sup>2</sup> Respondents were asked as 'Were you hungry but didn't eat because there was not enough food at household in past 12 months?'

<sup>3</sup> Respondents were asked as 'Did you ever not eat for a whole day because there was not enough food at household in past 12 months?'



### Key findings: physical activity and food availability

- As per WHO standard recommendations for physical activity in older adults, 35% of Indian older adults age 45 and above are physically inactive; a higher prevalence of physical inactivity is observed among older adult men, those who never worked, and among elderly age 60 and above than their respective counterparts.
- Higher proportions of both older adult men and women age 45 and above are physically inactive in Mizoram (80% and 75%, respectively), Delhi (63% and 55%, respectively), Haryana (60% and 50%, respectively), and Arunachal Pradesh (59% and 56%, respectively).
- In India, 11% of older adults age 45 and above as well as elderly age 60 and above are practicing some form of yoga more than once a week. The elderly age 60 and above with 10 or more years of schooling and those in the richest MPCE quintile are likely to practice yoga, meditation, asana, or pranayama more than once a week.
- Older adults age 45 and above in Madhya Pradesh (14%), Bihar (10%), and Jharkhand (10%) are seen to be more prone to food unavailability.

### 13. HEALTH CARE UTILISATION AND HEALTH FINANCING

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Morbidity, hospitalization, disability, and health spending have a strong age gradient. Evidence suggests that the morbidity rate (number of ailments per 1000 population) among the elderly (60 and above) in rural areas of India was 276, compared to 89 for all age groups (NSS, 2015). Moreover, barring children below five years of age, the inpatient rate in India has an increasing function of age: the inpatient rate in 2014 among elderly age 70-79 years was 13%, compared to four percent for all ages (Kastor and Mohanty, 2018). Furthermore, the prevalence of any disability also increases with age: the elderly age 60 and above account for one-fifth of the disabled population in India (MoSPI, 2016). Higher morbidity, hospitalization, and disability rates are directly associated with higher per capita health spending, out of pocket health spending, and catastrophic health expenditure (CHE).

In India, the public spending on health is low. Although insurance coverage has been increasing over time, insurance reimbursements remain low. Household income therefore the major source of financing for health care in India, accounting for more than two-thirds of health spending nationwide (MoHFW, 2016).

The elderly population is particularly vulnerable to health shocks that come in form of high disease burden, high rates of hospitalization, out of pocket expenditure, and catastrophic health spending (Pandey et al. 2018; Mohanty et al. 2013). The National Health Policy 2017 initiative aims to increase public health spending to 3% by 2025 and reduce CHE by 25% (MoHFW, 2017). Further, the *Ayushman Bharat Yojana*, launched in September 2018, is a laudable effort that aims to provide preventive, curative, and promotive healthcare; it aims to cover 10.74 crore families (about 50 crore population) accounting for the bottom 40% of the country's population, and it has identified the elderly as a vulnerable group ([www.ayushmanbharat.co.in](http://www.ayushmanbharat.co.in)). In this context, evidence suggests the significant association between socio-economic status, inpatient rates, and out of pocket health spending among older adults. This chapter presents the utilisation rate of out-patient and inpatient care, out of pocket expenditure, perceived quality of care and health insurance coverage among older adults and the elderly in Indian states.

**Table 13.1 Percentage of older adults who utilised out-patient care in one month and inpatient care in one year prior to survey by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                   | Out-patient care |             |             |               | Inpatient care |            |            |               | Mean number of days hospitalized** |            |            |
|----------------------------------------------|------------------|-------------|-------------|---------------|----------------|------------|------------|---------------|------------------------------------|------------|------------|
|                                              | Age 45-59*       | Age ≥60     | Total       | Number        | Age 45-59*     | Age ≥60    | Total      | Number        | Age 45-59*                         | Age ≥60    | Total      |
| <b>Place of residence</b>                    |                  |             |             |               |                |            |            |               |                                    |            |            |
| Rural                                        | 25.0             | 29.3        | 27.0        | 46,534        | 6.0            | 7.7        | 6.8        | 46,534        | 5.6                                | 5.8        | 5.7        |
| Urban                                        | 21.8             | 26.8        | 23.9        | 25,716        | 6.9            | 8.6        | 7.6        | 25,716        | 20.1                               | 7.0        | 13.8       |
| <b>Sex</b>                                   |                  |             |             |               |                |            |            |               |                                    |            |            |
| Male                                         | 21.3             | 27.8        | 24.7        | 30,569        | 6.6            | 8.3        | 7.5        | 30,569        | 16.1                               | 6.5        | 10.6       |
| Female                                       | 25.5             | 29.3        | 27.1        | 41,681        | 6.1            | 7.6        | 6.7        | 41,681        | 7.6                                | 5.9        | 6.8        |
| <b>Marital status</b>                        |                  |             |             |               |                |            |            |               |                                    |            |            |
| Currently married                            | 23.9             | 28.3        | 25.5        | 55,396        | 6.3            | 8.3        | 7.0        | 55,396        | 11.5                               | 6.5        | 9.3        |
| Widowed                                      | 26.1             | 29.1        | 28.4        | 14,593        | 6.8            | 7.7        | 7.5        | 14,593        | 6.9                                | 5.6        | 5.9        |
| Divorced/Separated/Deserted/ Others          | 19.3             | 27.3        | 22.2        | 2,261         | 5.4            | 3.2        | 4.6        | 2,261         | 6.9                                | 4.3        | 6.3        |
| <b>Living arrangement</b>                    |                  |             |             |               |                |            |            |               |                                    |            |            |
| Living alone                                 | 33.8             | 30.4        | 31.1        | 2,313         | 6.1            | 8.9        | 8.3        | 2,313         | 6.0                                | 4.8        | 5.0        |
| Living with spouse and/or others             | 23.4             | 28.8        | 26.6        | 10,838        | 5.3            | 8.8        | 7.4        | 10,838        | 6.1                                | 6.8        | 6.6        |
| Living with spouse and children              | 23.9             | 28.1        | 25.2        | 43,663        | 6.5            | 8.1        | 7.0        | 43,663        | 12.3                               | 6.4        | 10.1       |
| Living with children and others              | 25.9             | 29.3        | 28.3        | 12,494        | 6.7            | 7.4        | 7.2        | 12,494        | 7.0                                | 5.8        | 6.1        |
| Living with others only                      | 15.8             | 26.0        | 22.2        | 2,942         | 4.6            | 5.7        | 5.2        | 2,942         | 6.7                                | 5.0        | 5.5        |
| <b>Religion</b>                              |                  |             |             |               |                |            |            |               |                                    |            |            |
| Hindu                                        | 23.1             | 27.7        | 25.2        | 52,973        | 6.1            | 7.6        | 6.8        | 52,973        | 7.6                                | 5.9        | 6.7        |
| Muslim                                       | 28.8             | 32.4        | 30.4        | 8,667         | 7.4            | 10.0       | 8.5        | 8,667         | 24.9                               | 7.2        | 15.8       |
| Christian                                    | 16.4             | 19.0        | 17.6        | 7,215         | 8.2            | 7.8        | 8.0        | 7,215         | 33.1                               | 7.1        | 21.9       |
| Others                                       | 33.6             | 42.8        | 38.1        | 3,395         | 6.4            | 9.3        | 7.8        | 3,395         | 4.4                                | 7.1        | 6.0        |
| <b>Caste/tribe</b>                           |                  |             |             |               |                |            |            |               |                                    |            |            |
| Scheduled tribe                              | 15.9             | 18.4        | 17.0        | 12,509        | 5.1            | 6.5        | 5.7        | 12,509        | 5.8                                | 4.8        | 5.3        |
| Scheduled caste                              | 27.0             | 31.8        | 29.2        | 12,046        | 7.3            | 7.8        | 7.5        | 12,046        | 6.3                                | 5.8        | 6.0        |
| Other backward class                         | 22.8             | 27.8        | 25.1        | 27,184        | 6.4            | 8.1        | 7.2        | 27,184        | 16.8                               | 6.4        | 11.4       |
| None of the above                            | 26.2             | 30.6        | 28.3        | 20,511        | 5.9            | 8.2        | 7.0        | 20,511        | 5.5                                | 6.5        | 6.0        |
| <b>Education</b>                             |                  |             |             |               |                |            |            |               |                                    |            |            |
| No schooling                                 | 24.7             | 28.6        | 26.8        | 33,211        | 6.5            | 7.5        | 7.0        | 33,211        | 14.2                               | 5.7        | 9.5        |
| Less than 5 years complete                   | 26.9             | 32.7        | 29.7        | 8,054         | 7.0            | 9.8        | 8.4        | 8,054         | 5.6                                | 5.6        | 5.6        |
| 5-9 years complete                           | 25.3             | 28.7        | 26.6        | 16,909        | 6.6            | 8.7        | 7.4        | 16,909        | 5.9                                | 7.4        | 6.6        |
| 10 or more years complete                    | 19.5             | 24.9        | 21.4        | 14,076        | 5.4            | 7.4        | 6.1        | 14,076        | 13.1                               | 6.8        | 10.4       |
| <b>Work status</b>                           |                  |             |             |               |                |            |            |               |                                    |            |            |
| Currently working                            | 22.8             | 26.7        | 24.0        | 32,990        | 5.3            | 5.9        | 5.5        | 32,990        | 7.8                                | 5.1        | 6.9        |
| Worked in the past but currently not working | 31.3             | 31.0        | 31.1        | 17,964        | 14.5           | 10.1       | 11.2       | 17,964        | 21.4                               | 6.3        | 11.2       |
| Never worked                                 | 23.1             | 26.8        | 24.7        | 21,296        | 5.0            | 6.9        | 5.8        | 21,296        | 4.9                                | 6.9        | 5.9        |
| <b>MPCE quintile</b>                         |                  |             |             |               |                |            |            |               |                                    |            |            |
| Poorest                                      | 18.9             | 23.2        | 20.9        | 14,158        | 3.4            | 5.4        | 4.4        | 14,158        | 5.8                                | 5.7        | 5.7        |
| Poorer                                       | 23.5             | 29.0        | 26.1        | 14,530        | 4.3            | 6.8        | 5.5        | 14,530        | 11.9                               | 5.3        | 8.0        |
| Middle                                       | 24.8             | 28.2        | 26.4        | 14,537        | 5.8            | 7.1        | 6.4        | 14,537        | 5.3                                | 6.3        | 5.8        |
| Richer                                       | 25.6             | 31.2        | 28.1        | 14,686        | 6.7            | 8.4        | 7.5        | 14,686        | 6.2                                | 5.9        | 6.1        |
| Richest                                      | 27.0             | 32.5        | 29.3        | 14,339        | 11.6           | 13.4       | 12.4       | 14,339        | 17.8                               | 7.2        | 13.0       |
| <b>Total</b>                                 | <b>23.9</b>      | <b>28.6</b> | <b>26.0</b> | <b>72,250</b> | <b>6.3</b>     | <b>8.0</b> | <b>7.1</b> | <b>72,250</b> | <b>10.9</b>                        | <b>6.2</b> | <b>8.5</b> |

\* Including spouse irrespective of age

\*\* Mean number of days hospitalised is computed among those received inpatient care.

### 13.1 INPATIENT AND OUT-PATIENT CARE AMONG OLDER ADULTS

In LASI, information was collected on both out-patient care and inpatient care (hospitalisation) utilisation from age-eligible respondents. Table 13.1 presents the percentages of older adults age 45 and above who received out-patient care during one month prior to the survey, those who were hospitalized during the year prior to the survey, and the mean number of days spent in their most recent hospitalisation.

Utilisation of health care services (i.e. out-patient care and hospitalisation) depends on the morbidity condition, health seeking behaviour, accessibility to health services, and the ability of either the individual or their household to pay for services and quality of the care. The overall hospitalization (or inpatients) rate (one year prior to the survey) is 7% in India, while it is 6% for older adults age 45-59 years and 8% for the elderly age 60 and above. On an average, a hospitalized older adult spent 8.5 days in the hospital. The inpatient rate is higher both in urban areas and among men, including older adults age 45-59 and the elderly age 60 and above. Further, the inpatient rate increases with MPCE quintile, suggesting a higher utilization by richer older adults owing to higher ability to pay. The inpatient rate among those in the richest MPCE quintile is almost three times that of those in the poorest MPCE quintile. Among older adults age 45 and above, the inpatient rate is higher among widowed compared to currently married and divorced/separated/deserted. The inpatient rate is 8% among those living alone and five percent among those who live with others. The inpatient rate did not show any consistent pattern with education level. Among the elderly age 60 and above in India, the mean number of days hospitalized is higher among male, urban residents, those who are currently married, and those in the richest MPCE quintile.

The overall out-patient rate in the country is 26%; 29% for the elderly age 60 and above and 24% for older adults age 45-59. The out-patient rate is higher in rural areas, among women, among the widowed, and those living alone. Further, it is much lower among Scheduled tribes than other caste categories. Like the inpatient rate, education level did not show any consistent pattern with out-patient care. The out-patient rate increases steadily with the increase in the MPCE quintile, especially among the elderly age 60 and above. Similarly, the out-patient rate increases with the increase in the duration of the reference period. The out-patient rate increases from 26% in the month prior to the survey to 55% during the year prior to the survey (Figure 13.1).

**Figure 13.1 Percentage of older adults age 45 and above who had out-patient visits by duration of reference period, India, LASI Wave 1, 2017-18**

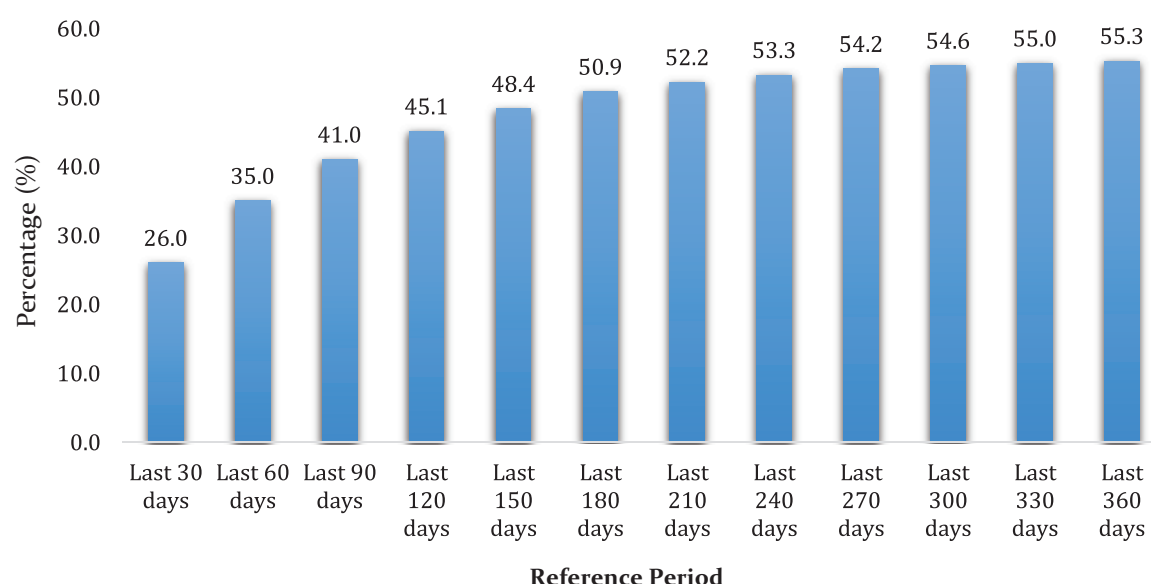


**Table 13.2 Percentage of older adults who utilised out-patient care in one month and inpatient care in one year prior to survey, states/ UTs, LASI Wave 1, 2017-18**

| States/ Union Territory   | Out-patient care |             |             |               | Inpatient care |            |            |               | Mean number of days hospitalized** |            |            |
|---------------------------|------------------|-------------|-------------|---------------|----------------|------------|------------|---------------|------------------------------------|------------|------------|
|                           | Age 45-59*       | Age ≥ 60    | Total       | Number        | Age 45-59*     | Age ≥ 60   | Total      | Number        | Age 45-59*                         | Age ≥ 60   | Total      |
| <b>India</b>              | <b>23.9</b>      | <b>28.6</b> | <b>26.0</b> | <b>72,250</b> | <b>6.3</b>     | <b>8.0</b> | <b>7.1</b> | <b>72,250</b> | <b>10.9</b>                        | <b>6.2</b> | <b>8.5</b> |
| <b>North</b>              |                  |             |             |               |                |            |            |               |                                    |            |            |
| Chandigarh                | 33.1             | 32.6        | 32.9        | 1,026         | 5.9            | 7.7        | 6.6        | 1,026         | 4.0                                | 8.6        | 6.1        |
| Delhi                     | 12.3             | 19.2        | 14.9        | 1,319         | 4.6            | 6.2        | 5.2        | 1,319         | 8.6                                | 5.5        | 7.2        |
| Haryana                   | 22.9             | 24.3        | 23.5        | 1,898         | 6.9            | 10.1       | 8.4        | 1,898         | 4.2                                | 5.2        | 4.8        |
| Himachal Pradesh          | 31.4             | 33.5        | 32.4        | 1,388         | 8.5            | 14.1       | 11.1       | 1,388         | 6.8                                | 8.7        | 8.0        |
| Jammu & Kashmir           | 28.5             | 29.3        | 28.9        | 1,613         | 4.8            | 5.2        | 5.0        | 1,613         | 4.8                                | 8.0        | 6.4        |
| Punjab                    | 50.6             | 56.9        | 53.6        | 2,124         | 7.0            | 10.4       | 8.6        | 2,124         | 4.7                                | 8.3        | 6.8        |
| Rajasthan                 | 24.2             | 28.9        | 26.5        | 2,244         | 7.2            | 9.7        | 8.4        | 2,244         | 5.2                                | 5.9        | 5.6        |
| Uttarakhand               | 19.7             | 22.3        | 21.0        | 1,358         | 5.6            | 5.8        | 5.7        | 1,358         | 6.2                                | 5.6        | 5.9        |
| <b>Central</b>            |                  |             |             |               |                |            |            |               |                                    |            |            |
| Chhattisgarh              | 13.1             | 14.6        | 13.7        | 2,055         | 2.3            | 4.2        | 3.0        | 2,055         | 5.1                                | 3.7        | 4.4        |
| Madhya Pradesh            | 16.1             | 17.4        | 16.7        | 2,914         | 6.3            | 9.0        | 7.6        | 2,914         | 5.5                                | 5.6        | 5.5        |
| Uttar Pradesh             | 32.2             | 37.0        | 34.6        | 4,567         | 4.5            | 5.6        | 5.0        | 4,567         | 6.0                                | 5.8        | 5.9        |
| <b>East</b>               |                  |             |             |               |                |            |            |               |                                    |            |            |
| Bihar                     | 27.3             | 33.9        | 30.9        | 3,520         | 3.8            | 4.4        | 4.1        | 3,520         | 6.0                                | 4.5        | 5.1        |
| Jharkhand                 | 15.7             | 20.6        | 18.1        | 2,464         | 5.0            | 5.3        | 5.1        | 2,464         | 4.6                                | 7.8        | 6.2        |
| Odisha                    | 19.2             | 24.5        | 21.5        | 2,917         | 4.3            | 5.5        | 4.8        | 2,917         | 4.7                                | 5.8        | 5.3        |
| West Bengal               | 29.3             | 33.0        | 30.8        | 3,933         | 6.5            | 9.8        | 7.9        | 3,933         | 4.9                                | 6.3        | 5.6        |
| <b>Northeast</b>          |                  |             |             |               |                |            |            |               |                                    |            |            |
| Arunachal Pradesh         | 4.1              | 7.1         | 4.8         | 1,215         | 8.2            | 7.5        | 8.1        | 1,215         | 4.6                                | 4.3        | 4.6        |
| Assam                     | 14.2             | 17.1        | 15.3        | 2,366         | 4.1            | 5.1        | 4.5        | 2,366         | 3.9                                | 5.1        | 4.4        |
| Manipur                   | 14.6             | 14.6        | 14.6        | 1,369         | 6.4            | 9.0        | 7.6        | 1,369         | 8.1                                | 7.0        | 7.5        |
| Meghalaya                 | 7.0              | 10.8        | 8.6         | 969           | 3.9            | 6.7        | 5.1        | 969           | 21.3                               | 9.1        | 14.5       |
| Mizoram                   | 2.7              | 4.2         | 3.4         | 1,246         | 6.4            | 5.5        | 6.0        | 1,246         | 10.6                               | 6.0        | 8.7        |
| Nagaland                  | 3.1              | 6.1         | 4.6         | 1,316         | 6.3            | 7.5        | 6.9        | 1,316         | 4.1                                | 8.6        | 6.5        |
| Tripura                   | 11.6             | 14.5        | 12.7        | 1,195         | 10.2           | 10.9       | 10.5       | 1,195         | 5.7                                | 5.3        | 5.6        |
| <b>West</b>               |                  |             |             |               |                |            |            |               |                                    |            |            |
| Dadra & Nagar Haveli      | 13.4             | 17.3        | 14.9        | 1,090         | 7.8            | 9.6        | 8.5        | 1,090         | 4.9                                | 4.3        | 4.6        |
| Daman & Diu               | 29.3             | 32.9        | 31.0        | 991           | 6.4            | 13.6       | 9.8        | 991           | 3.2                                | 13.6       | 10.0       |
| Goa                       | 23.3             | 28.9        | 25.9        | 1,427         | 7.1            | 11.2       | 9.0        | 1,427         | 7.7                                | 7.5        | 7.6        |
| Gujarat                   | 20.7             | 25.5        | 22.9        | 2,341         | 5.6            | 9.6        | 7.4        | 2,341         | 3.6                                | 5.8        | 4.9        |
| Maharashtra               | 26.2             | 33.0        | 29.5        | 3,973         | 6.7            | 10.9       | 8.8        | 3,973         | 5.0                                | 6.0        | 5.6        |
| <b>South</b>              |                  |             |             |               |                |            |            |               |                                    |            |            |
| Andaman & Nicobar Islands | 8.5              | 12.8        | 10.3        | 1,244         | 5.6            | 9.0        | 7.0        | 1,244         | 11.0                               | 7.6        | 9.2        |
| Andhra Pradesh            | 23.1             | 26.5        | 24.5        | 2,679         | 7.3            | 8.4        | 7.8        | 2,679         | 6.6                                | 5.7        | 6.2        |
| Karnataka                 | 23.9             | 28.2        | 25.6        | 2,420         | 9.3            | 7.4        | 8.6        | 2,420         | 29.0                               | 5.7        | 20.9       |
| Kerala                    | 34.6             | 40.3        | 37.6        | 2,497         | 6.2            | 11.8       | 9.1        | 2,497         | 8.6                                | 8.5        | 8.5        |
| Lakshadweep               | 18.2             | 25.3        | 21.6        | 1,139         | 4.7            | 10.9       | 7.7        | 1,139         | 5.8                                | 6.9        | 6.6        |
| Puducherry                | 22.4             | 31.0        | 26.5        | 1,428         | 3.2            | 5.5        | 4.3        | 1,428         | 12.1                               | 9.2        | 10.4       |
| Tamil Nadu                | 19.4             | 22.2        | 20.7        | 3,530         | 5.5            | 8.8        | 7.0        | 3,530         | 6.8                                | 6.5        | 6.6        |
| Telangana                 | 22.3             | 24.6        | 23.3        | 2,475         | 7.5            | 8.9        | 8.1        | 2,475         | 7.0                                | 7.3        | 7.2        |

\*\* Mean number of days hospitalised is computed among those received inpatient care.

\*Including spouse irrespective of age

Table 13.2 presents the pattern of out-patient and inpatient care utilization among the elderly age 60 and above and older adults age 45-59 across states of India. The inpatient rate is the highest in Himachal Pradesh (11%), followed by Tripura (11%), and is the lowest in Chhattisgarh (3%). Similarly, many poorer states have lower inpatient rates compared to the national average. The inpatient rate is higher among the elderly age 60 and above compared to older adults in many states of India. Among those hospitalized, the mean number of days hospitalized is higher among older adults age 45-59 compared to the elderly age 60 and above. Similarly, the inter-state variation in out-patient rate is higher: many of the north-eastern states of India have lower rates, with the lowest in Mizoram (3%). The out-patient rate is the highest in Punjab (54%), followed by Kerala (38%), and Uttar Pradesh (35%).

**Table 13.3 Percent distribution of older adults who received inpatient care in one year prior to survey by type of health facilities according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                   | Age 45-59*      |                  |            |             | Age ≥60         |                  |            |             | Total           |                  |            |              |
|----------------------------------------------|-----------------|------------------|------------|-------------|-----------------|------------------|------------|-------------|-----------------|------------------|------------|--------------|
|                                              | Public facility | Private facility | Others     | Number      | Public facility | Private facility | Others     | Number      | Public facility | Private facility | Others     | Number       |
| <b>Place of residence</b>                    |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Rural                                        | 35.8            | 61.9             | 2.3        | 1463        | 39.4            | 58.1             | 2.4        | 1603        | 37.7            | 59.9             | 2.4        | 3,066        |
| Urban                                        | 26.4            | 72.3             | 1.3        | 803         | 33.8            | 61.3             | 4.9        | 914         | 29.9            | 67.1             | 3.0        | 1,717        |
| <b>Sex</b>                                   |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Male                                         | 28.5            | 69.5             | 2.0        | 882         | 38.1            | 58.8             | 3.1        | 1296        | 34.0            | 63.4             | 2.6        | 2,178        |
| Female                                       | 34.8            | 63.4             | 1.9        | 1384        | 37.2            | 59.5             | 3.3        | 1221        | 35.9            | 61.6             | 2.6        | 2,605        |
| <b>Marital status</b>                        |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Currently married                            | 30.2            | 67.8             | 2.0        | 1953        | 37.0            | 60.2             | 2.8        | 1652        | 33.2            | 64.5             | 2.3        | 3,605        |
| Widowed                                      | 47.5            | 50.5             | 2.0        | 247         | 39.3            | 56.9             | 3.9        | 829         | 41.0            | 55.5             | 3.5        | 1,076        |
| Divorced/Separated/Deserted/ Others          | 42.5            | 56.7             | 0.7        | 66          | 22.0            | 72.2             | 5.8        | 36          | 37.3            | 60.7             | 2.0        | 102          |
| <b>Living arrangement</b>                    |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Living alone                                 | 55.0            | 43.5             | 1.5        | 41          | 28.9            | 69.6             | 1.5        | 134         | 33.2            | 65.3             | 1.5        | 175          |
| Living with spouse and / or others           | 43.0            | 54.8             | 2.3        | 250         | 34.3            | 63.3             | 2.4        | 535         | 36.9            | 60.8             | 2.4        | 785          |
| Living with spouse and children              | 28.7            | 69.4             | 1.9        | 1669        | 38.4            | 58.5             | 3.1        | 1104        | 32.3            | 65.4             | 2.4        | 2773         |
| Living with children and others              | 43.5            | 54.5             | 2.0        | 257         | 40.6            | 54.8             | 4.6        | 631         | 41.4            | 54.7             | 3.9        | 888          |
| Living with others only                      | 44.3            | 55.8             | 0.0        | 49          | 43.3            | 54.1             | 2.6        | 113         | 43.6            | 54.7             | 1.8        | 162          |
| <b>Religion</b>                              |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Hindu                                        | 33.6            | 64.4             | 2.0        | 1701        | 36.8            | 59.9             | 3.3        | 1851        | 35.2            | 62.1             | 2.7        | 3,552        |
| Muslim                                       | 29.1            | 70.7             | 0.1        | 260         | 43.0            | 54.2             | 2.8        | 332         | 36.3            | 62.1             | 1.5        | 592          |
| Christian                                    | 26.1            | 73.3             | 0.6        | 204         | 43.1            | 56.7             | 0.2        | 219         | 33.4            | 66.2             | 0.4        | 423          |
| Others                                       | 23.6            | 67.7             | 8.7        | 101         | 32.8            | 62.6             | 4.6        | 115         | 28.9            | 64.7             | 6.4        | 216          |
| <b>Caste/tribe</b>                           |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Scheduled tribe                              | 43.6            | 55.2             | 1.3        | 358         | 65.6            | 33.1             | 1.4        | 334         | 54.5            | 44.2             | 1.3        | 692          |
| Scheduled caste                              | 44.4            | 53.9             | 1.8        | 455         | 51.8            | 45.1             | 3.1        | 383         | 47.9            | 49.7             | 2.4        | 838          |
| Other backward class                         | 22.5            | 76.0             | 1.5        | 820         | 30.3            | 66.5             | 3.2        | 1003        | 26.5            | 71.1             | 2.4        | 1,823        |
| None of the above                            | 36.6            | 60.3             | 3.1        | 633         | 34.0            | 62.3             | 3.7        | 797         | 35.1            | 61.4             | 3.5        | 1,430        |
| <b>Education</b>                             |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| No schooling                                 | 33.0            | 64.2             | 2.8        | 887         | 42.4            | 55.7             | 1.9        | 1245        | 38.2            | 59.5             | 2.3        | 2,132        |
| Less than 5 years complete                   | 43.2            | 56.1             | 0.7        | 284         | 39.1            | 57.3             | 3.6        | 345         | 40.9            | 56.8             | 2.3        | 629          |
| 5-9 years complete                           | 37.3            | 61.3             | 1.4        | 651         | 36.7            | 57.7             | 5.6        | 522         | 37.0            | 59.7             | 3.3        | 1,173        |
| 10 or more years complete                    | 17.7            | 81.1             | 1.2        | 444         | 18.3            | 77.0             | 4.7        | 405         | 18.0            | 79.4             | 2.7        | 849          |
| <b>Work status</b>                           |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Currently working                            | 31.2            | 66.8             | 2.0        | 1147        | 39.9            | 56.7             | 3.4        | 556         | 34.1            | 63.5             | 2.5        | 1,703        |
| Worked in the past but currently not working | 30.8            | 67.5             | 1.6        | 500         | 37.7            | 59.8             | 2.5        | 1349        | 35.5            | 62.3             | 2.2        | 1,849        |
| Never worked                                 | 36.5            | 61.3             | 2.1        | 619         | 35.2            | 60.1             | 4.7        | 612         | 35.8            | 60.7             | 3.5        | 1,231        |
| <b>MPCE quintile</b>                         |                 |                  |            |             |                 |                  |            |             |                 |                  |            |              |
| Poorest                                      | 48.7            | 49.8             | 1.5        | 266         | 52.4            | 43.7             | 3.9        | 330         | 50.9            | 46.2             | 2.9        | 596          |
| Poorer                                       | 41.0            | 56.6             | 2.5        | 320         | 48.6            | 50.0             | 1.5        | 435         | 45.4            | 52.7             | 1.9        | 755          |
| Middle                                       | 33.8            | 62.3             | 3.9        | 427         | 42.0            | 54.7             | 3.4        | 453         | 38.1            | 58.3             | 3.6        | 880          |
| Richer                                       | 37.8            | 60.7             | 1.5        | 538         | 31.2            | 66.7             | 2.2        | 520         | 34.4            | 63.7             | 1.9        | 1,058        |
| Richest                                      | 19.9            | 79.1             | 1.0        | 715         | 24.2            | 71.1             | 4.7        | 779         | 21.9            | 75.4             | 2.7        | 1,494        |
| <b>Total</b>                                 | <b>32.3</b>     | <b>65.8</b>      | <b>1.9</b> | <b>2266</b> | <b>37.6</b>     | <b>59.1</b>      | <b>3.2</b> | <b>2517</b> | <b>35.1</b>     | <b>62.4</b>      | <b>2.6</b> | <b>4,783</b> |

\* Including spouse irrespective of age.

**Figure 13.2 Percent distribution of elderly age 60 and above who received inpatient care in one year prior to survey by type of health facilities and MPCE quintile, India, LASI Wave 1, 2017-18**

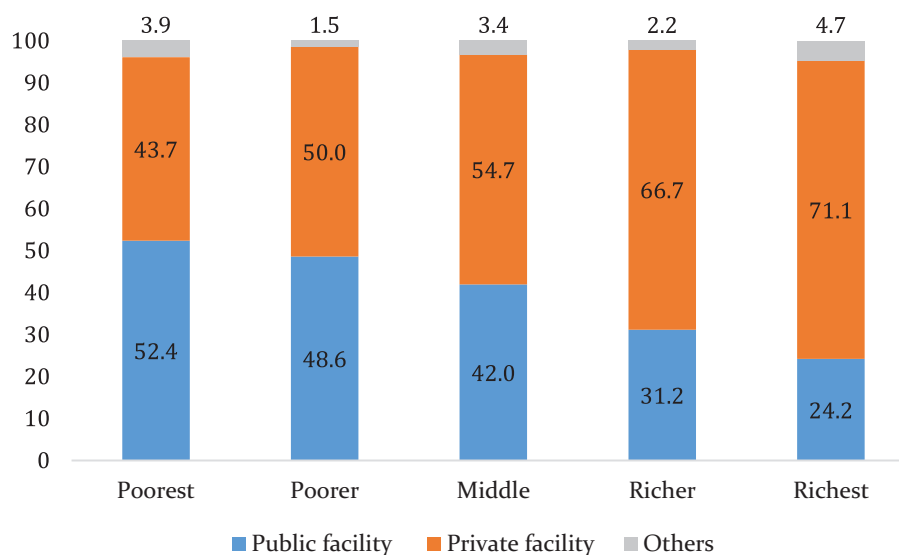


Table 13.3 presents the percent distribution of older adults who received inpatient care by type of health facilities. In India, the utilization of inpatient care from public and private health facilities varies by place of residence, religion, caste, and MPCE quintile. About two-fifths (35%) of the older adults received inpatient care from public health facility compared to about three-fifths (62%) from private health facility. The use of health services from other sources is low among both the elderly age 60 and above and older adults age 45-59. About 38% of the elderly age 60 and above sought inpatient care from a public health facility, compared to 32% among older adults age 45-59. Use of public health services for inpatient care is higher in rural than urban areas. In both rural and urban areas of India, most older adults age 45-59 use health services from private health facility; the pattern is similar among the elderly age 60 and above. A higher proportion of Muslims used public health facility compared to other religion groups. Similarly, the proportions of older adults using public health services is the highest among the Scheduled tribes followed by the Scheduled castes. The use of inpatient care at public health facility vary inversely with the MPCE quintile: a majority of older adults in the poorest MPCE quintile utilise inpatient care from public health facility. The use of inpatient care from private health services increases by MPCE quintile, suggesting that richer people prefer to use private health services. This pattern is true for both the elderly age 60 and above and older adults age 45-59.

Table 13.4 presents the pattern of inpatient care by type of health facility among older adults in the Indian states. The proportion using a public health facility for inpatient care is the highest in Tripura (86%), followed by Andaman & Nicobar Islands (83%), and Jammu & Kashmir (83%). It is the lowest in Jharkhand (16%), followed by Maharashtra (18%), and Karnataka (18%). Further, in 16 states and union territories in India, more than half of the older adults use inpatient care from public health facility and in three states (Punjab, Jharkhand and Maharashtra) less than 20% of the older adults used a public health facility. The use of inpatient care from private health facility is high in Karnataka and Jharkhand (80%), and low in Tripura (13%), Arunachal Pradesh (14%), and Andaman & Nicobar Islands (17%).

**Table 13.4 Percent distribution of older adults who received inpatient care in one year prior to survey by type of health facilities, states/UTs, LASI Wave 1, 2017-18**

| States/ Union Territory   | Age 45-59*      |                  |            |             | Age≥60          |                  |            |             | Total           |                  |            |             |
|---------------------------|-----------------|------------------|------------|-------------|-----------------|------------------|------------|-------------|-----------------|------------------|------------|-------------|
|                           | Public facility | Private facility | Others     | Number      | Public facility | Private facility | Others     | Number      | Public facility | Private facility | Others     | Number      |
| <b>India</b>              | <b>32.3</b>     | <b>65.8</b>      | <b>1.9</b> | <b>2266</b> | <b>37.6</b>     | <b>59.1</b>      | <b>3.2</b> | <b>2517</b> | <b>35.1</b>     | <b>62.4</b>      | <b>2.6</b> | <b>4783</b> |
| <b>North</b>              |                 |                  |            |             |                 |                  |            |             |                 |                  |            |             |
| Chandigarh                | 86.3            | 10.5             | 3.2        | 42          | 44.2            | 46.1             | 9.7        | 26          | 66.9            | 27.0             | 6.2        | 68          |
| Delhi                     | 72.0            | 28.0             | 0.0        | 39          | 46.4            | 44.3             | 9.4        | 34          | 60.4            | 35.4             | 4.2        | 73          |
| Haryana                   | 22.2            | 72.4             | 5.4        | 77          | 20.5            | 77.1             | 2.4        | 87          | 21.2            | 75.1             | 3.7        | 164         |
| Himachal Pradesh          | 61.9            | 36.9             | 1.2        | 59          | 69.3            | 28.4             | 2.3        | 86          | 66.4            | 31.8             | 1.9        | 145         |
| Jammu & Kashmir           | 79.4            | 20.6             | 0.0        | 42          | 86.3            | 13.7             | 0.0        | 42          | 82.9            | 17.1             | 0.0        | 84          |
| Punjab                    | 16.9            | 64.6             | 18.5       | 68          | 22.9            | 60.9             | 16.2       | 83          | 20.3            | 62.5             | 17.2       | 151         |
| Rajasthan                 | 41.9            | 57.0             | 1.0        | 76          | 48.9            | 51.1             | 0.0        | 104         | 45.9            | 53.6             | 0.4        | 180         |
| Uttarakhand               | 26.1            | 72.8             | 1.1        | 39          | 32.1            | 67.9             | 0.0        | 38          | 29.1            | 70.3             | 0.6        | 77          |
| <b>Central</b>            |                 |                  |            |             |                 |                  |            |             |                 |                  |            |             |
| Chhattisgarh              | 63.7            | 33.3             | 3.0        | 28          | 42.7            | 53.7             | 3.6        | 32          | 52.5            | 44.2             | 3.3        | 60          |
| Madhya Pradesh            | 37.8            | 59.2             | 3.0        | 101         | 39.9            | 57.0             | 3.1        | 104         | 39.0            | 58.0             | 3.1        | 205         |
| Uttar Pradesh             | 30.9            | 66.4             | 2.8        | 104         | 35.1            | 60.5             | 4.4        | 126         | 33.2            | 63.1             | 3.7        | 230         |
| <b>East</b>               |                 |                  |            |             |                 |                  |            |             |                 |                  |            |             |
| Bihar                     | 25.9            | 72.2             | 1.9        | 68          | 30.0            | 68.2             | 1.9        | 88          | 28.2            | 69.9             | 1.9        | 156         |
| Jharkhand                 | 8.7             | 87.6             | 3.8        | 61          | 24.0            | 72.6             | 3.4        | 62          | 16.3            | 80.1             | 3.6        | 123         |
| Odisha                    | 58.5            | 41.5             | 0.0        | 73          | 79.2            | 20.8             | 0.0        | 78          | 68.9            | 31.1             | 0.0        | 151         |
| West Bengal               | 64.6            | 35.4             | 0.0        | 132         | 74.5            | 25.5             | 0.0        | 138         | 69.6            | 30.4             | 0.0        | 270         |
| <b>Northeast</b>          |                 |                  |            |             |                 |                  |            |             |                 |                  |            |             |
| Arunachal Pradesh         | 81.6            | 14.8             | 3.6        | 49          | 83.9            | 11.4             | 4.7        | 19          | 82.1            | 14.0             | 3.9        | 68          |
| Assam                     | 56.3            | 43.7             | 0.0        | 58          | 41.4            | 51.1             | 7.4        | 38          | 50.2            | 46.7             | 3.0        | 96          |
| Manipur                   | 68.2            | 31.8             | 0.0        | 49          | 70.3            | 29.7             | 0.0        | 50          | 69.4            | 30.6             | 0.0        | 99          |
| Meghalaya                 | 61.6            | 34.6             | 3.9        | 20          | 59.5            | 40.5             | 0.0        | 30          | 60.4            | 37.8             | 1.7        | 50          |
| Mizoram                   | 43.8            | 54.5             | 1.6        | 39          | 61.9            | 38.1             | 0.0        | 34          | 51.3            | 47.8             | 1.0        | 73          |
| Nagaland                  | 16.7            | 81.2             | 2.1        | 20          | 72.5            | 26.3             | 1.2        | 23          | 46.5            | 51.9             | 1.6        | 43          |
| Tripura                   | 87.7            | 10.8             | 1.5        | 72          | 82.9            | 17.1             | 0.0        | 50          | 85.7            | 13.4             | 0.9        | 122         |
| <b>West</b>               |                 |                  |            |             |                 |                  |            |             |                 |                  |            |             |
| Dadra & Nagar Haveli      | 52.6            | 46.2             | 1.3        | 49          | 56.8            | 40.0             | 3.2        | 45          | 54.4            | 43.5             | 2.1        | 94          |
| Daman & Diu               | 32.8            | 67.2             | 0.0        | 39          | 36.6            | 62.0             | 1.4        | 57          | 35.3            | 63.8             | 0.9        | 96          |
| Goa                       | 69.8            | 30.2             | 0.0        | 60          | 52.9            | 44.1             | 3.1        | 68          | 60.2            | 38.1             | 1.8        | 128         |
| Gujarat                   | 23.4            | 73.6             | 3.0        | 74          | 30.3            | 66.6             | 3.0        | 91          | 27.4            | 69.6             | 3.0        | 165         |
| Maharashtra               | 14.8            | 84.0             | 1.2        | 150         | 19.9            | 74.0             | 6.1        | 194         | 17.9            | 77.9             | 4.2        | 344         |
| <b>South</b>              |                 |                  |            |             |                 |                  |            |             |                 |                  |            |             |
| Andaman & Nicobar Islands | 67.7            | 32.3             | 0.0        | 39          | 97.3            | 2.7              | 0.0        | 45          | 83.2            | 16.8             | 0.0        | 84          |
| Andhra Pradesh            | 20.9            | 79.1             | 0.0        | 115         | 29.3            | 69.7             | 1.0        | 92          | 24.7            | 74.8             | 0.4        | 207         |
| Karnataka                 | 20.8            | 78.3             | 1.0        | 89          | 13.1            | 83.5             | 3.4        | 97          | 18.1            | 80.1             | 1.8        | 186         |
| Kerala                    | 36.6            | 63.4             | 0.0        | 81          | 42.7            | 52.1             | 5.2        | 152         | 40.7            | 55.8             | 3.5        | 233         |
| Lakshadweep               | 42.9            | 57.1             | 0.0        | 32          | 59.4            | 40.6             | 0.0        | 54          | 54.1            | 45.9             | 0.0        | 86          |
| Puducherry                | 59.6            | 34.5             | 5.9        | 31          | 43.0            | 49.5             | 7.5        | 44          | 49.6            | 43.5             | 6.9        | 75          |
| Tamil Nadu                | 29.9            | 64.8             | 5.3        | 91          | 32.4            | 67.6             | 0.0        | 114         | 31.3            | 66.5             | 2.2        | 205         |
| Telangana                 | 23.1            | 75.0             | 2.0        | 100         | 26.6            | 72.2             | 1.2        | 92          | 24.8            | 73.6             | 1.6        | 192         |

\*Including spouse irrespective of age.



**Figure 13.3 Percent distribution of elderly age 60 and above who received inpatient care in one year prior to survey by type of health facilities, states/UTs, LASI Wave 1, 2017-18**

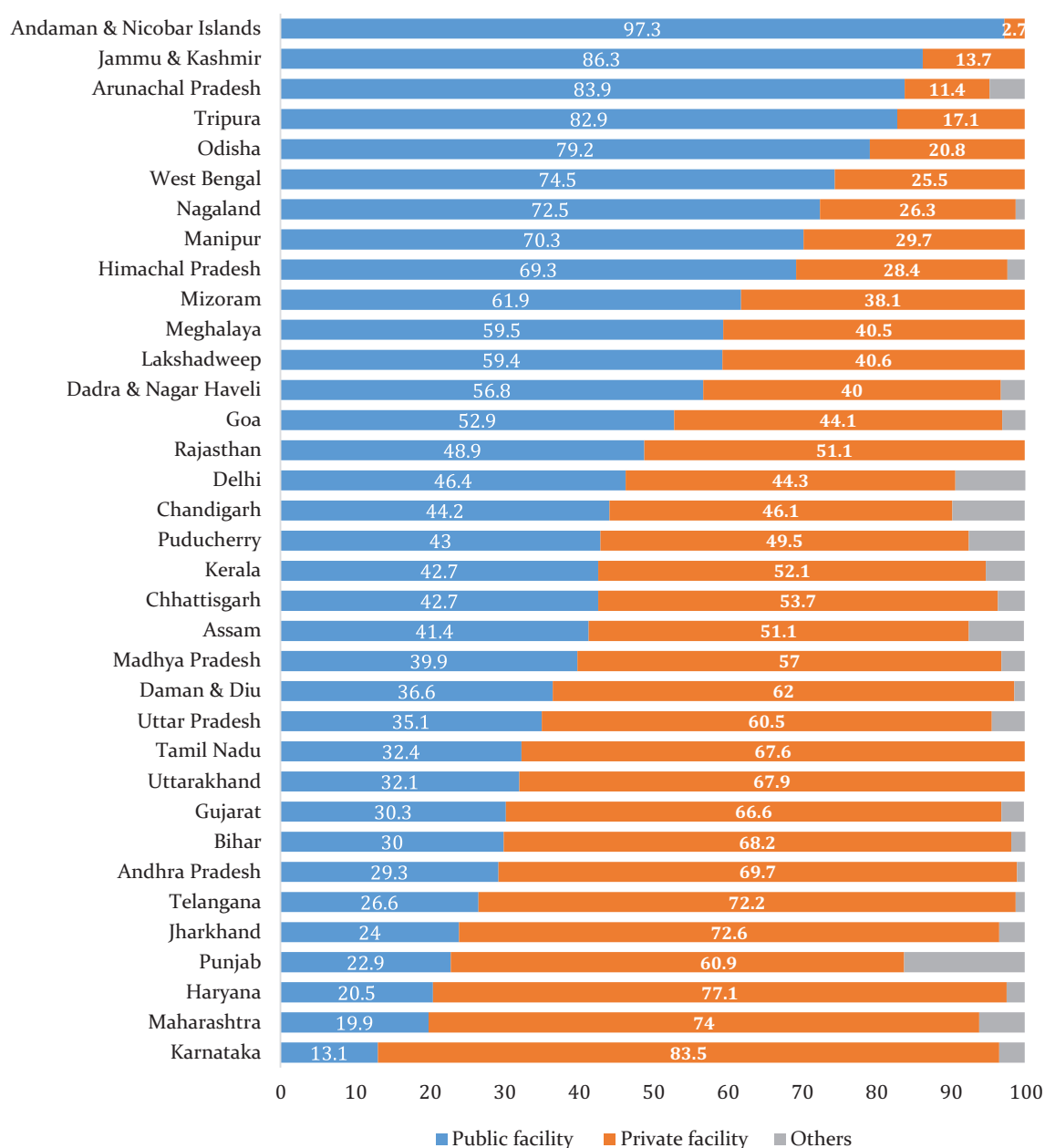


Table 13.5 presents percent distribution of older adults who received out-patient care by type of health facilities. In India, little more than one-fifth (23%) of older adults receive out-patient care from public health facility; about three-fifths (64%) receive it from private health facility; and about 13% use other sources such as mobile health vans, health camps, etc. The pattern of out-patient care by type of health facility is similar between the elderly age 60 and above and older adults age 45-59. The proportion of older adults who utilise public health facilities for out-patient care varies substantially by place of residence, marital status, living arrangement, religion, caste, education level, and MPCE quintile. The utilisation of public health services for out-patient care is relatively higher in rural areas (24%) than in urban (20%) areas. The majority of older adults seek out-patient care from private health facility in both rural and urban areas. The pattern is similar for both the elderly age 60 and above and older adults age 45-59. By caste/tribe, the proportion of those who use public health facility is the highest among older adults from Scheduled tribes, followed by those from the Scheduled caste and those from the Other backward class.

The utilization of out-patient care from public health facilities is higher among those who have less than 10 years of education than those who have more than 10 years of education. More than one fourth (28%) of the older adults in the poorest MPCE quintile utilise out-patient care from public health facility, whereas 18% do the same in the richest MPCE quintile.

**Table 13.5 Percent distribution of older adults who received out-patient care in one year prior to survey by type of health facilities according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                      | Age 45-59*      |                  |             |              | Age ≥60         |                  |             |              | Total           |                  |             |              |
|-------------------------------------------------|-----------------|------------------|-------------|--------------|-----------------|------------------|-------------|--------------|-----------------|------------------|-------------|--------------|
|                                                 | Public facility | Private facility | Others      | Number       | Public facility | Private facility | Others      | Number       | Public facility | Private facility | Others      | Number       |
| <b>Place of residence</b>                       |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Rural                                           | 24.2            | 60.2             | 15.6        | 12,891       | 24.0            | 59.7             | 16.3        | 11,375       | 24.1            | 60.0             | 16.0        | 24,266       |
| Urban                                           | 19.1            | 73.8             | 7.1         | 7,502        | 20.2            | 72.0             | 7.8         | 6,141        | 19.6            | 73.0             | 7.4         | 13,643       |
| <b>Sex</b>                                      |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Male                                            | 23.0            | 63.5             | 13.5        | 7,062        | 24              | 62.0             | 14.1        | 8,109        | 23.5            | 62.7             | 13.8        | 15,171       |
| Female                                          | 22.3            | 65.1             | 12.6        | 13,331       | 21.9            | 64.5             | 13.6        | 9,407        | 22.2            | 64.8             | 13.0        | 22,738       |
| <b>Marital status</b>                           |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Currently married                               | 22.0            | 65.4             | 12.6        | 17,646       | 21.7            | 64.8             | 13.5        | 11,000       | 21.8            | 65.2             | 13.0        | 28,646       |
| Widowed                                         | 27.1            | 57.9             | 15.0        | 2,080        | 24.4            | 61.1             | 14.5        | 6,091        | 25.0            | 60.4             | 14.6        | 8,171        |
| Divorced/Separated/<br>Deserted/ Others         | 26.2            | 60.2             | 13.6        | 667          | 31.3            | 58.5             | 10.2        | 425          | 28.3            | 59.5             | 12.2        | 1,092        |
| <b>Living arrangement</b>                       |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Living alone                                    | 32.1            | 54.3             | 13.6        | 342          | 33.3            | 56.3             | 10.3        | 928          | 33.1            | 55.9             | 11.0        | 1,270        |
| Living with spouse and /<br>or others           | 25.2            | 61.6             | 13.3        | 2,219        | 23.2            | 63.5             | 13.2        | 3,362        | 24.0            | 62.8             | 13.2        | 5,581        |
| Living with spouse and<br>children              | 21.5            | 66.0             | 12.5        | 15,090       | 20.9            | 65.5             | 13.6        | 7,506        | 21.3            | 65.9             | 12.9        | 22,596       |
| Living with children and<br>others              | 25.3            | 60.2             | 14.5        | 2,221        | 23.0            | 62.2             | 14.8        | 4,803        | 23.7            | 61.6             | 14.7        | 7,024        |
| Living with others only                         | 25.8            | 56.8             | 17.4        | 521          | 24.1            | 59.4             | 16.5        | 917          | 24.6            | 58.6             | 16.8        | 1,438        |
| <b>Religion</b>                                 |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Hindu                                           | 22.2            | 64.8             | 13.1        | 15,310       | 22.7            | 63.4             | 13.9        | 13,092       | 22.4            | 64.1             | 13.5        | 28,402       |
| Muslim                                          | 22.1            | 66.2             | 11.7        | 2,900        | 24.5            | 62.8             | 12.7        | 2,405        | 23.2            | 64.7             | 12.1        | 5,305        |
| Christian                                       | 42.6            | 50.4             | 7.0         | 1,154        | 38.1            | 56.1             | 5.7         | 1,034        | 40.6            | 53.0             | 6.4         | 2,188        |
| Others                                          | 18.8            | 63.2             | 18.0        | 1,029        | 13.8            | 67.0             | 19.2        | 985          | 16.2            | 65.2             | 18.6        | 2,014        |
| <b>Caste/tribe</b>                              |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Scheduled tribe                                 | 35.3            | 49.9             | 14.8        | 2,358        | 35.4            | 48.0             | 16.6        | 1,875        | 35.3            | 49.0             | 15.6        | 4,233        |
| Scheduled caste                                 | 24.6            | 56.3             | 19.1        | 3,799        | 25.8            | 54.3             | 19.90       | 3,048        | 25.2            | 55.4             | 19.5        | 6,847        |
| Other backward class                            | 21.1            | 69.0             | 10.0        | 8,055        | 21.7            | 67.5             | 10.8        | 7,015        | 21.4            | 68.3             | 10.4        | 15,070       |
| None of the above                               | 20.3            | 67.2             | 12.5        | 6,181        | 20.1            | 66.1             | 13.8        | 5,578        | 20.2            | 66.7             | 13.2        | 11,759       |
| <b>Education</b>                                |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| No schooling                                    | 23.3            | 60.6             | 16.2        | 8,259        | 24.3            | 59.2             | 16.6        | 9,210        | 23.8            | 59.8             | 16.4        | 17,469       |
| Less than 5 years<br>complete                   | 25.1            | 63.3             | 11.6        | 2,152        | 26.3            | 62.7             | 11.1        | 2,143        | 25.7            | 63.0             | 11.3        | 4,295        |
| 5-9 years complete                              | 25.1            | 64.0             | 10.9        | 5,457        | 23.4            | 66.0             | 10.6        | 3,424        | 24.4            | 64.8             | 10.8        | 8,881        |
| 10 or more years<br>complete                    | 16.5            | 75.1             | 8.5         | 4,525        | 13.6            | 77.0             | 9.4         | 2,739        | 15.3            | 75.8             | 8.9         | 7,264        |
| <b>Work status</b>                              |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Currently working                               | 22.2            | 64.2             | 13.7        | 11,417       | 23.5            | 60.7             | 15.8        | 4,814        | 22.6            | 63.1             | 14.3        | 16,231       |
| Worked in the past but<br>currently not working | 25.3            | 66.2             | 8.5         | 2,668        | 24.1            | 62.9             | 13.0        | 7,796        | 24.4            | 63.7             | 11.8        | 10,464       |
| Never worked                                    | 22.0            | 64.6             | 13.4        | 6,308        | 19.9            | 67.1             | 13.0        | 4,906        | 21.0            | 65.7             | 13.2        | 11,214       |
| <b>MPCE quintile</b>                            |                 |                  |             |              |                 |                  |             |              |                 |                  |             |              |
| Poorest                                         | 27.2            | 54.8             | 18.0        | 3,240        | 27.8            | 51.9             | 20.3        | 3,184        | 27.5            | 53.3             | 19.2        | 6,424        |
| Poorer                                          | 23.5            | 61.0             | 15.5        | 3,941        | 23.7            | 61.0             | 15.4        | 3,587        | 23.6            | 61.0             | 15.4        | 7,528        |
| Middle                                          | 23.0            | 64.3             | 12.8        | 4,139        | 23.1            | 63.7             | 13.2        | 3,543        | 23.1            | 64.0             | 13.0        | 7,682        |
| Richer                                          | 20.7            | 68.1             | 11.2        | 4,515        | 21.7            | 67.7             | 10.7        | 3,646        | 21.1            | 67.9             | 10.9        | 8,161        |
| Richest                                         | 19.2            | 73.1             | 7.8         | 4,558        | 17.5            | 73.4             | 9.1         | 3,556        | 18.4            | 73.2             | 8.4         | 8,114        |
| <b>Total</b>                                    | <b>22.6</b>     | <b>64.6</b>      | <b>12.9</b> | <b>20393</b> | <b>22.9</b>     | <b>63.3</b>      | <b>13.8</b> | <b>17516</b> | <b>22.7</b>     | <b>64.0</b>      | <b>13.3</b> | <b>37909</b> |

\*Including spouse irrespective of age

Table 13.6 presents the use of out-patient care by type of health facility among the elderly and older adults in Indian states. The proportion of older adults age 45 and above who use public health facility for out-patient care is the highest in Andaman & Nicobar Islands (87%), followed by Lakshadweep (85%), and Arunachal Pradesh (78%), and is the lowest in Bihar (11%), Telangana (11%), Maharashtra (12%), and Uttar Pradesh (14%). More than half of the older adults in eight states and union territories use out-patient care from public health facility. The use of private health facility for out-patient care is the highest in the states of Telangana, Maharashtra, Andhra Pradesh, and Gujarat, and the lowest in Andaman & Nicobar, Lakshadweep, and Arunachal Pradesh. A substantial proportion of older adults (more than one-fifth) from Bihar, Punjab, Uttar Pradesh, Meghalaya and Tripura use out-patient care from other health facilities (such as mobile health vans and health camps). The pattern of out-patient care use from public, private, and other facilities is similar for both the elderly age 60 and above and older adults age 45-59.

**Table 13.6 Percent distribution of older adults who received out-patient care in one year prior to survey by type of health facilities, states/UTs, LASI Wave 1, 2017-18**

| States/ Union Territory   | Age 45-59*      |                  |             |               | Age ≥ 60        |                  |             |               | Total           |                  |             |               |
|---------------------------|-----------------|------------------|-------------|---------------|-----------------|------------------|-------------|---------------|-----------------|------------------|-------------|---------------|
|                           | Public facility | Private facility | Others      | Number        | Public facility | Private facility | Others      | Number        | Public facility | Private facility | Others      | Number        |
| <b>India</b>              | <b>22.6</b>     | <b>64.6</b>      | <b>12.9</b> | <b>20,393</b> | <b>22.9</b>     | <b>63.3</b>      | <b>13.8</b> | <b>17,516</b> | <b>22.7</b>     | <b>64.0</b>      | <b>13.3</b> | <b>37,909</b> |
| <b>North</b>              |                 |                  |             |               |                 |                  |             |               |                 |                  |             |               |
| Chandigarh                | 50.2            | 37.9             | 11.9        | 388           | 45.9            | 42.2             | 11.9        | 238           | 48.6            | 39.6             | 11.9        | 626           |
| Delhi                     | 56.6            | 34.0             | 9.5         | 286           | 56.2            | 40.7             | 3.1         | 186           | 56.4            | 36.7             | 6.9         | 472           |
| Haryana                   | 15.3            | 70.2             | 14.6        | 593           | 17.2            | 71.2             | 11.6        | 490           | 16.2            | 70.7             | 13.1        | 1,083         |
| Himachal Pradesh          | 50.4            | 39.6             | 10.0        | 472           | 50.3            | 36.7             | 13.0        | 400           | 50.4            | 38.2             | 11.4        | 872           |
| Jammu & Kashmir           | 60.4            | 34.0             | 5.6         | 549           | 60.8            | 35.3             | 3.9         | 483           | 60.6            | 34.7             | 4.7         | 1,032         |
| Punjab                    | 15.6            | 58.2             | 26.3        | 800           | 15.6            | 58.2             | 26.2        | 763           | 15.6            | 58.2             | 26.2        | 1,563         |
| Rajasthan                 | 42.8            | 50.1             | 7.1         | 659           | 44.3            | 48.9             | 6.8         | 682           | 43.6            | 49.5             | 6.9         | 1,341         |
| Uttarakhand               | 27.5            | 58.2             | 14.4        | 341           | 23.9            | 58.2             | 17.9        | 325           | 25.7            | 58.2             | 16.2        | 666           |
| <b>Central</b>            |                 |                  |             |               |                 |                  |             |               |                 |                  |             |               |
| Chhattisgarh              | 34.3            | 48.3             | 17.5        | 450           | 37.4            | 46.8             | 15.9        | 288           | 35.5            | 47.7             | 16.8        | 738           |
| Madhya Pradesh            | 19.5            | 75.2             | 5.3         | 589           | 26.4            | 66.2             | 7.4         | 540           | 22.8            | 70.9             | 6.3         | 1,129         |
| Uttar Pradesh             | 12.8            | 61.4             | 25.8        | 1,363         | 14.5            | 62.4             | 23.1        | 1,314         | 13.7            | 61.9             | 24.4        | 2,677         |
| <b>East</b>               |                 |                  |             |               |                 |                  |             |               |                 |                  |             |               |
| Bihar                     | 11.7            | 59.2             | 29.1        | 1,313         | 9.7             | 58.4             | 32.0        | 1,429         | 10.6            | 58.7             | 30.7        | 2,742         |
| Jharkhand                 | 18.1            | 64.5             | 17.4        | 527           | 11.1            | 67.6             | 21.3        | 527           | 14.5            | 66.1             | 19.4        | 1,054         |
| Odisha                    | 43.4            | 39.0             | 17.7        | 821           | 41.2            | 39.8             | 19.0        | 654           | 42.3            | 39.4             | 18.3        | 1,475         |
| West Bengal               | 20.4            | 60.0             | 19.6        | 1,711         | 21.3            | 59.7             | 19.0        | 1,091         | 20.8            | 59.9             | 19.4        | 2,802         |
| <b>Northeast</b>          |                 |                  |             |               |                 |                  |             |               |                 |                  |             |               |
| Arunachal Pradesh         | 78.1            | 11.7             | 10.1        | 205           | 78.1            | 15.9             | 6.0         | 88            | 78.1            | 13.0             | 8.9         | 293           |
| Assam                     | 47.2            | 38.2             | 14.6        | 686           | 42.8            | 44.9             | 12.3        | 393           | 45.6            | 40.7             | 13.8        | 1,079         |
| Manipur                   | 43.1            | 39.0             | 17.9        | 301           | 43.4            | 36.1             | 20.5        | 276           | 43.3            | 37.5             | 19.2        | 577           |
| Meghalaya                 | 46.9            | 19.7             | 33.5        | 108           | 31.2            | 47.9             | 21.0        | 101           | 39.1            | 33.7             | 27.2        | 209           |
| Mizoram                   | 49.4            | 47.4             | 3.3         | 112           | 63.9            | 29.2             | 7.0         | 101           | 57.0            | 37.8             | 5.2         | 213           |
| Nagaland                  | 35.3            | 58.1             | 6.7         | 55            | 44.6            | 54.8             | 0.6         | 49            | 40.1            | 56.4             | 3.5         | 104           |
| Tripura                   | 35.2            | 38.2             | 26.7        | 263           | 47.4            | 30.3             | 22.3        | 172           | 40.1            | 35.0             | 24.9        | 435           |
| <b>West</b>               |                 |                  |             |               |                 |                  |             |               |                 |                  |             |               |
| Dadra & Nagar Haveli      | 51.5            | 48.0             | 0.5         | 174           | 51.3            | 47.3             | 1.4         | 144           | 51.4            | 47.7             | 0.9         | 318           |
| Daman & Diu               | 32.2            | 66.1             | 1.7         | 283           | 33.2            | 65.1             | 1.7         | 267           | 32.7            | 65.6             | 1.7         | 550           |
| Goa                       | 37.2            | 62.8             | 0.0         | 416           | 32.3            | 67.7             | 0.0         | 381           | 34.9            | 65.2             | 0.0         | 797           |
| Gujarat                   | 19.9            | 77.3             | 2.9         | 603           | 21.6            | 73.2             | 5.3         | 503           | 20.7            | 75.3             | 4.0         | 1,106         |
| Maharashtra               | 11.8            | 84.3             | 3.9         | 1,236         | 12.5            | 82.1             | 5.4         | 1,157         | 12.1            | 83.2             | 4.7         | 2,393         |
| <b>South</b>              |                 |                  |             |               |                 |                  |             |               |                 |                  |             |               |
| Andaman & Nicobar Islands | 88.2            | 11.8             | 0.0         | 178           | 86.5            | 12.2             | 1.3         | 141           | 87.4            | 12.0             | 0.6         | 319           |
| Andhra Pradesh            | 17.4            | 77.0             | 5.6         | 891           | 18.7            | 73.9             | 7.4         | 686           | 18.0            | 75.6             | 6.4         | 1,577         |
| Karnataka                 | 26.2            | 71.8             | 2.0         | 890           | 28.0            | 67.4             | 4.6         | 709           | 27.0            | 69.9             | 3.1         | 1,599         |
| Kerala                    | 44.7            | 53.7             | 1.7         | 737           | 45.2            | 53.3             | 1.5         | 762           | 44.9            | 53.5             | 1.6         | 1,499         |
| Lakshadweep               | 84.1            | 15.9             | 0.0         | 351           | 85.8            | 13.6             | 0.7         | 340           | 84.9            | 14.7             | 0.4         | 691           |
| Puducherry                | 51.3            | 46.4             | 2.4         | 429           | 57.5            | 40.0             | 2.5         | 421           | 54.5            | 43.0             | 2.4         | 850           |
| Tamil Nadu                | 36.1            | 63.5             | 0.4         | 893           | 40.1            | 59.4             | 0.5         | 826           | 38.1            | 61.5             | 0.5         | 1,719         |
| Telangana                 | 10.1            | 83.7             | 6.2         | 720           | 12.3            | 80.3             | 7.4         | 589           | 11.1            | 82.2             | 6.7         | 1,309         |

\*Including spouse irrespective of age.

## 13.2 HOSPITALIZATION BY CAUSE

Table 13.7 presents the percent distribution of hospitalization by type of disease, according to sex and place of residence. Among those hospitalized, 63% are hospitalized for non-communicable diseases (NCDs), 21% are hospitalized for communicable diseases, and about 6% are hospitalized for maternal health problems and other diseases. The highest proportion of hospitalization cases are for fever/pyrexia of unknown origin (13%), followed by gastroenteritis/other diarrheal illness (8%), and diabetes and related complications (7%). Cardiovascular diseases (high blood pressure, heart disease and stroke) account for 16% of all hospitalization cases. Hospitalization cause also varies by sex: 16% women were hospitalized for fever/pyrexia of unknown origin compared to 10% for men. Hospitalisation for diabetes is higher in urban areas (13%) compared to rural areas (5%).

**Table 13.7 Percent distribution of older adults who received inpatient care in one year prior to survey by various diseases according to age group, sex and place of residence, India, LASI Wave 1, 2017-18**

| Type of disease                                                | Age          |              | Sex          |              | Place of residence |              | Total        |
|----------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------------|--------------|--------------|
|                                                                | 45-59*       | ≥60          | Male         | Female       | Rural              | Urban        |              |
| <b>Non-Communicable Diseases</b>                               | <b>58.6</b>  | <b>66.1</b>  | <b>67.1</b>  | <b>58.9</b>  | <b>59.0</b>        | <b>70.6</b>  | <b>62.6</b>  |
| <b>Chronic Disease</b>                                         |              |              |              |              |                    |              |              |
| Cancer                                                         | 1.6          | 1.5          | 1.4          | 1.7          | 1.4                | 1.9          | 1.5          |
| Diabetes or related complications                              | 8.9          | 5.6          | 10.6         | 4.2          | 4.6                | 12.5         | 7.1          |
| High blood pressure(hypertension)                              | 4.6          | 5.6          | 3.9          | 6.1          | 4.8                | 5.7          | 5.1          |
| Problems with heart, including unexplained pain in chest       | 5.7          | 7.2          | 7.5          | 5.6          | 6.0                | 7.4          | 6.5          |
| Stroke/sudden paralysis of one side of body                    | 3.0          | 5.2          | 5.3          | 3.3          | 3.7                | 5.2          | 4.2          |
| <b>Respiratory Disease</b>                                     |              |              |              |              |                    |              |              |
| Problems with breathing                                        | 4.6          | 7.0          | 6.2          | 5.5          | 5.1                | 7.5          | 5.9          |
| Upper Respiratory Tract Infection                              | 0.6          | 0.9          | 0.8          | 0.7          | 1.1                | 0.1          | 0.8          |
| <b>Bone Disease</b>                                            |              |              |              |              |                    |              |              |
| Chronic pain in joints/arthritis/rheumatism/osteoporosis       | 6.1          | 7.0          | 6.1          | 7.0          | 6.9                | 5.9          | 6.6          |
| <b>Gastrointestinal Disease</b>                                |              |              |              |              |                    |              |              |
| Gastroenteritis or other diarrheal illness                     | 7.6          | 7.4          | 5.7          | 9.1          | 7.7                | 7.2          | 7.5          |
| Liver diseases (hepatitis, alcoholic liver disease, cirrhosis) | 2.3          | 2.8          | 3.6          | 1.7          | 2.5                | 2.8          | 2.6          |
| <b>Upper and Lower Abdominal Causes</b>                        |              |              |              |              |                    |              |              |
| Surgery for abdominal causes                                   | 5.8          | 5.9          | 5.5          | 6.2          | 6.2                | 5.2          | 5.9          |
| Surgery for genitourinary                                      | 1.7          | 2.1          | 3.4          | 0.7          | 1.8                | 2.3          | 1.9          |
| <b>Neuro and Psychiatric condition</b>                         |              |              |              |              |                    |              |              |
| Depression or anxiety/ tension/ sleep problem                  | 2.2          | 0.9          | 2.3          | 0.9          | 1.1                | 2.5          | 1.5          |
| Surgery for ophthalmic                                         | 3.9          | 7.0          | 4.8          | 6.2          | 6.1                | 4.4          | 5.5          |
| Communicable Diseases                                          | <b>22.7</b>  | <b>19.7</b>  | <b>17.4</b>  | <b>24.4</b>  | <b>23.4</b>        | <b>16.5</b>  | <b>21.3</b>  |
| <b>Vector Born Disease</b>                                     |              |              |              |              |                    |              |              |
| Dengue or other vector-born disease                            | 3.1          | 1.2          | 1.8          | 2.4          | 1.7                | 3.0          | 2.1          |
| Malaria                                                        | 2.6          | 2.4          | 1.9          | 3.1          | 3.4                | 0.7          | 2.5          |
| <b>Acute Disease</b>                                           |              |              |              |              |                    |              |              |
| Fever/Pyrexia of unknown reason                                | 13.5         | 12.7         | 9.9          | 15.7         | 14.5               | 10.0         | 13.1         |
| Other acute/chronic communicable diseases                      | 1.2          | 1.0          | 1.0          | 1.2          | 1.2                | 0.9          | 1.1          |
| Tuberculosis                                                   | 0.8          | 0.5          | 0.7          | 0.6          | 0.8                | 0.3          | 0.7          |
| Urinary Tract Infection/ Reproductive Tract Infection          | 1.4          | 1.9          | 1.9          | 1.4          | 1.7                | 1.6          | 1.7          |
| HIV/AIDS                                                       | 0.1          | 0.0          | 0.2          | 0.0          | 0.1                | 0.0          | 0.1          |
| <b>Injury/Accident</b>                                         | <b>9.3</b>   | <b>10.4</b>  | <b>11.8</b>  | <b>8.2</b>   | <b>10.5</b>        | <b>8.5</b>   | <b>9.8</b>   |
| Fracture/Muscle rupture                                        | 3.6          | 5.0          | 4.7          | 4.0          | 4.5                | 4.0          | 4.3          |
| Injury/accident (non-occupational)                             | 4.7          | 4.3          | 5.9          | 3.3          | 4.7                | 4.0          | 4.5          |
| Occupation/work-related accident/ injury                       | 1.0          | 1.1          | 1.2          | 0.9          | 1.3                | 0.5          | 1.0          |
| <b>Maternal Health &amp; Other Diseases</b>                    | <b>9.4</b>   | <b>3.8</b>   | <b>3.7</b>   | <b>8.5</b>   | <b>7.1</b>         | <b>4.4</b>   | <b>6.3</b>   |
| Maternal or prenatal conditions                                | 4.5          | 0.7          | 0.0          | 4.6          | 3.0                | 1.5          | 2.5          |
| Surgery for other causes                                       | 2.9          | 1.7          | 2.2          | 2.4          | 2.5                | 1.8          | 2.3          |
| Other Disease                                                  | 2.0          | 1.4          | 1.5          | 1.5          | 1.6                | 1.1          | 1.5          |
| <b>Number</b>                                                  | <b>2,202</b> | <b>2,429</b> | <b>2,119</b> | <b>2,512</b> | <b>2,977</b>       | <b>1,654</b> | <b>4,631</b> |

\*Including spouse irrespective of age.

Among older adults age 45 and above who sought out-patient care, nearly half of them were treated for non-communicable diseases, 34% were treated for communicable diseases and 14% for maternal and child health problems and other diseases (Table 13.8).

Twenty-nine percent sought out-patient care for fever/pyrexia of unknown origin, followed by 14% for chronic pain in joint/arthritis/rheumatism/osteoporosis, and 10% for generalized pain. Of all out-patient care, cardiovascular diseases account for 12%, and diabetes or related complications account for 6%. The reason for seeking out-patient care varies by age group: nearly three-fifths (54%) of the elderly age 60 and above sought out-patient care for non-communicable diseases compared to 43% of the older adults in age 45-59.

All those who received inpatient or out-patient care were asked about the quality of health care received during their last hospitalization or out-patient visit. The questions included waiting time, privacy, cleanliness, interpersonal communication and getting a health care of choice. Responses of both 'good' and 'very good' were categorised as 'good' while responses of both 'poor' and 'very poor' were categorised as 'poor'.

**Table 13.8 Percent distribution of older adults who received out-patient care in one year prior to survey by various diseases according to age group, sex and place of residence, India, LASI Wave 1, 2017-18**

| Type of disease                                                | Age           |               | Sex           |               | Place of residence |               | Total         |
|----------------------------------------------------------------|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|
|                                                                | 45-59*        | ≥60           | Male          | Female        | Rural              | Urban         |               |
| <b>Non-Communicable Diseases</b>                               | <b>43.3</b>   | <b>53.9</b>   | <b>48.0</b>   | <b>48.8</b>   | <b>45.8</b>        | <b>54.8</b>   | <b>48.5</b>   |
| <b>Chronic Disease</b>                                         |               |               |               |               |                    |               |               |
| Cancer                                                         | 0.3           | 0.3           | 0.2           | 0.3           | 0.2                | 0.5           | 0.3           |
| Diabetes or related complications                              | 5.0           | 6.4           | 6.5           | 5.2           | 4.0                | 9.7           | 5.7           |
| High blood pressure (Hypertension)                             | 6.4           | 10.7          | 7.5           | 9.2           | 7.3                | 11.4          | 8.5           |
| Problems with heart, including unexplained pain in chest       | 1.9           | 2.8           | 3.2           | 1.8           | 2.0                | 3.2           | 2.4           |
| Stroke/sudden paralysis of one side of body                    | 0.5           | 1.2           | 1.4           | 0.5           | 0.9                | 0.8           | 0.8           |
| <b>Respiratory Disease</b>                                     |               |               |               |               |                    |               |               |
| Problems with breathing                                        | 2.4           | 4.4           | 4.4           | 2.7           | 3.5                | 2.9           | 3.4           |
| Upper Respiratory tract                                        | 0.6           | 1.1           | 1.2           | 0.6           | 0.9                | 0.6           | 0.8           |
| <b>Bone Disease</b>                                            |               |               |               |               |                    |               |               |
| Chronic pain in joints/arthritis/rheumatism/osteoporosis       | 13.5          | 15.1          | 10.9          | 16.6          | 14.6               | 13.6          | 14.3          |
| <b>Gastrointestinal Disease</b>                                |               |               |               |               |                    |               |               |
| Gastroenteritis or other diarrheal illness                     | 2.8           | 2.7           | 3.0           | 2.6           | 2.8                | 2.9           | 2.8           |
| Liver diseases                                                 | 1.1           | 1.3           | 1.5           | 1.0           | 1.3                | 1.0           | 1.2           |
| Gastritis/acidity                                              | 1.8           | 1.2           | 1.5           | 1.5           | 1.7                | 1.1           | 1.5           |
| <b>ENT</b>                                                     |               |               |               |               |                    |               |               |
| Problems with mouth/teeth/gum/lips/swallowing/throat           | 3.5           | 2.4           | 2.7           | 3.1           | 2.7                | 3.4           | 2.9           |
| Problems with ears                                             | 0.5           | 0.5           | 0.5           | 0.5           | 0.5                | 0.4           | 0.5           |
| <b>Neuro and Psychiatric condition</b>                         |               |               |               |               |                    |               |               |
| Depression or anxiety/ tension/ sleep problem                  | 1.1           | 0.7           | 0.8           | 0.9           | 0.9                | 0.8           | 0.9           |
| <b>Eye Disease</b>                                             |               |               |               |               |                    |               |               |
| Problems with eyes                                             | 1.9           | 3.1           | 2.7           | 2.3           | 2.5                | 2.5           | 2.5           |
| <b>Communicable Diseases</b>                                   | <b>37.7</b>   | <b>30.9</b>   | <b>35.2</b>   | <b>33.9</b>   | <b>36.1</b>        | <b>30.4</b>   | <b>34.3</b>   |
| <b>Vector Born Disease</b>                                     |               |               |               |               |                    |               |               |
| Dengue or other vector-born disease                            | 0.5           | 0.5           | 0.5           | 0.5           | 0.4                | 0.7           | 0.5           |
| Malaria                                                        | 1.3           | 1.0           | 1.3           | 1.1           | 1.5                | 0.5           | 1.2           |
| <b>Acute disease</b>                                           |               |               |               |               |                    |               |               |
| Other acute/chronic communicable disease                       | 0.7           | 0.4           | 0.5           | 0.6           | 0.5                | 0.6           | 0.5           |
| Skin diseases                                                  | 2.4           | 1.5           | 2.3           | 1.7           | 2.0                | 1.9           | 2.0           |
| Tuberculosis                                                   | 0.3           | 0.4           | 0.6           | 0.2           | 0.4                | 0.1           | 0.3           |
| Fever/ pyrexia of unknown cause                                | 31.5          | 26.1          | 28.8          | 29.0          | 30.3               | 25.6          | 28.9          |
| Urinary tract infection                                        | 0.9           | 1.0           | 1.1           | 0.8           | 0.9                | 1.0           | 0.9           |
| HIV/AIDS                                                       | 0.1           | 0.0           | 0.1           | 0.0           | 0.1                | 0.0           | 0.0           |
| <b>Injury/Accident</b>                                         | <b>3.0</b>    | <b>3.2</b>    | <b>4.0</b>    | <b>2.5</b>    | <b>3.3</b>         | <b>2.6</b>    | <b>3.1</b>    |
| Injury/accident                                                | 2.4           | 2.7           | 3.2           | 2.1           | 2.7                | 2.2           | 2.5           |
| Occupation/work related accident/injury                        | 0.6           | 0.5           | 0.8           | 0.4           | 0.6                | 0.4           | 0.6           |
| <b>Maternal &amp; Child Health Problems and other diseases</b> | <b>16.0</b>   | <b>12.0</b>   | <b>12.8</b>   | <b>14.8</b>   | <b>14.8</b>        | <b>12.2</b>   | <b>14.1</b>   |
| Maternal or prenatal conditions                                | 1.1           | 0.1           | 0.0           | 1.0           | 0.6                | 0.6           | 0.6           |
| Follow-up from any surgery                                     | 0.4           | 0.4           | 0.5           | 0.4           | 0.5                | 0.3           | 0.4           |
| Nutritional malfunctions                                       | 0.4           | 0.3           | 0.3           | 0.4           | 0.4                | 0.2           | 0.4           |
| Generalized pain                                               | 11.5          | 9.3           | 9.3           | 11.2          | 10.9               | 9.3           | 10.4          |
| Other disease                                                  | 2.6           | 1.9           | 2.7           | 1.8           | 2.4                | 1.8           | 2.3           |
| <b>Number</b>                                                  | <b>18,908</b> | <b>16,252</b> | <b>14,024</b> | <b>21,136</b> | <b>22,557</b>      | <b>12,603</b> | <b>35,160</b> |

\*Including spouse irrespective of age.

Table 13.9 presents the percent distribution of older adults age 45 and above by perceived quality of care in India. Overall, 58% of the older adults age 45 and above rated the quality of the care they received during their last hospitalization as good, 23% as average and 19% as poor. As education level increases, the proportion of respondents reporting good quality of inpatient care also increases. The perception of quality of care did not show any consistent pattern with the MPCE quintiles. Similarly, 61% of those who received out-patient care rated it as good. The pattern of quality of care for out-patient care by background characteristics is similar to inpatient care. The proportion of those reporting good quality of care increases with both education level and MPCE quintile; with inpatient care, the pattern with MPCE quintile was not consistent. Fifty-five percent of the older adults age 45 and above in the poorest quintile and 63% in the richest quintile report the quality of out-patient care as good.

**Table 13.9 Percent distribution of older adults age 45 and above by perceived quality of care for healthcare facilities during inpatient and out-patient care in the most recent visit prior to survey according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                   | Quality of inpatient care |             |             | Quality of out-patient care |             |             |
|----------------------------------------------|---------------------------|-------------|-------------|-----------------------------|-------------|-------------|
|                                              | Poor                      | Average     | Good        | Poor                        | Average     | Good        |
| <b>Place of residence</b>                    |                           |             |             |                             |             |             |
| Rural                                        | 21.6                      | 20.4        | 58.0        | 20.2                        | 21.2        | 58.6        |
| Urban                                        | 14.3                      | 26.6        | 59.2        | 17.3                        | 17.7        | 65.0        |
| <b>Sex</b>                                   |                           |             |             |                             |             |             |
| Male                                         | 20.6                      | 21.8        | 57.6        | 18.5                        | 20.1        | 61.5        |
| Female                                       | 17.9                      | 23.1        | 59.0        | 19.8                        | 20.2        | 60.0        |
| <b>Marital status</b>                        |                           |             |             |                             |             |             |
| Currently married                            | 18.5                      | 24.2        | 57.3        | 18.6                        | 19.6        | 61.8        |
| Widowed                                      | 21.1                      | 17.4        | 61.5        | 20.6                        | 22.1        | 57.3        |
| Divorced/Separated/Deserted/Others           | 18.5                      | 14.8        | 66.7        | 28.7                        | 18.8        | 52.5        |
| <b>Living arrangement</b>                    |                           |             |             |                             |             |             |
| Living alone                                 | 20.4                      | 15.8        | 63.8        | 22.9                        | 21.6        | 55.5        |
| Living with spouse and / or others           | 20.7                      | 16.4        | 62.9        | 19.2                        | 20.4        | 60.3        |
| Living with spouse and children              | 17.9                      | 26.5        | 55.6        | 18.4                        | 19.4        | 62.2        |
| Living with children and others              | 21.2                      | 17.7        | 61.1        | 20.9                        | 21.6        | 57.4        |
| Living with others only                      | 18.3                      | 16.2        | 65.5        | 21.7                        | 22.1        | 56.3        |
| <b>Religion</b>                              |                           |             |             |                             |             |             |
| Hindu                                        | 19.4                      | 21.5        | 59.1        | 19.4                        | 20.0        | 60.6        |
| Muslim                                       | 13.5                      | 30.5        | 56.1        | 19.4                        | 21.9        | 58.7        |
| Christian                                    | 33.2                      | 16.0        | 50.7        | 26.2                        | 13.9        | 59.9        |
| Others                                       | 21.4                      | 19.2        | 59.4        | 12.5                        | 20.2        | 67.4        |
| <b>Caste/tribe</b>                           |                           |             |             |                             |             |             |
| Scheduled tribe                              | 18.7                      | 22.8        | 58.6        | 21.2                        | 23.1        | 55.7        |
| Scheduled caste                              | 24.6                      | 17.9        | 57.5        | 22.3                        | 21.9        | 55.8        |
| Other backward class                         | 17.5                      | 26.6        | 56.0        | 19.5                        | 19.7        | 60.8        |
| None of the above                            | 17.8                      | 19.0        | 63.2        | 16.5                        | 19.0        | 64.6        |
| <b>Education</b>                             |                           |             |             |                             |             |             |
| No schooling                                 | 22.5                      | 23.2        | 54.3        | 22.6                        | 21.0        | 56.4        |
| Less than 5 years complete                   | 21.1                      | 18.6        | 60.4        | 19.9                        | 19.8        | 60.4        |
| 5-9 years complete                           | 17.5                      | 18.7        | 63.8        | 17.7                        | 20.1        | 62.2        |
| 10 or more years complete                    | 9.1                       | 29.1        | 61.8        | 11.2                        | 17.8        | 71.0        |
| <b>Work status</b>                           |                           |             |             |                             |             |             |
| Currently working                            | 16.8                      | 25.9        | 57.3        | 18.7                        | 20.8        | 60.5        |
| Worked in the past but currently not working | 20.5                      | 22.3        | 57.2        | 20.0                        | 20.2        | 59.9        |
| Never worked                                 | 20.4                      | 17.3        | 62.3        | 19.6                        | 19.0        | 61.5        |
| <b>MPCE quintile</b>                         |                           |             |             |                             |             |             |
| Poorest                                      | 23.1                      | 19.2        | 57.7        | 23.9                        | 20.8        | 55.3        |
| Poorer                                       | 28.8                      | 20.1        | 51.1        | 20.7                        | 20.3        | 59.1        |
| Middle                                       | 19.4                      | 18.8        | 61.9        | 19.1                        | 19.6        | 61.3        |
| Richer                                       | 17.8                      | 16.8        | 65.4        | 17.5                        | 19.0        | 63.5        |
| Richest                                      | 13.1                      | 31.0        | 55.9        | 15.5                        | 21.1        | 63.4        |
| <b>Total</b>                                 | <b>19.1</b>               | <b>22.5</b> | <b>58.4</b> | <b>19.3</b>                 | <b>20.1</b> | <b>60.6</b> |



Table 13.10 presents the inter-state variations in the percent distribution of older adults age 45 and above by perceived quality of care. The proportion of older adults age 45 and above who rated quality of care as good for hospitalisation is the highest in Nagaland (95%), Gujarat (91%), and Daman & Diu (90%), and is the lowest in Tripura (35%), Karnataka (39%), and Manipur (41%). More than 80% of the older adults age 45 and above rated out-patient quality of care as good in the states of Gujarat (88%), Nagaland (88%), Daman & Diu (86%), and Chandigarh (82%), and this proportion is the lowest in Puducherry (38%) and Chhattisgarh (39%).

**Table 13.10 Percent distribution of older adults age 45 and above by perceived quality of care for healthcare facilities during inpatient and out-patient care in the most recent visit prior to survey, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Quality of inpatient care |             |             |              | Quality of out-patient care |             |             |               |
|---------------------------|---------------------------|-------------|-------------|--------------|-----------------------------|-------------|-------------|---------------|
|                           | Poor                      | Average     | Good        | Number       | Poor                        | Average     | Good        | Number        |
| <b>India</b>              | <b>19.1</b>               | <b>22.5</b> | <b>58.4</b> | <b>4,674</b> | <b>19.3</b>                 | <b>20.1</b> | <b>60.6</b> | <b>37,519</b> |
| <b>North</b>              |                           |             |             |              |                             |             |             |               |
| Chandigarh                | 9.0                       | 12.0        | 79.0        | 68           | 5.7                         | 12.6        | 81.8        | 626           |
| Delhi                     | 26.1                      | 10.6        | 63.3        | 73           | 15.9                        | 12.6        | 71.5        | 472           |
| Haryana                   | 18.7                      | 32.1        | 49.3        | 159          | 22.1                        | 23.9        | 54.0        | 1,069         |
| Himachal Pradesh          | 8.6                       | 12.6        | 78.8        | 143          | 6.5                         | 18.8        | 74.8        | 864           |
| Jammu & Kashmir           | 21.3                      | 31.4        | 47.4        | 83           | 27.1                        | 20.0        | 52.9        | 1,016         |
| Punjab                    | 8.9                       | 13.6        | 77.6        | 146          | 7.8                         | 16.5        | 75.7        | 1,553         |
| Rajasthan                 | 23.3                      | 20.2        | 56.5        | 180          | 20.6                        | 24.2        | 55.2        | 1,335         |
| Uttarakhand               | 23.6                      | 25.2        | 51.3        | 77           | 23.2                        | 27.4        | 49.4        | 666           |
| <b>Central</b>            |                           |             |             |              |                             |             |             |               |
| Chhattisgarh              | 23.6                      | 18.7        | 57.8        | 59           | 39.2                        | 22.1        | 38.7        | 732           |
| Madhya Pradesh            | 29.3                      | 17.3        | 53.5        | 204          | 31.3                        | 19.6        | 49.1        | 1,120         |
| Uttar Pradesh             | 28.0                      | 26.7        | 45.3        | 220          | 27.5                        | 25.5        | 47.0        | 2,620         |
| <b>East</b>               |                           |             |             |              |                             |             |             |               |
| Bihar                     | 17.1                      | 20.1        | 62.8        | 151          | 12.8                        | 20.5        | 66.7        | 2,701         |
| Jharkhand                 | 19.2                      | 15.8        | 65.0        | 120          | 17.9                        | 20.7        | 61.4        | 1,046         |
| Odisha                    | 13.8                      | 20.0        | 66.2        | 147          | 15.0                        | 15.6        | 69.4        | 1,459         |
| West Bengal               | 24.6                      | 15.3        | 60.1        | 260          | 18.9                        | 15.4        | 65.7        | 2,768         |
| <b>Northeast</b>          |                           |             |             |              |                             |             |             |               |
| Arunachal Pradesh         | 29.9                      | 7.9         | 62.2        | 67           | 36.5                        | 19.4        | 44.1        | 292           |
| Assam                     | 14.4                      | 17.8        | 67.8        | 93           | 14.8                        | 15.7        | 69.5        | 1,071         |
| Manipur                   | 27.7                      | 31.5        | 40.8        | 94           | 30.6                        | 26.2        | 43.2        | 568           |
| Meghalaya                 | 19.6                      | 6.5         | 73.9        | 50           | 8.9                         | 12.5        | 78.6        | 209           |
| Mizoram                   | 12.3                      | 10.6        | 77.1        | 71           | 15.7                        | 6.4         | 77.9        | 204           |
| Nagaland                  | 4.0                       | 1.0         | 95.0        | 43           | 5.2                         | 7.1         | 87.7        | 103           |
| Tripura                   | 51.2                      | 14.3        | 34.5        | 122          | 27.7                        | 23.0        | 49.3        | 435           |
| <b>West</b>               |                           |             |             |              |                             |             |             |               |
| Dadra & Nagar Haveli      | 5.9                       | 11.4        | 82.7        | 94           | 6.8                         | 16.2        | 76.9        | 317           |
| Daman & Diu               | 6.8                       | 3.0         | 90.2        | 95           | 3.5                         | 10.2        | 86.4        | 549           |
| Goa                       | 16.9                      | 14.7        | 68.4        | 125          | 7.8                         | 19.6        | 72.6        | 786           |
| Gujarat                   | 1.7                       | 7.0         | 91.3        | 161          | 3.4                         | 8.5         | 88.1        | 1,095         |
| Maharashtra               | 18.4                      | 22.4        | 59.2        | 333          | 13.8                        | 21.0        | 65.3        | 2,370         |
| <b>South</b>              |                           |             |             |              |                             |             |             |               |
| Andaman & Nicobar Islands | 18.5                      | 22.2        | 59.3        | 77           | 28.7                        | 19.7        | 51.6        | 311           |
| Andhra Pradesh            | 10.7                      | 12.9        | 76.4        | 203          | 10.3                        | 15.6        | 74.2        | 1,562         |
| Karnataka                 | 17.7                      | 43.2        | 39.2        | 181          | 25.5                        | 27.3        | 47.2        | 1,578         |
| Kerala                    | 11.3                      | 5.6         | 83.1        | 228          | 17.5                        | 9.5         | 73.0        | 1,480         |
| Lakshadweep               | 6.8                       | 3.2         | 89.9        | 83           | 15.1                        | 6.6         | 78.4        | 686           |
| Puducherry                | 31.8                      | 15.8        | 52.4        | 73           | 35.3                        | 26.8        | 37.9        | 843           |
| Tamil Nadu                | 20.3                      | 13.6        | 66.1        | 200          | 28.8                        | 16.8        | 54.4        | 1,709         |
| Telangana                 | 14.6                      | 28.4        | 57.0        | 191          | 14.1                        | 19.3        | 66.6        | 1,304         |

### Key findings: inpatient and outpatient care

- Among older adults age 45 and above, 7% received inpatient care (hospitalization) in past the year prior to the survey, and 26% received outpatient care in the past month prior to the survey.
- Both inpatient and outpatient care is higher among elderly age 60 and above compared to older adults age 45-59.
- The inpatient rate is the highest in Himachal Pradesh (11.1%) and the lowest in Chhattisgarh (3%), whereas the outpatient rate is the highest in Punjab (54%) and the lowest in Mizoram (3.4%).
- In India, about two-fifths of older adults received inpatient care from public health facility compared to about three-fifths from private health facility.
- Elderly are more likely to receive inpatient and outpatient care from public health facilities.
- For outpatient care, little more than one-fifth of older adults utilised public health facility compared to about three-fifths using private health facilities.
- Among those hospitalized, 63% are hospitalized for non-communicable diseases (NCDs), 21% for communicable diseases, and about 6% are hospitalized for maternal health problems and other diseases.
- Among older adults who seek outpatient care, 28.9% seek it for fever/pyrexia of unknown origin, followed by 14.3% for chronic pain in joint/arthritis/ rheumatism/osteoporosis, and 10.4% for generalized pain.
- Among older adults in age group 45 and above, 58% and 61% deem the quality of their care as good during their inpatient and outpatient visit, respectively.



### 13.3 HEALTHCARE EXPENDITURE

Health expenditure in India is largely financed by households. The per capita health expenditure has been increasing over time, which is associated with rising medical costs, medical technology, increase in non-communicable diseases, medical inflation, rising income and a change in the country's population age structure. In LASI, information was collected on expenditures such as medicines from the hospital and other sources, health care providers' fees, hospital and nursing home charges, operation theatre charges, charges for surgery and related expenses, transportation and expenses related to the accompanying person.

Table 13.11 presents mean out-of-pocket expenditure on hospitalization among older adults age 45 and above by type of health facilities. The mean out of pocket expenditure for the last inpatient visit to a public health facility is ₹ 8,877 compared to ₹ 52,022 in a private health facility. The mean out of pocket expenditure for the last inpatient visit is higher in urban areas than in rural areas for both public and private health facilities. The mean expenditure on inpatient care for both public and private facilities is higher for older adult men than women in age 45 and above. Mean out-of-pocket expenditure in private facilities increases with MPCE quintile; it is ₹ 19,516 among those in the poorest MPCE quintile compared to ₹ 97,546 among those in the richest MPCE quintile.

**Table 13.11 Mean out-of-pocket expenditure (in ₹) of older adults on inpatient care (last hospitalization) in one year prior to survey by background characteristics according to type of health facilities visited, facility visited, India, LASI Wave 1, 2017-18**

| Background characteristics                   | Age 45-59*   |               | Age ≥60      |               | Total        |               |
|----------------------------------------------|--------------|---------------|--------------|---------------|--------------|---------------|
|                                              | Public       | Private       | Public       | Private       | Public       | Private       |
| <b>Place of residence</b>                    |              |               |              |               |              |               |
| Rural                                        | 8,079        | 25,737        | 7,870        | 26,196        | 7,962        | 25,976        |
| Urban                                        | 14,179       | 137,171       | 8,424        | 43,559        | 11,081       | 96,331        |
| <b>Sex</b>                                   |              |               |              |               |              |               |
| Male                                         | 16,279       | 110,614       | 8,372        | 35,618        | 11,178       | 70,752        |
| Female                                       | 6,586        | 43,149        | 7,676        | 28,337        | 7,112        | 36,435        |
| <b>Marital status</b>                        |              |               |              |               |              |               |
| Currently married                            | 10,860       | 76,442        | 7,855        | 37,291        | 9,388        | 60,433        |
| Widowed                                      | 6,167        | 21,409        | 8,284        | 22,004        | 7,756        | 21,890        |
| Divorced/Separated/Deserted/Others           | 4,096        | 34,143        | 11,247       | 20,010        | 5,232        | 29,859        |
| <b>Living arrangement</b>                    |              |               |              |               |              |               |
| Living alone                                 | 2,380        | 21,542        | 1,691        | 19,651        | 1,867        | 19,829        |
| Living with spouse and / or others           | 4,161        | 29,812        | 6,514        | 36,181        | 5,695        | 34,448        |
| Living with spouse and children              | 12,202       | 81,894        | 8,568        | 37,974        | 10,619       | 67,550        |
| Living with children and others              | 6,453        | 23,289        | 10,069       | 22,801        | 9,050        | 22,931        |
| Living with others only                      | 5,435        | 31,005        | 4,271        | 22,306        | 4,668        | 25,207        |
| <b>Education</b>                             |              |               |              |               |              |               |
| No schooling                                 | 7,467        | 101,761       | 5,859        | 23,091        | 6,471        | 60,753        |
| Less than 5 years complete                   | 6,969        | 22,740        | 12,694       | 22,192        | 10,091       | 22,422        |
| 5-9 years complete                           | 13,786       | 28,951        | 8,460        | 44,502        | 11,379       | 35,816        |
| 10 or more years complete                    | 14,332       | 75,922        | 16,022       | 51,216        | 15,067       | 65,733        |
| <b>Work status</b>                           |              |               |              |               |              |               |
| Currently working                            | 8,054        | 41,936        | 4,399        | 24,167        | 6,659        | 36,721        |
| Worked in the past but currently not working | 17,211       | 153,175       | 9,201        | 34,319        | 11,443       | 76,177        |
| Never worked                                 | 5,942        | 30,519        | 9,096        | 33,648        | 7,549        | 32,130        |
| <b>MPCE quintile</b>                         |              |               |              |               |              |               |
| Poorest                                      | 6,578        | 13,897        | 4,500        | 23,834        | 5,313        | 19,516        |
| Poorer                                       | 4,853        | 23,777        | 3,042        | 16,412        | 3,727        | 19,703        |
| Middle                                       | 4,400        | 19,354        | 10,059       | 22,440        | 7,650        | 20,872        |
| Richer                                       | 7,451        | 31,077        | 8,172        | 32,063        | 7,781        | 31,597        |
| Richest                                      | 24,402       | 134,627       | 16,202       | 47,027        | 20,250       | 97,546        |
| <b>Total</b>                                 | <b>9,929</b> | <b>71,232</b> | <b>8,028</b> | <b>31,933</b> | <b>8,877</b> | <b>52,022</b> |

\* Including spouse irrespective of age.

**Table 13.12 Mean out-of-pocket expenditure (in ₹) of older adults on inpatient care (last hospitalization) in one year prior to survey, according to type of health facilities visited, states/UTs, LASI Wave 1, 2017-18**

| States/ Union Territory   | Age 45-59*   |               | Age ≥60      |               | Total        |               |
|---------------------------|--------------|---------------|--------------|---------------|--------------|---------------|
|                           | Public       | Private       | Public       | Private       | Public       | Private       |
| <b>India</b>              | <b>9,929</b> | <b>71,232</b> | <b>8,028</b> | <b>31,933</b> | <b>8,877</b> | <b>52,022</b> |
| <b>North</b>              |              |               |              |               |              |               |
| Chandigarh                | 19,026       | 10,066        | 29,683       | 14,344        | 22,285       | 13,448        |
| Delhi                     | 104,556      | 15,533        | 3,039        | 37,193        | 69,347       | 27,795        |
| Haryana                   | 20,759       | 14,745        | 5,501        | 22,467        | 12,279       | 19,302        |
| Himachal Pradesh          | 14,928       | 29,642        | 35,766       | 148,823       | 27,971       | 93,405        |
| Jammu & Kashmir           | 14,822       | 96,591        | 32,666       | 29,057        | 24,270       | 69,110        |
| Punjab                    | 11,333       | 34,363        | 14,501       | 30,617        | 13,389       | 32,270        |
| Rajasthan                 | 8,414        | 24,686        | 9,053        | 22,034        | 8,804        | 23,239        |
| Uttarakhand               | 33,316       | 53,469        | 4,845        | 29,718        | 17,633       | 42,015        |
| <b>Central</b>            |              |               |              |               |              |               |
| Chhattisgarh              | 5,910        | 29,918        | 2,528        | 14,422        | 4,438        | 19,848        |
| Madhya Pradesh            | 6,215        | 26,211        | 2,165        | 26,261        | 3,878        | 26,239        |
| Uttar Pradesh             | 6,129        | 18,195        | 6,824        | 27,183        | 6,535        | 22,949        |
| <b>East</b>               |              |               |              |               |              |               |
| Bihar                     | 15,928       | 32,763        | 2,290        | 32,486        | 7,618        | 32,608        |
| Jharkhand                 | 15,889       | 23,775        | 15,026       | 23,908        | 15,255       | 23,835        |
| Odisha                    | 6,189        | 34,834        | 11,083       | 46,163        | 9,015        | 38,521        |
| West Bengal               | 6,286        | 30,863        | 6,618        | 47,199        | 6,466        | 38,019        |
| <b>Northeast</b>          |              |               |              |               |              |               |
| Arunachal Pradesh         | 17,774       | 67,691        | 15,003       | 28,319        | 17,131       | 60,415        |
| Assam                     | 8,170        | 38,300        | 9,497        | 35,574        | 8,606        | 37,131        |
| Manipur                   | 12,629       | 44,552        | 16,721       | 52,280        | 14,927       | 48,706        |
| Meghalaya                 | 42,761       | 34,686        | 7,931        | 31,973        | 22,975       | 33,079        |
| Mizoram                   | 27,422       | 28,868        | 13,502       | 18,237        | 20,484       | 25,362        |
| Nagaland                  | 37,580       | 23,232        | 35,550       | 43,834        | 35,850       | 28,825        |
| Tripura                   | 6,665        | 82,465        | 3,015        | 107,530       | 5,245        | 95,578        |
| <b>West</b>               |              |               |              |               |              |               |
| Dadra & Nagar Haveli      | 506          | 46,357        | 187          | 52,077        | 360          | 48,664        |
| Daman & Diu               | 671          | 21,096        | 19,332       | 26,452        | 13,397       | 24,522        |
| Goa                       | 20,234       | 31,547        | 4,117        | 35,582        | 12,180       | 34,201        |
| Gujarat                   | 3,327        | 15,947        | 1,480        | 52,269        | 2,138        | 36,180        |
| Maharashtra               | 7,962        | 24,146        | 15,540       | 25,424        | 13,042       | 24,883        |
| <b>South</b>              |              |               |              |               |              |               |
| Andaman & Nicobar Islands | 1,158        | 134,151       | 2,673        | 50,057        | 2,105        | 127,099       |
| Andhra Pradesh            | 3,624        | 38,262        | 4,158        | 27,704        | 3,914        | 34,054        |
| Karnataka                 | 10,427       | 181,371       | 8,961        | 28,121        | 10,058       | 125,825       |
| Kerala                    | 11,757       | 28,680        | 15,332       | 35,381        | 14,266       | 32,862        |
| Lakshadweep               | 4,609        | 54,747        | 18,429       | 56,585        | 14,885       | 55,847        |
| Puducherry                | 3,170        | 50,749        | 1,698        | 59,404        | 2,403        | 56,668        |
| Tamil Nadu                | 2,894        | 39,888        | 1,822        | 38,788        | 2,255        | 39,242        |
| Telangana                 | 5,240        | 19,980        | 3,123        | 51,870        | 4,132        | 35,108        |

\*Including spouse irrespective of age.

The mean out-of-pocket expenditure shows considerable variations across the states/UTs of India (Table 13.12). The mean out-of-pocket expenditure in public health facilities is the highest in Delhi (₹ 69,347), followed by Nagaland (₹ 35,850), and Himachal Pradesh (₹ 27,971), with the lowest in Dadra & Nagar Haveli (₹ 360), followed by Andaman & Nicobar Islands (₹ 2,105), Gujarat (₹ 2,138), and Tamil Nadu (₹ 2,255). The mean out of pocket expenditure in private health facilities is much higher in Andaman & Nicobar Islands (₹ 1,27,099), Karnataka (₹ 1,25,825), Tripura (₹ 95,578), and Himachal Pradesh (₹ 93,405), and the lowest mean expenditure in private health facility is reported in Chandigarh (₹ 13,448), followed by Haryana (₹ 19,302), and Chhattisgarh (₹ 19,848).

Table 13.13 presents the mean out-of-pocket expenditure during the one month prior to the survey on out-patient care by socio-economic characteristics and states/UTs. The mean out-of-pocket expenditure for out-patient care during the last 30 days prior to the survey is ₹ 1,061; it is higher for the elderly age 60 and above (₹ 1,149) compared with the older adults age 45-59 (₹ 977). Older adults in age 45 and above from urban areas spend more than those from rural areas; similarly, older adult men (₹ 1,224) spend more on out-patient care than women (₹ 957). The mean out-of-pocket expenditure on out-patient care is higher among those who are currently married compared to those who are divorced/separated/deserted and widowed. The mean expenditure is higher for those living with their spouse and children than those having other types of living arrangements. Moreover, with the increase in education and MPCE quintile, the mean out-of-pocket expenditure increases. The mean expenditure on out-patient care for older adults age 45 and above in the richest quintile is three times higher than those in the poorest quintile. The mean out-of-pocket expenditure is twice higher among older adults age 45 and above with 10 or more years of schooling compared to those who never attended school. More importantly, the socio-economic differences in mean health expenditure are much more pronounced for elderly age 60 and above than older adults age 45-49.

**Table 13.13 Mean out-of-pocket expenditure (in ₹) of older adults on out-patient care in one month prior to survey by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                   | Age 45-59*       | Age ≥60          | Total            |
|----------------------------------------------|------------------|------------------|------------------|
|                                              | Mean expenditure | Mean expenditure | Mean expenditure |
| <b>Place of residence</b>                    |                  |                  |                  |
| Rural                                        | 957              | 1,089            | 1,023            |
| Urban                                        | 1,021            | 1,299            | 1,152            |
| <b>Sex</b>                                   |                  |                  |                  |
| Male                                         | 1,046            | 1,352            | 1,224            |
| Female                                       | 944              | 975              | 957              |
| <b>Marital status</b>                        |                  |                  |                  |
| Currently married                            | 980              | 1,298            | 1,109            |
| Widowed                                      | 978              | 915              | 929              |
| Divorced/Separated/Deserted/Others           | 847              | 974              | 898              |
| <b>Living arrangement</b>                    |                  |                  |                  |
| Living alone                                 | 802              | 756              | 769              |
| Living with spouse and / or others           | 916              | 983              | 957              |
| Living with spouse and children              | 986              | 1,448            | 1,146            |
| Living with children and others              | 1,037            | 983              | 997              |
| Living with others only                      | 880              | 793              | 817              |
| <b>Education</b>                             |                  |                  |                  |
| No schooling                                 | 847              | 870              | 860              |
| Less than 5 years complete                   | 894              | 924              | 909              |
| 5-9 years complete                           | 1,096            | 1,301            | 1,179            |
| 10 or more years complete                    | 1,181            | 2,376            | 1,675            |
| <b>Work status</b>                           |                  |                  |                  |
| Currently working                            | 863              | 946              | 890              |
| Worked in the past but currently not working | 1,228            | 1,309            | 1,288            |
| Never worked                                 | 1,064            | 1,067            | 1,065            |
| <b>MPCE quintile</b>                         |                  |                  |                  |
| Poorest                                      | 582              | 627              | 606              |
| Poorer                                       | 696              | 828              | 764              |
| Middle                                       | 789              | 916              | 852              |
| Richer                                       | 1,023            | 1,164            | 1,094            |
| Richest                                      | 1,553            | 2,180            | 1,827            |
| <b>Total</b>                                 | <b>977</b>       | <b>1,149</b>     | <b>1,061</b>     |

\*Including spouse irrespective of age.

The mean expenditure on out-patient care is higher than the national average in nineteen states/UTs of India (Table 13.14). Twenty-two states, including seven north-eastern states, reported an average expenditure of more than ₹ 1,000 on out-patient care. The highest mean expenditure is reported in Arunachal Pradesh (₹ 10,368), followed by Himachal Pradesh (₹ 3,477), Nagaland (₹ 3,288), and Meghalaya (₹ 3,152), and the lowest mean expenditure is reported in Tamil Nadu (₹ 641), followed by Gujarat (₹ 644) and Puducherry (₹ 645).

**Table 13.14 Mean out-of-pocket expenditure (in ₹) of older adults on out-patient care in one month prior to survey, states/UTs, LASI Wave 1, 2017-18**

| States/ Union Territory   | Age 45-59*       | Age ≥ 60         | Total            |
|---------------------------|------------------|------------------|------------------|
|                           | Mean expenditure | Mean expenditure | Mean expenditure |
| <b>India</b>              | <b>977</b>       | <b>1,149</b>     | <b>1,061</b>     |
| <b>North</b>              |                  |                  |                  |
| Chandigarh                | 1,016            | 1,170            | 1,078            |
| Delhi                     | 1,943            | 1,066            | 1,536            |
| Haryana                   | 716              | 862              | 788              |
| Himachal Pradesh          | 949              | 6,116            | 3,477            |
| Jammu & Kashmir           | 1,305            | 1,565            | 1,435            |
| Punjab                    | 804              | 651              | 726              |
| Rajasthan                 | 1,132            | 821              | 963              |
| Uttarakhand               | 926              | 975              | 952              |
| <b>Central</b>            |                  |                  |                  |
| Chhattisgarh              | 844              | 962              | 887              |
| Madhya Pradesh            | 1,220            | 1,896            | 1,532            |
| Uttar Pradesh             | 756              | 830              | 797              |
| <b>East</b>               |                  |                  |                  |
| Bihar                     | 962              | 1,172            | 1,081            |
| Jharkhand                 | 1,108            | 1,009            | 1,054            |
| Odisha                    | 906              | 1,310            | 1,109            |
| West Bengal               | 742              | 1,257            | 965              |
| <b>Northeast</b>          |                  |                  |                  |
| Arunachal Pradesh         | 14,917           | 2,184            | 10,368           |
| Assam                     | 1,466            | 1,366            | 1,426            |
| Manipur                   | 2,084            | 3,073            | 2,541            |
| Meghalaya                 | 2,994            | 3,293            | 3,152            |
| Mizoram                   | 3,206            | 2,055            | 2,574            |
| Nagaland                  | 5,665            | 1,932            | 3,288            |
| Tripura                   | 1,075            | 1,581            | 1,304            |
| <b>West</b>               |                  |                  |                  |
| Dadra & Nagar Haveli      | 838              | 890              | 863              |
| Daman & Diu               | 1,054            | 1,412            | 1,240            |
| Goa                       | 1,847            | 1,164            | 1,455            |
| Gujarat                   | 636              | 652              | 644              |
| Maharashtra               | 824              | 1,119            | 985              |
| <b>South</b>              |                  |                  |                  |
| Andaman & Nicobar Islands | 715              | 1,382            | 1,061            |
| Andhra Pradesh            | 1,790            | 1,527            | 1,671            |
| Karnataka                 | 1,018            | 1,044            | 1,028            |
| Kerala                    | 774              | 847              | 815              |
| Lakshadweep               | 2,603            | 1,730            | 2,131            |
| Puducherry                | 695              | 597              | 645              |
| Tamil Nadu                | 635              | 648              | 641              |
| Telangana                 | 1,973            | 1,350            | 1,680            |

\*Including spouse irrespective of age.

## 13.4 HEALTH INSURANCE COVERAGE

Like insurance coverage at the household level, the LASI survey also asked questions on insurance coverage at the individual level. Table 13.15 presents the health insurance coverage (public or private) among older adults age 45 and above by background characteristics in India. Overall, a fifth (21%) of the older adults age 45 and above are covered by health insurance, and; insurance coverage is higher among older adults age 45-59 (23%) than among the elderly age 60 and above (18%). A higher proportion of older adult men in age 45 and above have health insurance than women in the same age group; those from rural areas are more likely to have health insurance than urban areas. Further, a higher proportion of older adults age 45 and above living with their spouses and children (22%) have insurance compared to those living with others (14%). Older adults age 45 and above belonging to Scheduled tribes have higher insurance coverage than other caste categories. About a quarter (24%) of older adults age 45 and above who were working at the time of the survey are enrolled in insurance compared to 20% of those who worked in the past and 15% who never worked. Health insurance coverage does not show much variation by education and household MPCE quintile.

**Table 13.15 Percentage of older adults who were covered by health insurance according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                   | Health Insurance coverage |             |             | Number        |
|----------------------------------------------|---------------------------|-------------|-------------|---------------|
|                                              | Age 45-59*                | Age ≥60     | Total       |               |
| <b>Place of residence</b>                    |                           |             |             |               |
| Rural                                        | 23.7                      | 18.6        | 21.3        | 46,164        |
| Urban                                        | 21.0                      | 17.3        | 19.4        | 25,357        |
| <b>Sex</b>                                   |                           |             |             |               |
| Male                                         | 23.7                      | 19.7        | 21.6        | 30,224        |
| Female                                       | 22.3                      | 16.9        | 20.1        | 41,297        |
| <b>Marital status</b>                        |                           |             |             |               |
| Currently married                            | 23.1                      | 19.8        | 21.9        | 54,826        |
| Widowed                                      | 20.9                      | 15.6        | 16.9        | 14,455        |
| Divorced/Separated/Deserted/Others           | 19.8                      | 18.8        | 19.4        | 2,240         |
| <b>Living arrangement</b>                    |                           |             |             |               |
| Living alone                                 | 22.5                      | 18.3        | 19.3        | 2,292         |
| Living with spouse and / or others           | 24.7                      | 21.7        | 22.9        | 10,331        |
| Living with spouse and children              | 23.1                      | 19.0        | 21.8        | 43,617        |
| Living with children and others              | 20.7                      | 15.8        | 17.2        | 12,469        |
| Living with others only                      | 15.5                      | 13.0        | 13.9        | 2,812         |
| <b>Religion</b>                              |                           |             |             |               |
| Hindu                                        | 23.5                      | 18.6        | 21.2        | 52,415        |
| Muslim                                       | 18.4                      | 12.8        | 15.9        | 8,582         |
| Christian                                    | 35.8                      | 40.6        | 37.9        | 7,164         |
| Others                                       | 11.0                      | 8.3         | 9.7         | 3,360         |
| <b>Caste/tribe</b>                           |                           |             |             |               |
| Scheduled tribe                              | 34.3                      | 29.2        | 32.1        | 12,396        |
| Scheduled caste                              | 20.7                      | 17.8        | 19.4        | 11,949        |
| Other backward class                         | 24.4                      | 19.4        | 22.1        | 26,900        |
| None of the above                            | 17.8                      | 13.4        | 15.7        | 20,276        |
| <b>Education</b>                             |                           |             |             |               |
| No schooling                                 | 20.0                      | 17.0        | 18.4        | 32,937        |
| Less than 5 years complete                   | 29.4                      | 21.5        | 25.5        | 7,972         |
| 5-9 years complete                           | 24.1                      | 20.3        | 22.6        | 16,735        |
| 10 or more years complete                    | 23.9                      | 18.1        | 21.9        | 13,877        |
| <b>Work status</b>                           |                           |             |             |               |
| Currently working                            | 25.8                      | 21.2        | 24.4        | 32,638        |
| Worked in the past but currently not working | 21.9                      | 19.5        | 20.1        | 17,776        |
| Never worked                                 | 17.0                      | 12.8        | 15.2        | 21,107        |
| <b>MPCE quintile</b>                         |                           |             |             |               |
| Poorest                                      | 20.2                      | 18.5        | 19.4        | 14,011        |
| Poorer                                       | 21.3                      | 17.7        | 19.6        | 14,399        |
| Middle                                       | 22.9                      | 19.4        | 21.3        | 14,394        |
| Richer                                       | 25.4                      | 18.2        | 22.2        | 14,544        |
| Richest                                      | 24.4                      | 17.2        | 21.4        | 14,173        |
| <b>Total</b>                                 | <b>22.8</b>               | <b>18.2</b> | <b>20.7</b> | <b>71,521</b> |

\* Including spouse irrespective of age.

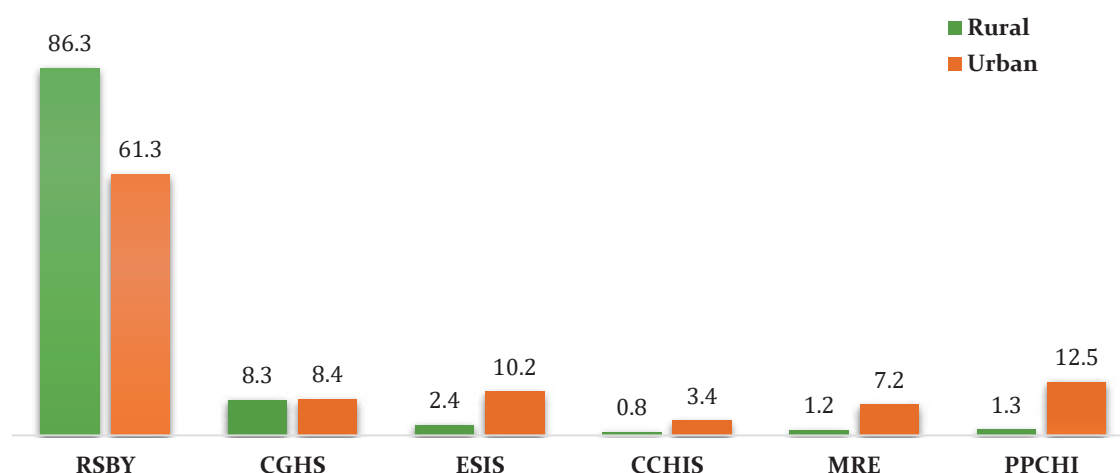
**Table 13.16 Percentage of older adults who were covered by health insurance, states/UTs, LASI Wave 1, 2017-18**

| States/ Union Territory   | Health insurance coverage |             |             | Number        |
|---------------------------|---------------------------|-------------|-------------|---------------|
|                           | Age 45-59*                | Age≥60      | Total       |               |
| <b>India</b>              | <b>22.8</b>               | <b>18.2</b> | <b>20.7</b> | <b>71,521</b> |
| <b>North</b>              |                           |             |             |               |
| Chandigarh                | 11.5                      | 15.6        | 13.1        | 989           |
| Delhi                     | 10.6                      | 11.3        | 10.8        | 1,310         |
| Haryana                   | 7.6                       | 5.5         | 6.6         | 1,888         |
| Himachal Pradesh          | 18.0                      | 13.5        | 15.8        | 1,376         |
| Jammu & Kashmir           | 1.0                       | 0.2         | 0.6         | 1,607         |
| Punjab                    | 5.3                       | 5.2         | 5.3         | 2,094         |
| Rajasthan                 | 40.5                      | 39.6        | 40.1        | 2,225         |
| Uttarakhand               | 19.3                      | 20.9        | 20.1        | 1,352         |
| <b>Central</b>            |                           |             |             |               |
| Chhattisgarh              | 47.0                      | 46.6        | 46.8        | 2,048         |
| Madhya Pradesh            | 3.5                       | 2.9         | 3.2         | 2,885         |
| Uttar Pradesh             | 1.6                       | 2.2         | 1.9         | 4,542         |
| <b>East</b>               |                           |             |             |               |
| Bihar                     | 1.0                       | 1.3         | 1.2         | 3,506         |
| Jharkhand                 | 23.9                      | 21.7        | 22.8        | 2,451         |
| Odisha                    | 62.6                      | 58.8        | 61.0        | 2,884         |
| West Bengal               | 22.6                      | 16.5        | 20.1        | 3,910         |
| <b>Northeast</b>          |                           |             |             |               |
| Arunachal Pradesh         | 6.7                       | 6.0         | 6.5         | 1,213         |
| Assam                     | 56.5                      | 45.7        | 52.6        | 2,352         |
| Manipur                   | 1.5                       | 0.7         | 1.1         | 1,356         |
| Meghalaya                 | 44.7                      | 46.3        | 45.4        | 965           |
| Mizoram                   | 64.0                      | 66.5        | 65.1        | 1,243         |
| Nagaland                  | 0.9                       | 0.5         | 0.7         | 1,313         |
| Tripura                   | 28.2                      | 26.6        | 27.6        | 1,181         |
| <b>West</b>               |                           |             |             |               |
| Dadra & Nagar Haveli      | 62.4                      | 57.7        | 60.6        | 1,053         |
| Daman & Diu               | 16.5                      | 16.7        | 16.6        | 966           |
| Goa                       | 46.4                      | 41.8        | 44.3        | 1,403         |
| Gujarat                   | 39.4                      | 31.5        | 35.8        | 2,262         |
| Maharashtra               | 6.6                       | 6.4         | 6.5         | 3,939         |
| <b>South</b>              |                           |             |             |               |
| Andaman & Nicobar Islands | 0.0                       | 0.3         | 0.1         | 1,238         |
| Andhra Pradesh            | 39.0                      | 36.0        | 37.8        | 2,650         |
| Karnataka                 | 24.1                      | 19.5        | 22.3        | 2,378         |
| Kerala                    | 42.9                      | 38.1        | 40.4        | 2,456         |
| Lakshadweep               | 10.8                      | 11.2        | 11.0        | 1,127         |
| Puducherry                | 8.4                       | 6.5         | 7.5         | 1,414         |
| Tamil Nadu                | 44.3                      | 33.7        | 39.5        | 3,514         |
| Telangana                 | 35.5                      | 31.6        | 33.8        | 2,431         |

\* Including spouse irrespective of age.

Across states/UTs of India more than half of the older adults age 45 and above have health insurance in Mizoram (65%), Odisha (61%), Dadra & Nagar Haveli (61%), and Assam (53%). The presence of strong state-sponsored schemes may explain the high rates in some states regarding health insurance. Contrastingly, less than 5% of the older adults age 45 and above have health insurance in Andaman & Nicobar Islands (0.1%), Jammu & Kashmir (0.6%), Nagaland (0.7%), Bihar (1.2%), Manipur (1.1%), Uttar Pradesh (1.9%), and Madhya Pradesh (3.2%) (Table 13.16).

**Figure 13.4 Percent coverage of types of health insurance among older adults age 45 and above by place of residence, India, LASI Wave 1, 2017-18**



Note

*Respondents are covered with more than one insurance scheme, so the sum may exceed 100 percent*

*RSBY: Rashtriya Swasthya Bima Yojana, CGHS: Central Government Health Scheme, ESIS: Employees State Insurance Scheme, CCHIS: Community/cooperative Health Insurance Schemes, MRE: Medical Reimbursement from an Employer, PPCHI: Privately Purchased Commercial Health Insurance.*

There are rural/urban differences in health insurance coverage among older adults age 45 and above across India (Figure 13.4). Among those who have any type of health insurance, 86% in rural and 61% in urban areas are covered under the Rashtriya Swasthya Bima Yojana. Moreover, the proportion of older adults age 45 and above covered under private schemes (such as privately purchased commercial health insurance) is higher in urban areas (13%) than in rural areas (1%). The coverage of Community Cooperative Health Insurance Schemes in both rural and urban areas is negligible.

#### Key findings: health financing and health insurance coverage

- The mean out-of-pocket expenditure among older adults for the last inpatient care in public facility is ₹ 8,877, whereas it is ₹ 52,022 in private facility.
- The mean expenditure for outpatient care during the last 30 days is ₹ 1,061; it is higher for the elderly age 60 and above (₹ 1,149) than older adults age 45-59 (₹ 977).
- Twenty-one percent of older adults in age group 45 and above are covered under health insurance at the national level. More than half of the older adults age 45 and above have health insurance in Mizoram (65%), Odisha (61%), Dadra & Nagar Haveli (61%), and Assam (53%).



## 14. FAMILY AND SOCIAL NETWORKS

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Social support, social networks, and social ties are connected to a variety of positive health outcomes and measures of wellbeing. A detailed profile of social networks and social interactions is essential to understand the wellbeing of older people, as social bonds help older people to remain healthy and happy. Despite the profound benefits for ageing adults, social networks and social ties have often been neglected in large surveys, especially in developing countries. Social care and support begins with the family, and which is the primary social group that individuals relate to on a personal level. LASI focuses a great deal on social networks and social support because less social interaction and the lack of social network support can have adverse effects on the health and overall wellbeing of the elderly (Berkman et al., 2012; Ray and Sekher, 2016). Therefore, detailed information on the family and social connectedness, living arrangements, intimacy and relationships, and social support provided to and received by older adults has been gathered as part of LASI.

This chapter discusses the important aspects of the living arrangements and life satisfaction, social and family connectedness, social support, instrumental care provided by older adults, and ill-treatment experienced by the elderly both inside and outside of their households.

### 14.1 LIVING ARRANGEMENTS

Living arrangements are a reflection of an individual's social support and is an important determinant of overall life satisfaction and quality of life. Living with a family is considered as the most preferred living arrangements, especially for older people. In countries like India, children and families have the prime responsibility of taking care of older adults. However, with the changing family structure and shifting socio-economic milieu, the living arrangements of the elderly are changing, and caregiving is becoming a challenge. Older people living alone or only with their spouse has increased in recent years. Furthermore, the shift in the age composition of the population compels us to reassess the living arrangements, family structure, and social support for older adults. In brief, the traditional living arrangements of the elderly in India has undergone a substantial change with declining fertility, increased life expectancy, and changing family structures and lifestyles. In the Indian context, a large number of elderly men live with their spouses, whereas the majority of elderly women are widows either living alone or with their children.

LASI attempted to understand the family and supporting social networks, including the multigenerational family structure, intimacy, and relationships. The survey gathered information on living arrangements and whether older people are satisfied with their current living arrangements, and if not, whether they intended to change their living arrangements in the future.

#### *14.1.1 Types of living arrangements*

Tables 14.1 and 14.2 present the living arrangements of older adults by background characteristics such as sex, marital status, religion, caste, education, work status, place of residence, and economic status for two age groups: older adults age 45–59 and the elderly age 60 years and above. The most common type of living arrangements amongst the respondents across all of the categories is living with a spouse and children. Around 41% of the elderly age 60 and above and 74% of older adults age 45–59 live with their spouses and children, and around 6% of the elderly live alone. More than one-fourth of the elderly live with their children without a spouse, 74% of the widowed elderly live with their children, and 9% of the elderly women live alone, compared to 3% of the elderly men. More than half of the divorced, separated, or never married respondents live with other family members in both age groups. Amongst the elderly, 19% of the divorced, separated, or deserted live alone.



Religious differences in living arrangements are small, however, a relatively higher proportion of Christian respondents live alone compared to respondents from other religions.

Tables 14.3 and 14.4 present the type of current living arrangement by states/UTs in India for the elderly age 60 and above and older adults age 45–59. Amongst the elderly age 60 and above, living alone is the highest in the state of Tamil Nadu (15%) followed by Nagaland (13%) and Telangana (11%). More than half of the elderly respondents in Delhi, Jammu & Kashmir, and Punjab are living with spouse and children.

**Table 14.1 Percent distribution of older adults age 45-59\* by type of current living arrangement by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics                | Living alone | Living with spouse | Living with spouse and children | Living with children (without spouse) | Living with others | Number        |
|-------------------------------------------|--------------|--------------------|---------------------------------|---------------------------------------|--------------------|---------------|
| <b>Place of residence</b>                 |              |                    |                                 |                                       |                    |               |
| Rural                                     | 1.6          | 12.5               | 74.4                            | 9.1                                   | 2.4                | 25,809        |
| Urban                                     | 1.0          | 11.4               | 73.7                            | 9.9                                   | 4.0                | 14,977        |
| <b>Sex</b>                                |              |                    |                                 |                                       |                    |               |
| Male                                      | 0.9          | 12.0               | 80.8                            | 3.5                                   | 2.8                | 15,471        |
| Female                                    | 1.7          | 12.3               | 70.2                            | 12.8                                  | 3.0                | 25,315        |
| <b>Marital status</b>                     |              |                    |                                 |                                       |                    |               |
| Currently married                         | 0.2          | 13.9               | 84.8                            | 0.8                                   | 0.3                | 35,476        |
| Widowed                                   | 9.5          | -                  | -                               | 81.7                                  | 8.7                | 3,874         |
| <b>Divorced/Separated/Deserted/Others</b> | 10.3         | -                  | -                               | 31.7                                  | 58.0               | 1,436         |
| <b>Religion</b>                           |              |                    |                                 |                                       |                    |               |
| Hindu                                     | 1.4          | 12.7               | 73.7                            | 9.5                                   | 2.7                | 29,936        |
| Muslim                                    | 1.1          | 9.7                | 79.3                            | 8.2                                   | 1.7                | 4,936         |
| Christian                                 | 2.1          | 11.5               | 61.9                            | 10.1                                  | 14.4               | 4,065         |
| Others                                    | 1.1          | 7.7                | 77.9                            | 10.0                                  | 3.3                | 1,849         |
| <b>Caste</b>                              |              |                    |                                 |                                       |                    |               |
| Scheduled tribe                           | 1.5          | 11.5               | 72.8                            | 11.4                                  | 2.9                | 7,336         |
| Scheduled caste                           | 1.8          | 10.5               | 73.3                            | 11.7                                  | 2.7                | 6,906         |
| Other backward class                      | 1.4          | 12.5               | 74.4                            | 8.8                                   | 2.9                | 15,298        |
| None of the above                         | 1.2          | 13.0               | 74.8                            | 7.9                                   | 3.2                | 11,246        |
| <b>Education</b>                          |              |                    |                                 |                                       |                    |               |
| No schooling                              | 1.8          | 12.9               | 69.8                            | 12.9                                  | 2.7                | 16,322        |
| Less than 5 years complete                | 1.4          | 11.9               | 74.5                            | 9.7                                   | 2.5                | 4,273         |
| 5-9 years complete                        | 1.1          | 10.7               | 78.4                            | 7.6                                   | 2.3                | 10,892        |
| 10 or more years complete                 | 0.9          | 12.5               | 78.0                            | 4.3                                   | 4.3                | 9,299         |
| <b>Work status</b>                        |              |                    |                                 |                                       |                    |               |
| Currently working                         | 1.5          | 12.2               | 75.6                            | 8.0                                   | 2.7                | 23,683        |
| Worked in past but currently not working  | 1.5          | 12.7               | 66.8                            | 15.7                                  | 3.3                | 4,587         |
| Never worked                              | 1.1          | 11.9               | 74.1                            | 9.5                                   | 3.3                | 12,516        |
| <b>MPCE quintile</b>                      |              |                    |                                 |                                       |                    |               |
| Poorest                                   | 0.4          | 6.3                | 79.3                            | 11.2                                  | 2.7                | 7,674         |
| Poorer                                    | 0.8          | 8.7                | 76.8                            | 10.4                                  | 3.3                | 8,053         |
| Middle                                    | 1.1          | 11.0               | 75.9                            | 9.4                                   | 2.5                | 8,121         |
| Richer                                    | 1.5          | 13.4               | 72.8                            | 8.2                                   | 4.2                | 8,516         |
| Richest                                   | 3.3          | 21.8               | 65.5                            | 7.5                                   | 1.9                | 8,422         |
| <b>Total</b>                              | <b>1.4</b>   | <b>12.2</b>        | <b>74.2</b>                     | <b>9.4</b>                            | <b>2.9</b>         | <b>40,786</b> |

\* Including spouse irrespective of age. “-” indicates less number of cases/no cases.

**Table 14.2 Percent distribution of elderly age 60 and above by type of current living arrangement by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Living alone | Living with spouse | Living with spouse and children | Living with children (without spouse) | Living with others | Number        |
|------------------------------------------|--------------|--------------------|---------------------------------|---------------------------------------|--------------------|---------------|
| <b>Place of residence</b>                |              |                    |                                 |                                       |                    |               |
| Rural                                    | 6.3          | 21.5               | 40.6                            | 25.6                                  | 6.0                | 20,725        |
| Urban                                    | 4.1          | 17.5               | 40.7                            | 32.6                                  | 5.0                | 10,739        |
| <b>Sex</b>                               |              |                    |                                 |                                       |                    |               |
| Male                                     | 2.5          | 26.0               | 54.4                            | 13.2                                  | 3.9                | 15,098        |
| Female                                   | 8.5          | 15.2               | 28.2                            | 40.7                                  | 7.4                | 16,366        |
| <b>Marital status</b>                    |              |                    |                                 |                                       |                    |               |
| Currently married                        | 0.2          | 33.0               | 65.9                            | 0.6                                   | 0.3                | 19,920        |
| Widowed                                  | 14.3         | -                  | -                               | 73.5                                  | 12.2               | 10,719        |
| Divorced/Separated/Deserted/Others       | 19.1         | -                  | -                               | 29.5                                  | 51.4               | 825           |
| <b>Religion</b>                          |              |                    |                                 |                                       |                    |               |
| Hindu                                    | 5.8          | 20.8               | 40.1                            | 27.6                                  | 5.7                | 23,037        |
| Muslim                                   | 4.0          | 17.8               | 44.7                            | 28.1                                  | 5.4                | 3,731         |
| Christian                                | 10.3         | 23.3               | 31.5                            | 26.8                                  | 8.0                | 3,150         |
| Others                                   | 3.5          | 15.9               | 46.6                            | 27.4                                  | 6.6                | 1,546         |
| <b>Caste</b>                             |              |                    |                                 |                                       |                    |               |
| Scheduled tribe                          | 5.1          | 22.1               | 38.0                            | 27.3                                  | 7.4                | 5,173         |
| Scheduled caste                          | 6.0          | 19.5               | 39.4                            | 28.7                                  | 6.5                | 5,140         |
| Other backward class                     | 6.3          | 21.5               | 39.8                            | 27.1                                  | 5.4                | 11,886        |
| None of the above                        | 4.7          | 18.5               | 43.6                            | 28.0                                  | 5.3                | 9,265         |
| <b>Education</b>                         |              |                    |                                 |                                       |                    |               |
| No schooling                             | 7.2          | 18.8               | 34.0                            | 32.8                                  | 7.1                | 16,889        |
| Less than 5 years complete               | 5.4          | 20.9               | 43.4                            | 25.7                                  | 4.7                | 3,781         |
| 5-9 years complete                       | 3.5          | 21.6               | 49.6                            | 21.1                                  | 4.2                | 6,017         |
| 10 or more years complete                | 2.5          | 24.4               | 53.3                            | 16.8                                  | 3.0                | 4,777         |
| <b>Work status</b>                       |              |                    |                                 |                                       |                    |               |
| Currently working                        | 5.3          | 25.9               | 49.5                            | 14.9                                  | 4.4                | 9,307         |
| Worked in past but currently not working | 6.3          | 19.9               | 38.9                            | 29.1                                  | 5.8                | 13,377        |
| Never worked                             | 5.2          | 14.5               | 33.0                            | 40.1                                  | 7.2                | 8,780         |
| <b>MPCE quintile</b>                     |              |                    |                                 |                                       |                    |               |
| Poorest                                  | 5.5          | 13.4               | 44.4                            | 30.0                                  | 6.8                | 6,484         |
| Poorer                                   | 3.7          | 14.5               | 44.1                            | 30.8                                  | 6.9                | 6,477         |
| Middle                                   | 5.6          | 21.4               | 41.8                            | 25.8                                  | 5.5                | 6,416         |
| Richer                                   | 6.7          | 23.3               | 37.8                            | 27.7                                  | 4.5                | 6,170         |
| Richest                                  | 7.5          | 32.4               | 32.7                            | 22.8                                  | 4.6                | 5,917         |
| <b>Total</b>                             | <b>5.7</b>   | <b>20.3</b>        | <b>40.6</b>                     | <b>27.6</b>                           | <b>5.7</b>         | <b>31,464</b> |

“-“indicates less number of cases/no cases.

**Table 14.3 Percent distribution of older adults age 45-59\* by types of current living arrangement, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Living alone | Living with spouse | Living with spouse and children | Living with children (without spouse) | Living with others | Number        |
|---------------------------|--------------|--------------------|---------------------------------|---------------------------------------|--------------------|---------------|
| <b>India</b>              | <b>1.4</b>   | <b>12.2</b>        | <b>74.2</b>                     | <b>9.4</b>                            | <b>2.9</b>         | <b>40,786</b> |
| <b>North</b>              |              |                    |                                 |                                       |                    |               |
| Chandigarh                | 1.2          | 7.2                | 77.7                            | 10.9                                  | 2.9                | 632           |
| Delhi                     | 0.6          | 4.1                | 84.1                            | 9.8                                   | 1.5                | 824           |
| Haryana                   | 0.8          | 4.0                | 83.8                            | 10.3                                  | 1.2                | 1,050         |
| Himachal Pradesh          | 0.8          | 11.7               | 75.4                            | 10.0                                  | 2.1                | 767           |
| Jammu & Kashmir           | 0.2          | 2.8                | 88.4                            | 7.5                                   | 1.1                | 882           |
| Punjab                    | 1.0          | 7.9                | 78.5                            | 10.7                                  | 1.9                | 1,120         |
| Rajasthan                 | 0.3          | 12.4               | 78.5                            | 7.2                                   | 1.6                | 1,166         |
| Uttarakhand               | 2.4          | 18.3               | 65.1                            | 11.4                                  | 2.9                | 717           |
| <b>Central</b>            |              |                    |                                 |                                       |                    |               |
| Chhattisgarh              | 2.4          | 12.4               | 72.3                            | 10.4                                  | 2.5                | 1,275         |
| Madhya Pradesh            | 1.1          | 12.9               | 75.9                            | 7.3                                   | 2.9                | 1,601         |
| Uttar Pradesh             | 0.9          | 7.7                | 79.3                            | 10.3                                  | 1.8                | 2,398         |
| <b>East</b>               |              |                    |                                 |                                       |                    |               |
| Bihar                     | 1.8          | 11.4               | 75.4                            | 9.3                                   | 2.2                | 1,712         |
| Jharkhand                 | 1.0          | 9.5                | 79.9                            | 7.7                                   | 1.9                | 1,296         |
| Odisha                    | 1.7          | 12.2               | 74.9                            | 7.8                                   | 3.4                | 1,680         |
| West Bengal               | 1.6          | 13.4               | 76.0                            | 6.2                                   | 2.8                | 2,389         |
| <b>Northeast</b>          |              |                    |                                 |                                       |                    |               |
| Arunachal Pradesh         | 2.5          | 12.6               | 73.5                            | 8.9                                   | 2.5                | 897           |
| Assam                     | 1.8          | 5.6                | 79.5                            | 10.3                                  | 2.9                | 1,550         |
| Manipur                   | 2.5          | 10.6               | 74.5                            | 8.2                                   | 4.2                | 763           |
| Meghalaya                 | 1.1          | 6.5                | 72.0                            | 15.7                                  | 4.6                | 557           |
| Mizoram                   | 2.3          | 6.2                | 76.9                            | 9.2                                   | 5.4                | 715           |
| Nagaland                  | 3.9          | 14.2               | 66.2                            | 12.3                                  | 3.5                | 708           |
| Tripura                   | 0.8          | 12.8               | 74.2                            | 9.8                                   | 2.4                | 734           |
| <b>West</b>               |              |                    |                                 |                                       |                    |               |
| Dadra & Nagar Haveli      | 1.2          | 13.1               | 74.2                            | 8.2                                   | 3.3                | 639           |
| Daman & Diu               | 1.6          | 7.4                | 75.1                            | 10.1                                  | 5.8                | 557           |
| Goa                       | 1.0          | 9.1                | 78.7                            | 8.3                                   | 2.9                | 790           |
| Gujarat                   | 1.0          | 13.3               | 73.3                            | 9.4                                   | 3.1                | 1,350         |
| Maharashtra               | 1.4          | 10.0               | 75.9                            | 9.3                                   | 3.4                | 2,183         |
| <b>South</b>              |              |                    |                                 |                                       |                    |               |
| Andaman & Nicobar Islands | 2.2          | 11.9               | 73.2                            | 10.4                                  | 2.4                | 721           |
| Andhra Pradesh            | 2.5          | 23.5               | 61.7                            | 10.0                                  | 2.3                | 1,574         |
| Karnataka                 | 0.7          | 11.2               | 75.1                            | 9.9                                   | 3.2                | 1,416         |
| Kerala                    | 1.3          | 15.8               | 70.3                            | 7.8                                   | 4.8                | 1,288         |
| Lakshadweep               | 1.2          | 7.1                | 71.2                            | 13.7                                  | 6.8                | 637           |
| Puducherry                | 2.0          | 9.3                | 63.5                            | 19.1                                  | 6.2                | 788           |
| Tamil Nadu                | 2.8          | 18.9               | 59.2                            | 13.8                                  | 5.4                | 1,996         |
| Telangana                 | 2.5          | 17.7               | 64.8                            | 11.2                                  | 3.8                | 1,414         |

\* Including spouse irrespective of age

**Table 14.4 Percent distribution of elderly age 60 and above by type of current living arrangement, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Living alone | Living with spouse | Living with spouse and children | Living with children (without spouse) | Living with others | Number        |
|---------------------------|--------------|--------------------|---------------------------------|---------------------------------------|--------------------|---------------|
| <b>India</b>              | <b>5.7</b>   | <b>20.3</b>        | <b>40.6</b>                     | <b>27.6</b>                           | <b>5.7</b>         | <b>31,464</b> |
| <b>North</b>              |              |                    |                                 |                                       |                    |               |
| Chandigarh                | 2.7          | 19.1               | 43.8                            | 30.1                                  | 4.3                | 394           |
| Delhi                     | 1.7          | 10.3               | 55.6                            | 28.2                                  | 4.3                | 495           |
| Haryana                   | 2.5          | 11.2               | 48.0                            | 32.9                                  | 5.4                | 848           |
| Himachal Pradesh          | 1.8          | 14.5               | 46.2                            | 30.6                                  | 6.8                | 621           |
| Jammu & Kashmir           | 1.2          | 6.0                | 58.8                            | 29.8                                  | 4.3                | 731           |
| Punjab                    | 2.2          | 12.6               | 50.0                            | 28.1                                  | 7.1                | 1,004         |
| Rajasthan                 | 4.6          | 22.7               | 43.4                            | 24.5                                  | 4.9                | 1,078         |
| Uttarakhand               | 5.9          | 22.7               | 38.1                            | 23.5                                  | 9.8                | 641           |
| <b>Central</b>            |              |                    |                                 |                                       |                    |               |
| Chhattisgarh              | 6.8          | 24.8               | 36.3                            | 26.3                                  | 5.9                | 780           |
| Madhya Pradesh            | 6.1          | 24.0               | 42.3                            | 21.1                                  | 6.5                | 1,313         |
| Uttar Pradesh             | 4.3          | 16.4               | 44.1                            | 28.8                                  | 6.3                | 2,169         |
| East                      |              |                    |                                 |                                       |                    |               |
| Bihar                     | 2.9          | 22.5               | 48.5                            | 20.0                                  | 6.0                | 1,808         |
| Jharkhand                 | 3.7          | 19.3               | 46.7                            | 26.8                                  | 3.6                | 1,168         |
| Odisha                    | 5.7          | 20.5               | 41.4                            | 26.8                                  | 5.6                | 1,237         |
| West Bengal               | 4.7          | 19.5               | 38.1                            | 33.4                                  | 4.3                | 1,544         |
| <b>Northeast</b>          |              |                    |                                 |                                       |                    |               |
| Arunachal Pradesh         | 5.4          | 18.7               | 41.1                            | 30.9                                  | 4.0                | 318           |
| Assam                     | 3.7          | 9.0                | 46.7                            | 37.5                                  | 3.1                | 816           |
| Manipur                   | 2.7          | 12.6               | 49.2                            | 29.4                                  | 6.1                | 606           |
| Meghalaya                 | 3.5          | 7.2                | 43.6                            | 39.6                                  | 6.2                | 412           |
| Mizoram                   | 3.6          | 13.2               | 48.7                            | 27.1                                  | 7.4                | 531           |
| Nagaland                  | 13.0         | 20.3               | 44.3                            | 18.6                                  | 3.7                | 608           |
| Tripura                   | 5.0          | 20.0               | 43.6                            | 27.1                                  | 4.4                | 461           |
| <b>West</b>               |              |                    |                                 |                                       |                    |               |
| Dadra & Nagar Haveli      | 3.8          | 20.0               | 43.4                            | 28.8                                  | 4.1                | 451           |
| Daman & Diu               | 9.0          | 14.6               | 43.2                            | 23.9                                  | 9.4                | 434           |
| Goa                       | 4.2          | 13.2               | 44.1                            | 32.0                                  | 6.6                | 637           |
| Gujarat                   | 4.6          | 20.2               | 41.8                            | 28.9                                  | 4.5                | 991           |
| Maharashtra               | 5.0          | 17.4               | 44.3                            | 28.2                                  | 5.2                | 1,790         |
| <b>South</b>              |              |                    |                                 |                                       |                    |               |
| Andaman & Nicobar Islands | 3.3          | 22.3               | 42.3                            | 27.4                                  | 4.7                | 523           |
| Andhra Pradesh            | 9.0          | 33.5               | 28.9                            | 25.0                                  | 3.8                | 1,105         |
| Karnataka                 | 5.1          | 19.2               | 36.4                            | 35.1                                  | 4.3                | 1,004         |
| Kerala                    | 5.1          | 24.0               | 35.7                            | 27.7                                  | 7.5                | 1,209         |
| Lakshadweep               | 4.7          | 8.2                | 49.6                            | 31.9                                  | 5.6                | 502           |
| Puducherry                | 8.8          | 24.2               | 30.0                            | 29.4                                  | 7.6                | 640           |
| Tamil Nadu                | 15.2         | 25.4               | 23.9                            | 25.2                                  | 10.4               | 1,534         |
| Telangana                 | 10.5         | 31.2               | 27.5                            | 26.1                                  | 4.8                | 1,061         |

### ***14.1.2 Satisfaction with current living arrangement***

Satisfaction with current living arrangements reflects how well older adults have been taken care of and how comfortable they are with whomever and wherever they live. The satisfaction of older adults with their current living arrangements and their intention to change them in the future is presented in Table 14.5. The majority of the respondents, irrespective of gender, are satisfied with their current living arrangements and just about 5% expressed their intention to change them in the future. Marital status is an important factor in determining the satisfaction of individuals regarding their current living arrangements. Currently married older adults living with a spouse, children, and other family members are more satisfied with their living arrangements. A relatively higher proportion of older adults who live alone are likely to change their living arrangements in the future. Satisfaction with current living arrangements is relatively lower amongst the elderly respondents compared to their younger counterparts, yet they are less likely to change their living arrangements in the future. Older adults with no formal education are least satisfied with their present living arrangements, but a slightly higher proportion of older adults with higher levels of education intended to make changes in their future living arrangements. Older adults who are currently working, and those living in urban areas, are more satisfied with their present living arrangements compared to their counterparts. In almost all states, dissatisfaction is higher amongst the elderly when compared to the younger respondents.

More than 10% of the elderly in Arunachal Pradesh (10%), Jharkhand (16%), Puducherry (15%), and Delhi (16%) intended to change their current living arrangements in the future (Table 14.6), while more than 90% of the elderly are satisfied with their current living arrangements in Himachal Pradesh (97%), Mizoram (95%), and Lakshadweep (95%).

**Table 14.5 Percentage of older adults by perceived satisfaction with current living arrangement and intention to change it in future by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*                                |                               |               | Age ≥ 60                                  |                               |               | Total                                     |                               |               |
|------------------------------------------|-------------------------------------------|-------------------------------|---------------|-------------------------------------------|-------------------------------|---------------|-------------------------------------------|-------------------------------|---------------|
|                                          | Satisfied with current living arrangement | Intention to change in future | Number        | Satisfied with current living arrangement | Intention to change in future | Number        | Satisfied with current living arrangement | Intention to change in future | Number        |
| <b>Place of residence</b>                |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Rural                                    | 78.1                                      | 5.0                           | 25,809        | 73.6                                      | 4.4                           | 20,725        | 76.0                                      | 4.7                           | 46,534        |
| Urban                                    | 82.8                                      | 7.7                           | 14,977        | 77.8                                      | 5.1                           | 10,739        | 80.7                                      | 6.6                           | 25,716        |
| <b>Sex</b>                               |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Male                                     | 79.1                                      | 5.9                           | 15,471        | 77.6                                      | 4.7                           | 15,098        | 78.3                                      | 5.2                           | 30,569        |
| Female                                   | 80.0                                      | 5.9                           | 25,315        | 72.4                                      | 4.6                           | 16,366        | 76.9                                      | 5.4                           | 41,681        |
| <b>Marital status</b>                    |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Currently married                        | 80.9                                      | 5.8                           | 35,476        | 78.7                                      | 4.7                           | 19,920        | 80.1                                      | 5.4                           | 55,396        |
| Widowed                                  | 71.1                                      | 6.8                           | 3,874         | 68.8                                      | 4.5                           | 10,719        | 69.4                                      | 5.0                           | 14,593        |
| Divorced/Separated/Deserted/Others       | 70.8                                      | 5.8                           | 1,436         | 65.2                                      | 6.1                           | 825           | 68.8                                      | 5.9                           | 2,261         |
| <b>Living arrangement</b>                |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Living alone                             | 58.2                                      | 9.0                           | 691           | 53.3                                      | 7.7                           | 1,622         | 54.4                                      | 8.0                           | 2,313         |
| Living with spouse                       | 77.6                                      | 6.3                           | 4,623         | 75.3                                      | 4.9                           | 6,215         | 76.2                                      | 5.4                           | 10,838        |
| Living with spouse and children          | 81.5                                      | 5.7                           | 30,198        | 80.3                                      | 4.6                           | 13,465        | 81.1                                      | 5.3                           | 43,663        |
| Living with children (without spouse)    | 72.8                                      | 7.0                           | 4,076         | 72.8                                      | 4.0                           | 8,418         | 72.8                                      | 4.9                           | 12,494        |
| Living with others only                  | 73.5                                      | 4.5                           | 1,198         | 63.9                                      | 4.3                           | 1,744         | 67.6                                      | 4.4                           | 2,942         |
| <b>Religion</b>                          |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Hindu                                    | 80.3                                      | 6.0                           | 29,936        | 74.9                                      | 4.7                           | 23,037        | 77.8                                      | 5.4                           | 52,973        |
| Muslim                                   | 75.3                                      | 5.3                           | 4,936         | 74.3                                      | 4.3                           | 3,731         | 74.8                                      | 4.9                           | 8,667         |
| Christian                                | 79.4                                      | 5.9                           | 4,065         | 69.0                                      | 4.4                           | 3,150         | 74.8                                      | 5.2                           | 7,215         |
| Others                                   | 80.8                                      | 4.5                           | 1,849         | 78.9                                      | 4.0                           | 1,546         | 79.9                                      | 4.3                           | 3,395         |
| <b>Caste</b>                             |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Scheduled tribe                          | 78.9                                      | 3.7                           | 7,336         | 74.6                                      | 3.4                           | 5,173         | 77.0                                      | 3.6                           | 12,509        |
| Scheduled caste                          | 73.5                                      | 6.2                           | 6,906         | 68.3                                      | 5.4                           | 5,140         | 71.1                                      | 5.9                           | 12,046        |
| Other backward class                     | 80.5                                      | 6.0                           | 15,298        | 73.6                                      | 4.9                           | 11,886        | 77.4                                      | 5.5                           | 27,184        |
| None of the above                        | 83.2                                      | 6.1                           | 11,246        | 81.4                                      | 4.1                           | 9,265         | 82.4                                      | 5.1                           | 20,511        |
| <b>Education</b>                         |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| No schooling                             | 73.6                                      | 5.5                           | 16,322        | 70.4                                      | 4.7                           | 16,889        | 72.0                                      | 5.1                           | 33,211        |
| Less than 5 years completed              | 78.2                                      | 5.1                           | 4,273         | 73.4                                      | 4.7                           | 3,781         | 75.9                                      | 4.9                           | 8,054         |
| 5-9 years complete                       | 82.9                                      | 6.8                           | 10,892        | 81.0                                      | 4.6                           | 6,017         | 82.2                                      | 5.9                           | 16,909        |
| 10 or more years completed               | 89.0                                      | 6.1                           | 9,299         | 86.1                                      | 4.4                           | 4,777         | 88.0                                      | 5.5                           | 14,076        |
| <b>Work status</b>                       |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Currently working                        | 79.8                                      | 5.8                           | 23,683        | 75.9                                      | 4.9                           | 9,307         | 78.6                                      | 5.5                           | 32,990        |
| Worked in past but currently not working | 75.6                                      | 7.5                           | 4,587         | 75.2                                      | 5.1                           | 13,377        | 75.3                                      | 5.7                           | 17,964        |
| Never worked                             | 81.2                                      | 5.5                           | 12,516        | 73.1                                      | 3.7                           | 8,780         | 77.7                                      | 4.7                           | 21,296        |
| <b>MPCE quintile</b>                     |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Poorest                                  | 74.5                                      | 4.9                           | 7,674         | 67.4                                      | 4.6                           | 6,484         | 71.1                                      | 4.7                           | 14,158        |
| Poorer                                   | 77.2                                      | 5.2                           | 8,053         | 75.2                                      | 4.8                           | 6,477         | 76.3                                      | 5.0                           | 14,530        |
| Middle                                   | 80.3                                      | 6.9                           | 8,121         | 77.5                                      | 4.7                           | 6,416         | 79.0                                      | 5.9                           | 14,537        |
| Richer                                   | 83.5                                      | 6.5                           | 8,516         | 77.3                                      | 4.6                           | 6,170         | 80.7                                      | 5.6                           | 14,686        |
| Richest                                  | 83.3                                      | 6.1                           | 8,422         | 78.0                                      | 4.5                           | 5,917         | 81.1                                      | 5.4                           | 14,339        |
| <b>Total</b>                             | <b>79.7</b>                               | <b>5.9</b>                    | <b>40,786</b> | <b>74.8</b>                               | <b>4.6</b>                    | <b>31,464</b> | <b>77.5</b>                               | <b>5.3</b>                    | <b>72,250</b> |

\* Including spouse irrespective of age.

**Table 14.6 Percentage of older adults by perceived satisfaction with current living arrangement and intention to change it in future, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Age 45-59*                                |                               |               | Age ≥ 60                                  |                               |               | Total                                     |                               |               |
|---------------------------|-------------------------------------------|-------------------------------|---------------|-------------------------------------------|-------------------------------|---------------|-------------------------------------------|-------------------------------|---------------|
|                           | Satisfied with current living arrangement | Intention to change in future | Number        | Satisfied with current living arrangement | Intention to change in future | Number        | Satisfied with current living arrangement | Intention to change in future | Number        |
| <b>India</b>              | <b>79.7</b>                               | <b>5.9</b>                    | <b>40,786</b> | <b>74.9</b>                               | <b>4.7</b>                    | <b>31,464</b> | <b>77.5</b>                               | <b>5.3</b>                    | <b>72,250</b> |
| <b>North</b>              |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Chandigarh                | 88.4                                      | 10.7                          | 632           | 87.8                                      | 8.5                           | 394           | 88.2                                      | 9.8                           | 1,026         |
| Delhi                     | 81.8                                      | 16.6                          | 824           | 78.0                                      | 15.9                          | 495           | 80.3                                      | 16.3                          | 1,319         |
| Haryana                   | 88.9                                      | 12.0                          | 1,050         | 87.5                                      | 9.4                           | 848           | 88.2                                      | 10.7                          | 1,898         |
| Himachal Pradesh          | 97.6                                      | 1.4                           | 767           | 96.9                                      | 0.7                           | 621           | 97.3                                      | 1.0                           | 1,388         |
| Jammu & Kashmir           | 65.7                                      | 1.2                           | 882           | 67.1                                      | 2.5                           | 731           | 66.4                                      | 1.8                           | 1,613         |
| Punjab                    | 84.2                                      | 2.7                           | 1,120         | 81.7                                      | 3.1                           | 1,004         | 83.0                                      | 2.9                           | 2,124         |
| Rajasthan                 | 87.5                                      | 1.7                           | 1,166         | 83.7                                      | 1.3                           | 1,078         | 85.6                                      | 1.5                           | 2,244         |
| Uttarakhand               | 91.1                                      | 2.4                           | 717           | 85.6                                      | 2.5                           | 641           | 88.4                                      | 2.4                           | 1,358         |
| <b>Central</b>            |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Chhattisgarh              | 84.4                                      | 7.8                           | 1,275         | 80.9                                      | 6.0                           | 780           | 83.1                                      | 7.1                           | 2,055         |
| Madhya Pradesh            | 82.1                                      | 7.1                           | 1,601         | 79.8                                      | 5.4                           | 1,313         | 81.0                                      | 6.3                           | 2,914         |
| Uttar Pradesh             | 73.0                                      | 5.6                           | 2,398         | 67.7                                      | 4.2                           | 2,169         | 70.4                                      | 4.9                           | 4,567         |
| <b>East</b>               |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Bihar                     | 81.6                                      | 2.9                           | 1,712         | 80.1                                      | 2.6                           | 1,808         | 80.8                                      | 2.8                           | 3,520         |
| Jharkhand                 | 83.2                                      | 19.1                          | 1,296         | 82.0                                      | 13.4                          | 1,168         | 82.6                                      | 16.4                          | 2,464         |
| Odisha                    | 89.4                                      | 2.8                           | 1,680         | 83.3                                      | 2.0                           | 1,237         | 86.7                                      | 2.4                           | 2,917         |
| West Bengal               | 73.1                                      | 7.2                           | 2,389         | 65.7                                      | 4.6                           | 1,544         | 70.1                                      | 6.2                           | 3,933         |
| <b>Northeast</b>          |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Arunachal Pradesh         | 77.4                                      | 9.2                           | 897           | 72.3                                      | 10.7                          | 318           | 76.1                                      | 9.6                           | 1,215         |
| Assam                     | 74.6                                      | 4.0                           | 1,550         | 72.9                                      | 2.0                           | 816           | 74.0                                      | 3.3                           | 2,366         |
| Manipur                   | 60.0                                      | 5.5                           | 763           | 62.2                                      | 5.0                           | 606           | 61.0                                      | 5.3                           | 1,369         |
| Meghalaya                 | 84.1                                      | 0.8                           | 557           | 80.9                                      | 0.8                           | 412           | 82.8                                      | 0.8                           | 969           |
| Mizoram                   | 97.3                                      | 1.7                           | 715           | 94.8                                      | 0.7                           | 531           | 96.2                                      | 1.3                           | 1,246         |
| Nagaland                  | 86.6                                      | 2.4                           | 708           | 85.2                                      | 0.2                           | 608           | 86.0                                      | 1.3                           | 1,316         |
| Tripura                   | 75.9                                      | 2.3                           | 734           | 66.3                                      | 0.4                           | 461           | 72.1                                      | 1.6                           | 1,195         |
| <b>West</b>               |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Dadra & Nagar Haveli      | 87.3                                      | 4.9                           | 639           | 85.4                                      | 2.4                           | 451           | 86.6                                      | 3.9                           | 1,090         |
| Daman & Diu               | 88.4                                      | 7.2                           | 557           | 88.1                                      | 3.5                           | 434           | 88.3                                      | 5.5                           | 991           |
| Goa                       | 90.0                                      | 3.6                           | 790           | 85.8                                      | 1.7                           | 637           | 88.1                                      | 2.7                           | 1,427         |
| Gujarat                   | 88.9                                      | 4.7                           | 1,350         | 87.7                                      | 2.7                           | 991           | 88.4                                      | 3.8                           | 2,341         |
| Maharashtra               | 89.7                                      | 5.8                           | 2,183         | 85.9                                      | 6.4                           | 1,790         | 87.8                                      | 6.1                           | 3,973         |
| <b>South</b>              |                                           |                               |               |                                           |                               |               |                                           |                               |               |
| Andaman & Nicobar Islands | 88.2                                      | 1.4                           | 721           | 82.9                                      | 0.7                           | 523           | 86.1                                      | 1.1                           | 1,244         |
| Andhra Pradesh            | 75.8                                      | 10.3                          | 1,574         | 69.4                                      | 7.8                           | 1,105         | 73.1                                      | 9.3                           | 2,679         |
| Karnataka                 | 73.8                                      | 4.1                           | 1,416         | 59.6                                      | 5.4                           | 1,004         | 68.2                                      | 4.6                           | 2,420         |
| Kerala                    | 83.1                                      | 5.2                           | 1,288         | 79.8                                      | 2.9                           | 1,209         | 81.4                                      | 4.0                           | 2,497         |
| Lakshadweep               | 95.2                                      | 1.9                           | 637           | 95.1                                      | 1.4                           | 502           | 95.2                                      | 1.6                           | 1,139         |
| Puducherry                | 89.8                                      | 15.3                          | 788           | 87.5                                      | 14.2                          | 640           | 88.7                                      | 14.8                          | 1,428         |
| Tamil Nadu                | 73.5                                      | 4.4                           | 1,996         | 65.2                                      | 3.4                           | 1,534         | 69.7                                      | 3.9                           | 3,530         |
| Telangana                 | 72.3                                      | 13.1                          | 1,414         | 65.1                                      | 10.1                          | 1,061         | 69.1                                      | 11.8                          | 2,475         |

\* Including spouse irrespective of age.

### Key findings: living arrangements and satisfaction with current living arrangements

- The preferred living arrangements amongst the elderly is living with a spouse and children. However, in India, 6% of the elderly and around 9% of elderly women live alone. The proportion of the elderly living alone is as high as 15% in the state of Tamil Nadu, 13% in Nagaland, and 11% in Telangana.
- Around 75% of the elderly (aged 60 and above), irrespective of gender, are satisfied with their current living arrangements and only 5% express their intention to change their living arrangements in the future.
- A higher proportion of the elderly from urban areas, those who are currently divorced, separated, or deserted, those living alone, and those from the states/UTs of Delhi, Jharkhand, Arunachal Pradesh and Puducherry expressed their intention to change current living arrangements.



## 14.2 SOCIAL AND FAMILY CONNECTEDNESS

Social connectedness is a key component of successful ageing, as old age is often depicted as a time of loneliness and ‘rolelessness’. (Gupta and Sekher, 2017; Kumari and Sekher, 2012). However, information on the social networks of the elderly in India is scarce. LASI aims to provide a comprehensive profile of the social integration of older adults from the perspective of social networks and connectedness.

In LASI, the respondents were asked with whom they share most of their personal matters with from a list that included their spouse, children or grandchildren, son-in-law or daughter-in-law, siblings, friends, and others. Among the elderly with a spouse, 82% share most of their personal matters with their spouse, followed by their children or grandchildren (32%; Table 14.7). Elderly women also share their personal matters with their son-in-law or daughter-in-law (8%), which is less common among men. Among the elderly without a spouse, 70% share their personal matters with their children or grandchildren, followed by their son-in-law or daughter-in-law (19%; Table 14.8). Almost 3% of the elderly without a spouse also share with others compared to 1% of the elderly with a spouse, and regardless of if they had a spouse or not, more elderly men share their personal matters with friends compared to their female counterparts.

**Table 14.7 Percentage of elderly age 60 and above having spouse with whom they share most of their personal matters by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Persons having spouse |                             |                                |            |            |            | Number        |
|------------------------------------------|-----------------------|-----------------------------|--------------------------------|------------|------------|------------|---------------|
|                                          | Spouse                | Children/<br>Grand children | Son-in-law/<br>Daughter-in-law | Siblings   | Friends    | Others     |               |
| <b>Place of residence</b>                |                       |                             |                                |            |            |            |               |
| Rural                                    | 82.9                  | 32.1                        | 4.9                            | 3.5        | 3.1        | 0.7        | 13,333        |
| Urban                                    | 80.6                  | 31.0                        | 5.7                            | 3.1        | 3.4        | 0.5        | 6,757         |
| <b>Sex</b>                               |                       |                             |                                |            |            |            |               |
| Male                                     | 84.1                  | 30.2                        | 3.3                            | 3.0        | 4.1        | 0.6        | 12,506        |
| Female                                   | 79.1                  | 34.5                        | 8.0                            | 4.0        | 1.7        | 0.7        | 7,584         |
| <b>Religion</b>                          |                       |                             |                                |            |            |            |               |
| Hindu                                    | 82.1                  | 31.9                        | 5.3                            | 3.4        | 3.3        | 0.7        | 14,760        |
| Muslim                                   | 81.6                  | 30.8                        | 3.7                            | 2.7        | 2.6        | 0.4        | 2,356         |
| Christian                                | 87.6                  | 25.7                        | 3.2                            | 1.5        | 3.3        | 0.1        | 1,969         |
| Others                                   | 82.7                  | 37.7                        | 5.9                            | 5.6        | 2.2        | 0.6        | 1,005         |
| <b>Caste</b>                             |                       |                             |                                |            |            |            |               |
| Scheduled tribe                          | 80.1                  | 28.3                        | 2.4                            | 4.5        | 3.5        | 0.5        | 3,213         |
| Scheduled caste                          | 84.3                  | 30.4                        | 4.6                            | 3.4        | 1.9        | 0.5        | 3,149         |
| Other backward class                     | 81.5                  | 32.5                        | 5.5                            | 3.1        | 3.3        | 0.7        | 7,705         |
| None of the above                        | 82.6                  | 32.5                        | 5.6                            | 3.4        | 3.8        | 0.6        | 6,023         |
| <b>Education</b>                         |                       |                             |                                |            |            |            |               |
| No schooling                             | 80.8                  | 33.7                        | 5.6                            | 3.2        | 2.2        | 0.5        | 9,218         |
| Less than 5 years complete               | 81.1                  | 30.5                        | 5.1                            | 3.3        | 3.7        | 0.9        | 2,515         |
| 5-9 years complete                       | 83.8                  | 32.0                        | 6.2                            | 3.9        | 3.3        | 0.8        | 4,427         |
| 10 or more years complete                | 85.1                  | 27.1                        | 2.3                            | 3.3        | 5.7        | 0.6        | 3,930         |
| <b>Work status</b>                       |                       |                             |                                |            |            |            |               |
| Currently working                        | 85.4                  | 29.3                        | 4.0                            | 3.7        | 3.9        | 0.8        | 7,266         |
| Worked in past but currently not working | 79.6                  | 34.7                        | 4.7                            | 3.2        | 3.5        | 0.5        | 8,339         |
| Never worked                             | 81.5                  | 30.8                        | 7.8                            | 3.0        | 1.3        | 0.5        | 4,485         |
| <b>MPCE quintile</b>                     |                       |                             |                                |            |            |            |               |
| Poorest                                  | 81.2                  | 30.0                        | 4.7                            | 2.3        | 1.9        | 0.4        | 3,948         |
| Poorer                                   | 82.1                  | 33.5                        | 4.5                            | 3.1        | 2.9        | 0.5        | 4,046         |
| Middle                                   | 83.1                  | 30.0                        | 6.5                            | 2.9        | 3.5        | 0.6        | 4,113         |
| Richer                                   | 82.9                  | 32.3                        | 4.3                            | 4.3        | 2.9        | 0.7        | 3,989         |
| Richest                                  | 81.9                  | 33.5                        | 5.5                            | 4.5        | 5.2        | 0.9        | 3,994         |
| <b>Total</b>                             | <b>82.2</b>           | <b>31.8</b>                 | <b>5.1</b>                     | <b>3.4</b> | <b>3.2</b> | <b>0.6</b> | <b>20,090</b> |

**Table 14.8 Percentage of elderly age 60 and above not having spouse with whom they share most of their personal matters by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Persons not having spouse |                                |            |            |            | Number        |
|------------------------------------------|---------------------------|--------------------------------|------------|------------|------------|---------------|
|                                          | Children/Grand children   | Son-in-law/<br>Daughter-in-law | Siblings   | Friends    | Others     |               |
| <b>Place of residence</b>                |                           |                                |            |            |            |               |
| Rural                                    | 70.2                      | 18.6                           | 7.3        | 3.5        | 3.2        | 7,392         |
| Urban                                    | 70.1                      | 21.2                           | 7.1        | 2.6        | 2.1        | 3,982         |
| <b>Sex</b>                               |                           |                                |            |            |            |               |
| Male                                     | 65.6                      | 12.4                           | 10.2       | 4.8        | 3.2        | 2,592         |
| Female                                   | 71.6                      | 21.4                           | 6.4        | 2.7        | 2.8        | 8,782         |
| <b>Religion</b>                          |                           |                                |            |            |            |               |
| Hindu                                    | 70.8                      | 19.5                           | 7.2        | 3.2        | 2.8        | 8,277         |
| Muslim                                   | 65.1                      | 20.6                           | 7.4        | 2.7        | 2.3        | 1,375         |
| Christian                                | 67.5                      | 12.6                           | 8.1        | 6.3        | 3.0        | 1,181         |
| Others                                   | 75.2                      | 20.4                           | 8.3        | 2.5        | 5.4        | 541           |
| <b>Caste</b>                             |                           |                                |            |            |            |               |
| Scheduled tribe                          | 72.2                      | 20.2                           | 7.1        | 2.6        | 4.4        | 1,960         |
| Scheduled caste                          | 70.0                      | 18.4                           | 6.2        | 3.0        | 2.7        | 1,991         |
| Other backward class                     | 70.7                      | 18.7                           | 7.3        | 3.4        | 2.4        | 4,181         |
| None of the above                        | 69.0                      | 21.0                           | 8.0        | 3.3        | 3.2        | 3,242         |
| <b>Education</b>                         |                           |                                |            |            |            |               |
| No schooling                             | 69.2                      | 18.8                           | 6.8        | 2.8        | 2.9        | 7,671         |
| Less than 5 years complete               | 68.2                      | 17.7                           | 9.7        | 3.4        | 3.3        | 1,266         |
| 5-9 years complete                       | 73.4                      | 19.8                           | 7.2        | 3.2        | 2.3        | 1,590         |
| 10 or more years complete                | 76.2                      | 26.5                           | 8.0        | 6.3        | 2.9        | 847           |
| <b>Work status</b>                       |                           |                                |            |            |            |               |
| Currently working                        | 65.6                      | 14.2                           | 10.4       | 5.6        | 3.9        | 2,041         |
| Worked in past but currently not working | 71.0                      | 18.3                           | 7.5        | 3.7        | 3.1        | 5,038         |
| Never worked                             | 71.6                      | 23.6                           | 5.3        | 1.3        | 2.1        | 4,295         |
| <b>MPCE quintile</b>                     |                           |                                |            |            |            |               |
| Poorest                                  | 68.7                      | 17.7                           | 5.0        | 2.2        | 2.8        | 2,536         |
| Poorer                                   | 69.2                      | 19.8                           | 7.8        | 2.7        | 2.3        | 2,431         |
| Middle                                   | 69.6                      | 20.4                           | 7.7        | 3.5        | 2.1        | 2,303         |
| Richer                                   | 71.2                      | 17.5                           | 8.6        | 4.0        | 3.4        | 2,181         |
| Richest                                  | 73.8                      | 22.5                           | 7.8        | 4.1        | 4.1        | 1,923         |
| <b>Total</b>                             | <b>70.2</b>               | <b>19.4</b>                    | <b>7.3</b> | <b>3.2</b> | <b>2.9</b> | <b>11,374</b> |

### 14.2.1 Taking care of grandchildren

Informal care received by the elderly is often a matter of discussion, but informal care provided by the elderly does not receive very much attention. Taking care of grandchildren and other dependents in the family is an important type of informal care provided by older adults. LASI attempted to understand the informal care provided by older adults to their grandchildren and the associated reasons for the care arrangement. Tables 14.9 and 14.10 present the number of grandchildren that the older adults care for according to their background characteristics and state. Table 14.11 provides the reasons associated with taking care of grandchildren according to their background characteristics. A little more than 90% of the elderly respondents have grandchildren and amongst them, almost one-fifth look after their grandchildren. Of the elderly respondents, 30% take care of at least one grandchild followed by 47% who take care of two or three grandchildren, and 24% take care of four or more grandchildren. Taking care of four or more grandchildren is more common in rural areas than in urban areas.

|                                                               | Rural elderly |        | Urban elderly |        |
|---------------------------------------------------------------|---------------|--------|---------------|--------|
|                                                               | Male          | Female | Male          | Female |
| Average number of grandchildren                               | 8             | 10     | 6             | 7      |
| Average hours spend per week for taking care of grandchildren | 17            | 20     | 17            | 18     |

Rural elderly women have an average of ten grandchildren and spend, on average, 20 hours per week taking care of them. The average number of grandchildren being taken care by their grandparents is slightly lower for elderly men and urban respondents.

More than half of the elderly in West Bengal (56%), Tripura (58%), Andaman & Nicobar Island (54%), Andhra Pradesh (66%), and Telangana (76%) look after one grandchild and about three-fifths in Chandigarh (60%), Manipur (56%), Daman & Diu (60%), Karnataka (51%), and Lakshadweep (64%) look after two or three grandchildren. Close to one-third of the elderly in Haryana (36%), Rajasthan (37%), and Madhya Pradesh (39%) look after four or more grandchildren. Looking after grandchildren is a significant contribution of the elderly to the household and it indirectly facilitates the ability of other family members to engage in the paid economy. The findings of the survey reveal the substantial engagement of elderly in providing care to their grandchildren. However, this engagement in informal caregiving might be driven by various factors.

Irrespective of gender and age group variations, as stated by the respondents, the most common reason for looking after grandchildren is that the grandparents are the preferred caregivers (73%), the child's parents are working (22%), the child is orphaned (9%), and the child's parents are away (5%). About a quarter of the widowed elderly state that they look after their grandchildren because the child's parents are working.

**Table 14.9 Percent distribution of elderly age 60 and above having grandchildren and looking after them by background characteristics, LASI Wave 1, 2017-18**

| Background characteristics               | Having grand-children | Looking after grand-children | Number of grandchildren looking after |             |             | Number looking after at least one grandchild |
|------------------------------------------|-----------------------|------------------------------|---------------------------------------|-------------|-------------|----------------------------------------------|
|                                          |                       |                              | 1                                     | 2-3         | 4 or more   |                                              |
| <b>Place of residence</b>                |                       |                              |                                       |             |             |                                              |
| Rural                                    | 93.4                  | 19.2                         | 28.4                                  | 45.3        | 26.2        | 3,565                                        |
| Urban                                    | 89.7                  | 18.0                         | 32.5                                  | 50.8        | 16.7        | 1,684                                        |
| <b>Sex</b>                               |                       |                              |                                       |             |             |                                              |
| Male                                     | 90.0                  | 17.7                         | 30.6                                  | 45.1        | 24.3        | 2,322                                        |
| Female                                   | 94.4                  | 19.8                         | 28.7                                  | 48.1        | 23.2        | 2,927                                        |
| <b>Marital status</b>                    |                       |                              |                                       |             |             |                                              |
| Currently married                        | 92.5                  | 20.0                         | 30.3                                  | 46.8        | 23.0        | 3,519                                        |
| Widowed                                  | 94.4                  | 17.1                         | 27.7                                  | 47.0        | 25.4        | 1,677                                        |
| Divorced/Separated/Deserted/<br>Others   | 51.9                  | 13.5                         | 44.6                                  | 43.1        | 12.3        | 53                                           |
| <b>Living arrangement</b>                |                       |                              |                                       |             |             |                                              |
| Living alone                             | 83.8                  | 5.0                          | 19.6                                  | 41.5        | 38.9        | 62                                           |
| Living with spouse                       | 92.7                  | 14.6                         | 37.4                                  | 37.5        | 25.2        | 737                                          |
| Living with spouse and children          | 92.4                  | 22.6                         | 27.7                                  | 49.9        | 22.4        | 2,749                                        |
| Living with children (without spouse)    | 97.0                  | 18.5                         | 24.4                                  | 49.5        | 26.1        | 1,461                                        |
| Living with others only                  | 74.7                  | 21.6                         | 55.9                                  | 30.5        | 13.6        | 240                                          |
| <b>Religion</b>                          |                       |                              |                                       |             |             |                                              |
| Hindu                                    | 92.2                  | 18.6                         | 29.1                                  | 47.1        | 23.8        | 3,879                                        |
| Muslim                                   | 94.2                  | 22.1                         | 28.8                                  | 43.9        | 27.3        | 641                                          |
| Christian                                | 87.7                  | 13.2                         | 41.4                                  | 48.7        | 9.9         | 432                                          |
| Others                                   | 91.7                  | 18.4                         | 36.5                                  | 49.1        | 14.4        | 297                                          |
| <b>Caste</b>                             |                       |                              |                                       |             |             |                                              |
| Scheduled tribe                          | 91.9                  | 22.5                         | 26.5                                  | 50.1        | 23.4        | 855                                          |
| Scheduled caste                          | 94.5                  | 18.0                         | 31.9                                  | 43.5        | 24.6        | 852                                          |
| Other backward class                     | 92.1                  | 19.5                         | 27.9                                  | 47.1        | 25.0        | 2,050                                        |
| None of the above                        | 91.3                  | 17.3                         | 31.9                                  | 47.3        | 20.8        | 1,492                                        |
| <b>Education</b>                         |                       |                              |                                       |             |             |                                              |
| No schooling                             | 94.0                  | 18.9                         | 27.1                                  | 44.2        | 28.7        | 2,839                                        |
| Less than 5 years complete               | 93.1                  | 18.7                         | 33.4                                  | 49.8        | 16.8        | 631                                          |
| 5-9 years complete                       | 92.4                  | 20.1                         | 29.4                                  | 53.4        | 17.2        | 1,086                                        |
| 10 or more years complete                | 84.6                  | 17.0                         | 37.9                                  | 46.0        | 16.1        | 693                                          |
| <b>Work status</b>                       |                       |                              |                                       |             |             |                                              |
| Currently working                        | 90.6                  | 20.9                         | 29.8                                  | 48.02       | 22.23       | 1,631                                        |
| Worked in past but currently not working | 93.2                  | 18.0                         | 31.4                                  | 45.06       | 23.53       | 2,150                                        |
| Never worked                             | 92.9                  | 17.9                         | 26.1                                  | 48.01       | 25.88       | 1,468                                        |
| <b>MPCE quintile</b>                     |                       |                              |                                       |             |             |                                              |
| Poorest                                  | 93.8                  | 22.6                         | 28.2                                  | 47.5        | 24.3        | 1,237                                        |
| Poorer                                   | 93.0                  | 19.4                         | 29.3                                  | 49.1        | 21.6        | 1,180                                        |
| Middle                                   | 91.5                  | 16.9                         | 29.8                                  | 48.1        | 22.2        | 1,042                                        |
| Richer                                   | 91.9                  | 17.6                         | 29.8                                  | 43.8        | 26.4        | 989                                          |
| Richest                                  | 90.8                  | 17.0                         | 31.7                                  | 44.0        | 24.4        | 801                                          |
| <b>Total</b>                             | <b>92.3</b>           | <b>18.8</b>                  | <b>29.5</b>                           | <b>46.8</b> | <b>23.7</b> | <b>5,249</b>                                 |

**Table 14.10 Percent distribution of elderly age 60 and above having grandchildren and looking after them, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Having grandchildren | Looking after grandchildren | No. of grandchildren looking after |             |             | Number looking after at least one grandchild |
|---------------------------|----------------------|-----------------------------|------------------------------------|-------------|-------------|----------------------------------------------|
|                           |                      |                             | 1                                  | 2-3         | 4 or more   |                                              |
| <b>India</b>              | <b>92.3</b>          | <b>18.8</b>                 | <b>29.5</b>                        | <b>46.8</b> | <b>23.7</b> | <b>5,249</b>                                 |
| <b>North</b>              |                      |                             |                                    |             |             |                                              |
| Chandigarh                | 87.5                 | 17.2                        | 30.7                               | 60.3        | 9.0         | 67                                           |
| Delhi                     | 86.1                 | 37.7                        | 24.2                               | 53.6        | 22.2        | 164                                          |
| Haryana                   | 96.4                 | 25.9                        | 15.8                               | 48.7        | 35.5        | 229                                          |
| Himachal Pradesh          | 93.1                 | 20.3                        | 20.2                               | 55.9        | 23.9        | 117                                          |
| Jammu & Kashmir           | 89.2                 | 15.7                        | 31.1                               | 61.7        | 7.1         | 116                                          |
| Punjab                    | 92.0                 | 16.3                        | 27.6                               | 50.9        | 21.6        | 163                                          |
| Rajasthan                 | 94.4                 | 15.8                        | 20.3                               | 42.7        | 37.0        | 151                                          |
| Uttarakhand               | 95.2                 | 26.0                        | 31.0                               | 42.9        | 26.1        | 178                                          |
| <b>Central</b>            |                      |                             |                                    |             |             |                                              |
| Chhattisgarh              | 95.2                 | 9.5                         | 44.5                               | 46.5        | 9.0         | 72                                           |
| Madhya Pradesh            | 91.8                 | 32.4                        | 26.6                               | 34.8        | 38.7        | 368                                          |
| Uttar Pradesh             | 93.4                 | 18.6                        | 20.0                               | 37.7        | 42.3        | 371                                          |
| <b>East</b>               |                      |                             |                                    |             |             |                                              |
| Bihar                     | 94.3                 | 17.8                        | 33.9                               | 46.9        | 19.2        | 311                                          |
| Jharkhand                 | 93.6                 | 33.2                        | 29.8                               | 40.9        | 29.3        | 356                                          |
| Odisha                    | 91.6                 | 15.0                        | 34.7                               | 50.3        | 15.0        | 167                                          |
| West Bengal               | 90.7                 | 8.4                         | 56.2                               | 37.8        | 6.0         | 119                                          |
| <b>Northeast</b>          |                      |                             |                                    |             |             |                                              |
| Arunachal Pradesh         | 64.3                 | 31.7                        | 33.4                               | 44.7        | 21.9        | 61                                           |
| Assam                     | 88.1                 | 31.1                        | 40.2                               | 52.2        | 7.6         | 235                                          |
| Manipur                   | 89.9                 | 43.1                        | 31.4                               | 55.9        | 12.7        | 224                                          |
| Meghalaya                 | 83.5                 | 16.3                        | 39.9                               | 48.0        | 12.1        | 46                                           |
| Mizoram                   | 89.5                 | 34.0                        | 39.3                               | 39.8        | 20.9        | 135                                          |
| Nagaland                  | 87.7                 | 6.7                         | 48.8                               | 45.8        | 5.5         | 38                                           |
| Tripura                   | 92.4                 | 5.8                         | 58.2                               | 30.5        | 11.3        | 28                                           |
| <b>West</b>               |                      |                             |                                    |             |             |                                              |
| Dadra & Nagar Haveli      | 91.7                 | 23.4                        | 36.5                               | 43.1        | 20.5        | 96                                           |
| Daman & Diu               | 88.2                 | 27.5                        | 23.7                               | 59.6        | 16.6        | 104                                          |
| Goa                       | 77.4                 | 14.0                        | 51.2                               | 38.9        | 9.8         | 74                                           |
| Gujarat                   | 90.4                 | 30.9                        | 25.0                               | 52.8        | 22.2        | 265                                          |
| Maharashtra               | 93.9                 | 24.8                        | 29.4                               | 55.8        | 14.9        | 398                                          |
| <b>South</b>              |                      |                             |                                    |             |             |                                              |
| Andaman & Nicobar Islands | 81.8                 | 10.7                        | 53.5                               | 44.5        | 2.1         | 47                                           |
| Andhra Pradesh            | 92.5                 | 4.7                         | 65.5                               | 32.8        | 1.8         | 47                                           |
| Karnataka                 | 91.6                 | 15.5                        | 27.8                               | 56.6        | 15.6        | 130                                          |
| Kerala                    | 89.1                 | 3.9                         | 43.4                               | 51.1        | 5.5         | 53                                           |
| Lakshadweep               | 90.4                 | 5.5                         | 19.4                               | 63.7        | 17.0        | 31                                           |
| Puducherry                | 88.9                 | 9.5                         | 35.6                               | 56.0        | 8.4         | 72                                           |
| Tamil Nadu                | 88.5                 | 13.5                        | 38.6                               | 52.0        | 9.4         | 185                                          |
| Telangana                 | 93.1                 | 3.6                         | 76.4                               | 23.6        | 0.0         | 31                                           |

**Table 14.11 Percentage of elderly age 60 and above (those look after at least one grandchildren) by the reasons for looking after their grandchildren by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Child's parents are away | Child is orphaned/ parents are separated | Grandparents preferred as caregivers | Child's mother/father is working | Other      | Number       |
|------------------------------------------|--------------------------|------------------------------------------|--------------------------------------|----------------------------------|------------|--------------|
| <b>Place of residence</b>                |                          |                                          |                                      |                                  |            |              |
| Rural                                    | 5.7                      | 9.0                                      | 74.3                                 | 19.7                             | 5.5        | 3,565        |
| Urban                                    | 4.4                      | 7.0                                      | 67.7                                 | 28.1                             | 2.2        | 1,684        |
| <b>Sex</b>                               |                          |                                          |                                      |                                  |            |              |
| Male                                     | 5.7                      | 7.7                                      | 74.1                                 | 19.7                             | 4.2        | 2,322        |
| Female                                   | 5.1                      | 9.1                                      | 71.3                                 | 23.6                             | 5.0        | 2,927        |
| <b>Marital status</b>                    |                          |                                          |                                      |                                  |            |              |
| Currently married                        | 6.1                      | 8.0                                      | 73.1                                 | 20.6                             | 5.0        | 3,519        |
| Widowed                                  | 4.2                      | 9.1                                      | 71.4                                 | 24.4                             | 4.0        | 1,677        |
| Divorced/Separated/Deserted/Others       | 1.0                      | 20.2                                     | 70.3                                 | 29.7                             | 0.0        | 53           |
| <b>Living arrangement</b>                |                          |                                          |                                      |                                  |            |              |
| Living alone                             | 6.4                      | 2.1                                      | 72.6                                 | 23.4                             | 2.3        | 62           |
| Living with spouse                       | 12.2                     | 19.4                                     | 62.3                                 | 15.6                             | 8.8        | 737          |
| Living with spouse and children          | 4.2                      | 4.5                                      | 76.3                                 | 22.3                             | 3.8        | 2,749        |
| Living with children (without spouse)    | 3.1                      | 6.1                                      | 73.6                                 | 26.5                             | 4.2        | 1,461        |
| Living with others only                  | 9.6                      | 29.1                                     | 59.6                                 | 11.4                             | 3.3        | 240          |
| <b>Religion</b>                          |                          |                                          |                                      |                                  |            |              |
| Hindu                                    | 5.4                      | 7.1                                      | 73.3                                 | 22.3                             | 3.9        | 3,879        |
| Muslim                                   | 5.0                      | 15.3                                     | 71.5                                 | 16.6                             | 9.9        | 641          |
| Christian                                | 4.7                      | 21.6                                     | 47.0                                 | 35.0                             | 2.1        | 432          |
| Others                                   | 7.2                      | 7.9                                      | 71.8                                 | 26.7                             | 2.7        | 297          |
| <b>Caste</b>                             |                          |                                          |                                      |                                  |            |              |
| Scheduled tribe                          | 4.8                      | 10.8                                     | 70.8                                 | 22.0                             | 10.6       | 855          |
| Scheduled caste                          | 6.0                      | 8.9                                      | 74.5                                 | 19.8                             | 3.6        | 852          |
| Other backward class                     | 4.1                      | 8.7                                      | 70.0                                 | 24.2                             | 4.2        | 2,050        |
| None of the above                        | 7.5                      | 6.9                                      | 76.4                                 | 19.2                             | 4.0        | 1,492        |
| <b>Education</b>                         |                          |                                          |                                      |                                  |            |              |
| No schooling                             | 5.4                      | 10.2                                     | 71.2                                 | 22.6                             | 5.5        | 2,839        |
| Less than 5 years complete               | 6.5                      | 8.4                                      | 76.1                                 | 18.9                             | 1.8        | 631          |
| 5-9 years complete                       | 5.5                      | 6.0                                      | 72.0                                 | 22.6                             | 3.6        | 1,086        |
| 10 or more years complete                | 4.0                      | 3.8                                      | 76.6                                 | 20.5                             | 4.7        | 693          |
| <b>Work status</b>                       |                          |                                          |                                      |                                  |            |              |
| Currently working                        | 5.3                      | 10.5                                     | 73.8                                 | 19.6                             | 5.6        | 1,631        |
| Worked in past but currently not working | 5.9                      | 7.3                                      | 69.6                                 | 25.3                             | 3.9        | 2,150        |
| Never worked                             | 4.6                      | 7.7                                      | 75.6                                 | 19.6                             | 4.7        | 1,468        |
| <b>MPCE quintile</b>                     |                          |                                          |                                      |                                  |            |              |
| Poorest                                  | 5.1                      | 10.6                                     | 72.2                                 | 22.2                             | 3.0        | 1,237        |
| Poorer                                   | 3.6                      | 7.6                                      | 73.3                                 | 21.5                             | 3.7        | 1,180        |
| Middle                                   | 5.2                      | 6.1                                      | 75.8                                 | 22.1                             | 4.2        | 1,042        |
| Richer                                   | 5.3                      | 9.5                                      | 74.6                                 | 20.1                             | 6.5        | 989          |
| Richest                                  | 8.9                      | 7.7                                      | 65.2                                 | 24.2                             | 7.2        | 801          |
| <b>Total</b>                             | <b>5.4</b>               | <b>8.5</b>                               | <b>72.5</b>                          | <b>21.9</b>                      | <b>4.6</b> | <b>5,249</b> |

### 14.3 SOCIAL SUPPORT

Social support is closely linked to positive health and psychological wellbeing, especially in old age, and encompasses more than physical presence and social care. In this section, social support is examined in terms of financial support. Financial support is essential for a positive sense of wellbeing for the elderly as it directly affects their everyday life and social prestige (Sekher, et al., 2015). Along with the financial support received by elderly, it is equally important to understand the contribution made by the elderly by providing financial support to family and friends. Financial help includes providing money, helping to pay bills, and covering the cost of medical care, schooling, and marriages.

Table 14.12 presents the financial support received and provided by the elderly both from and to their family members and friends during the past 12 months according to their background characteristics. Fifteen percent of the elderly received financial help from family members or friends, and 6% provided financial help to others. Receiving financial help was more common amongst the elderly living alone (28%) compared to only 13% amongst the elderly living with a spouse and children. The elderly without any formal education, and those staying in rural areas, received more financial help in the past 12 months. The richest, those with a higher education, and elderly men provided more help than their counterparts.

The state-wise differentials on financial support received from or provided to family and friends by older adults are presented in Table 14.13. A substantial proportion of elderly age 60 years and above in Bihar, Arunachal Pradesh, and Nagaland receive financial support from family and friends, and a relatively higher proportion from Jammu & Kashmir, Chhattisgarh, Bihar, Arunachal Pradesh, Meghalaya, and Nagaland provide financial support to family and friends.

**Table 14.12 Percentage of elderly age 60 and above by receiving or providing financial support to family and friends during past 12 months by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Financial Support |            |               |
|------------------------------------------|-------------------|------------|---------------|
|                                          | Received          | Provided   | Number        |
| <b>Place of residence</b>                |                   |            |               |
| Rural                                    | 16.6              | 5.8        | 20,725        |
| Urban                                    | 11.7              | 6.2        | 10,739        |
| <b>Sex</b>                               |                   |            |               |
| Male                                     | 14.0              | 8.0        | 15,098        |
| Female                                   | 16.3              | 4.1        | 16,366        |
| <b>Marital status</b>                    |                   |            |               |
| Currently married                        | 14.6              | 6.9        | 19,920        |
| Widowed                                  | 16.5              | 4.2        | 10,719        |
| Divorced/Separated/Deserted/Others       | 11.7              | 8.2        | 825           |
| <b>Living arrangement</b>                |                   |            |               |
| Living alone                             | 28.3              | 4.1        | 1,622         |
| Living with spouse                       | 18.2              | 6.9        | 6,215         |
| Living with spouse and children          | 12.8              | 6.9        | 13,465        |
| Living with children (without spouse)    | 13.6              | 4.4        | 8,418         |
| Living with others only                  | 17.5              | 4.8        | 1,744         |
| <b>Religion</b>                          |                   |            |               |
| Hindu                                    | 14.7              | 5.9        | 23,037        |
| Muslim                                   | 18.7              | 6.5        | 3,731         |
| Christian                                | 18.9              | 5.8        | 3,150         |
| Others                                   | 12.7              | 3.8        | 1,546         |
| <b>Caste</b>                             |                   |            |               |
| Scheduled tribe                          | 12.9              | 4.4        | 5,173         |
| Scheduled caste                          | 14.8              | 5.2        | 5,140         |
| Other backward class                     | 15.4              | 6.5        | 11,886        |
| None of the above                        | 15.9              | 6.0        | 9,265         |
| <b>Education</b>                         |                   |            |               |
| No schooling                             | 16.1              | 4.4        | 16,889        |
| Less than 5 years complete               | 15.0              | 6.5        | 3,781         |
| 5-9 years complete                       | 14.8              | 7.1        | 6,017         |
| 10 or more years complete                | 12.3              | 10.2       | 4,777         |
| <b>Work status</b>                       |                   |            |               |
| Currently working                        | 13.8              | 8.2        | 9,307         |
| Worked in past but currently not working | 17.0              | 6.0        | 13,377        |
| Never worked                             | 14.0              | 3.0        | 8,780         |
| <b>MPCE quintile</b>                     |                   |            |               |
| Poorest                                  | 13.0              | 4.1        | 6,484         |
| Poorer                                   | 14.9              | 4.9        | 6,477         |
| Middle                                   | 14.8              | 5.6        | 6,416         |
| Richer                                   | 15.8              | 6.8        | 6,170         |
| Richest                                  | 18.4              | 9.2        | 5,917         |
| <b>Total</b>                             | <b>15.2</b>       | <b>5.9</b> | <b>31,464</b> |



**Table 14.13 Percentage of elderly age 60 and above by receiving or providing financial support to family and friends during past 12 months, states/UTs, LASI Wave 1, 2017-18**

| State/Union Territory     | Financial Support |            |               |
|---------------------------|-------------------|------------|---------------|
|                           | Received          | Provided   | Number        |
| <b>India</b>              | <b>15.2</b>       | <b>5.9</b> | <b>31,464</b> |
| <b>North</b>              |                   |            |               |
| Chandigarh                | 3.6               | 5.6        | 394           |
| Delhi                     | 4.2               | 1.7        | 495           |
| Haryana                   | 5.8               | 6.3        | 848           |
| Himachal Pradesh          | 14.4              | 8.7        | 621           |
| Jammu & Kashmir           | 24.0              | 12.9       | 731           |
| Punjab                    | 6.1               | 3.2        | 1,004         |
| Rajasthan                 | 12.8              | 6.2        | 1,078         |
| Uttarakhand               | 4.5               | 7.1        | 641           |
| <b>Central</b>            |                   |            |               |
| Chhattisgarh              | 14.8              | 11.3       | 780           |
| Madhya Pradesh            | 8.5               | 4.4        | 1,313         |
| Uttar Pradesh             | 13.7              | 4.6        | 2,169         |
| <b>East</b>               |                   |            |               |
| Bihar                     | 30.0              | 10.1       | 1,808         |
| Jharkhand                 | 14.7              | 4.7        | 1,168         |
| Odisha                    | 11.9              | 3.8        | 1,237         |
| West Bengal               | 10.9              | 3.6        | 1,544         |
| <b>Northeast</b>          |                   |            |               |
| Arunachal Pradesh         | 35.8              | 15.3       | 318           |
| Assam                     | 12.2              | 6.1        | 816           |
| Manipur                   | 23.5              | 8.5        | 606           |
| Meghalaya                 | 21.9              | 14.9       | 412           |
| Mizoram                   | 4.1               | 3.8        | 531           |
| Nagaland                  | 33.7              | 16.6       | 608           |
| Tripura                   | 6.1               | 1.4        | 461           |
| <b>West</b>               |                   |            |               |
| Dadra & Nagar Haveli      | 9.1               | 8.8        | 451           |
| Daman & Diu               | 15.2              | 4.7        | 434           |
| Goa                       | 6.1               | 3.3        | 637           |
| Gujarat                   | 9.8               | 6.1        | 991           |
| Maharashtra               | 23.6              | 6.4        | 1,790         |
| <b>South</b>              |                   |            |               |
| Andaman & Nicobar Islands | 3.9               | 2.8        | 523           |
| Andhra Pradesh            | 12.9              | 7.3        | 1,105         |
| Karnataka                 | 16.9              | 8.7        | 1,004         |
| Kerala                    | 19.9              | 6.3        | 1,209         |
| Lakshadweep               | 14.2              | 6.1        | 502           |
| Puducherry                | 14.0              | 3.7        | 640           |
| Tamil Nadu                | 13.0              | 5.0        | 1,534         |
| Telangana                 | 7.8               | 2.4        | 1,061         |

## 14.4 INSTRUMENTAL CARE PROVIDED BY OLDER ADULTS

Tables 14.14, 14.15, and 14.16 present the data on instrumental care provided by older adults. Basic daily activities refer to everyday routines such as eating, dressing, taking a bath, and using the toilet. Around 3% of the respondents interviewed have family members who are unable to carry out basic daily activities. More than three-fourths of the older adults aged less than 45–59 and 64% of the elderly age 60 and above reported taking care of dependent members in their family, and more elderly women than men take care of their family members who are unable to carry out basic daily activities.

The average number of hours spent providing care in the previous week of the survey is 18 hours amongst the older adults aged 45–59 and 19 hours amongst the elderly age 60 and above.

**Table 14.14 Percentage of older adults having family members who are unable to carry out basic daily activities by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Having family members who are unable to carry out basic daily activities |          |       | Number |
|------------------------------------------|--------------------------------------------------------------------------|----------|-------|--------|
|                                          | Age 45-59*                                                               | Age ≥ 60 | Total |        |
| <b>Place of residence</b>                |                                                                          |          |       |        |
| Rural                                    | 3.1                                                                      | 2.5      | 2.8   | 46,534 |
| Urban                                    | 2.6                                                                      | 2.1      | 2.4   | 25,716 |
| <b>Sex</b>                               |                                                                          |          |       |        |
| Male                                     | 2.7                                                                      | 2.2      | 2.4   | 30,569 |
| Female                                   | 3.0                                                                      | 2.6      | 2.8   | 41,681 |
| <b>Marital status</b>                    |                                                                          |          |       |        |
| Currently married                        | 3.0                                                                      | 2.8      | 2.9   | 55,396 |
| Widowed                                  | 2.0                                                                      | 1.6      | 1.7   | 14,593 |
| Divorced/Separated/Deserted/Others       | 3.6                                                                      | 3.1      | 3.4   | 2,261  |
| <b>Living arrangement</b>                |                                                                          |          |       |        |
| Living alone                             | 1.2                                                                      | 1.2      | 1.2   | 2,313  |
| Living with spouse                       | 3.0                                                                      | 2.9      | 3.0   | 10,838 |
| Living with spouse and children          | 3.0                                                                      | 2.7      | 2.9   | 43,663 |
| Living with children (without spouse)    | 1.7                                                                      | 1.7      | 1.7   | 12,494 |
| Living with others only                  | 5.6                                                                      | 2.3      | 3.6   | 2,942  |
| <b>Religion</b>                          |                                                                          |          |       |        |
| Hindu                                    | 2.8                                                                      | 2.4      | 2.6   | 52,973 |
| Muslim                                   | 3.7                                                                      | 2.6      | 3.2   | 8,667  |
| Christian                                | 2.4                                                                      | 3.3      | 2.8   | 7,215  |
| Others                                   | 3.6                                                                      | 1.4      | 2.5   | 3,395  |
| <b>Caste</b>                             |                                                                          |          |       |        |
| Scheduled tribe                          | 1.8                                                                      | 1.4      | 1.6   | 12,509 |
| Scheduled caste                          | 3.3                                                                      | 1.8      | 2.6   | 12,046 |
| Other backward class                     | 2.9                                                                      | 2.7      | 2.8   | 27,184 |
| None of the above                        | 3.0                                                                      | 2.6      | 2.8   | 20,511 |
| <b>Education</b>                         |                                                                          |          |       |        |
| No schooling                             | 2.7                                                                      | 2.2      | 2.4   | 33,211 |
| Less than 5 years complete               | 4.1                                                                      | 3.6      | 3.8   | 8,054  |
| 5-9 years complete                       | 2.6                                                                      | 2.1      | 2.4   | 16,909 |
| 10 or more years complete                | 3.3                                                                      | 2.4      | 3.0   | 14,076 |
| <b>Work status</b>                       |                                                                          |          |       |        |
| Currently working                        | 3.2                                                                      | 2.6      | 3.0   | 32,990 |
| Worked in past but currently not working | 2.5                                                                      | 2.4      | 2.4   | 17,964 |
| Never worked                             | 2.6                                                                      | 2.1      | 2.4   | 21,296 |

continue

continue

| Background characteristics | Having family members who are unable to carry out basic daily activities |            |            | Number        |
|----------------------------|--------------------------------------------------------------------------|------------|------------|---------------|
|                            | Age 45-59*                                                               | Age ≥ 60   | Total      |               |
| <b>MPCE quintile</b>       |                                                                          |            |            |               |
| Poorest                    | 2.8                                                                      | 2.4        | 2.6        | 14,158        |
| Poorer                     | 2.4                                                                      | 2.3        | 2.4        | 14,530        |
| Middle                     | 3.2                                                                      | 2.3        | 2.8        | 14,537        |
| Richer                     | 3.2                                                                      | 2.0        | 2.7        | 14,686        |
| Richest                    | 3.0                                                                      | 2.8        | 2.9        | 14,339        |
| <b>Total</b>               | <b>2.9</b>                                                               | <b>2.4</b> | <b>2.7</b> | <b>72,250</b> |

\* Including spouse irrespective of age.

**Table 14.15 Percentage of older adults having family members who are unable to carry out basic daily activities, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Having family members who are unable to carry out basic daily activities |            |            | Number        |
|---------------------------|--------------------------------------------------------------------------|------------|------------|---------------|
|                           | Age 45-59*                                                               | Age ≥ 60   | Total      |               |
| <b>India</b>              | <b>2.9</b>                                                               | <b>2.4</b> | <b>2.7</b> | <b>72,250</b> |
| <b>North</b>              |                                                                          |            |            |               |
| Chandigarh                | 3.2                                                                      | 5.1        | 3.9        | 1,026         |
| Delhi                     | 3.8                                                                      | 2.2        | 3.2        | 1,319         |
| Haryana                   | 3.1                                                                      | 2.3        | 2.7        | 1,898         |
| Himachal Pradesh          | 5.2                                                                      | 1.8        | 3.6        | 1,388         |
| Jammu & Kashmir           | 2.8                                                                      | 3.0        | 2.9        | 1,613         |
| Punjab                    | 2.0                                                                      | 1.9        | 1.9        | 2,124         |
| Rajasthan                 | 1.8                                                                      | 1.0        | 1.4        | 2,244         |
| Uttarakhand               | 1.1                                                                      | 0.7        | 0.9        | 1,358         |
| <b>Central</b>            |                                                                          |            |            |               |
| Chhattisgarh              | 1.4                                                                      | 2.0        | 1.6        | 2,055         |
| Madhya Pradesh            | 3.7                                                                      | 2.9        | 3.3        | 2,914         |
| Uttar Pradesh             | 1.1                                                                      | 1.4        | 1.3        | 4,567         |
| <b>East</b>               |                                                                          |            |            |               |
| Bihar                     | 4.0                                                                      | 2.7        | 3.3        | 3,520         |
| Jharkhand                 | 3.6                                                                      | 3.2        | 3.4        | 2,464         |
| Odisha                    | 1.9                                                                      | 2.9        | 2.4        | 2,917         |
| West Bengal               | 4.1                                                                      | 2.4        | 3.4        | 3,933         |
| <b>Northeast</b>          |                                                                          |            |            |               |
| Arunachal Pradesh         | 2.5                                                                      | 1.7        | 2.3        | 1,215         |
| Assam                     | 3.0                                                                      | 2.6        | 2.9        | 2,366         |
| Manipur                   | 4.1                                                                      | 3.5        | 3.8        | 1,369         |
| Meghalaya                 | 1.3                                                                      | 2.3        | 1.7        | 969           |
| Mizoram                   | 4.1                                                                      | 2.0        | 3.2        | 1,246         |
| Nagaland                  | 2.0                                                                      | 1.1        | 1.6        | 1,316         |
| Tripura                   | 2.0                                                                      | 0.8        | 1.6        | 1,195         |
| <b>West</b>               |                                                                          |            |            |               |
| Dadra & Nagar Haveli      | 3.6                                                                      | 4.4        | 3.9        | 1,090         |
| Daman & Diu               | 4.8                                                                      | 9.3        | 6.9        | 991           |
| Goa                       | 1.9                                                                      | 1.2        | 1.6        | 1,427         |
| Gujarat                   | 5.3                                                                      | 2.8        | 4.2        | 2,341         |
| Maharashtra               | 3.9                                                                      | 2.7        | 3.3        | 3,973         |
| <b>South</b>              |                                                                          |            |            |               |
| Andaman & Nicobar Islands | 0.4                                                                      | 2.0        | 1.1        | 1,244         |
| Andhra Pradesh            | 2.3                                                                      | 2.7        | 2.5        | 2,679         |
| Karnataka                 | 2.3                                                                      | 2.6        | 2.4        | 2,420         |
| Kerala                    | 8.5                                                                      | 4.4        | 6.3        | 2,497         |
| Lakshadweep               | 5.2                                                                      | 3.0        | 4.1        | 1,139         |
| Puducherry                | 0.5                                                                      | 1.1        | 0.8        | 1,428         |
| Tamil Nadu                | 1.2                                                                      | 2.3        | 1.7        | 3,530         |
| Telangana                 | 3.8                                                                      | 2.1        | 3.0        | 2,475         |

\* Including spouse irrespective of age

**Table 14.16 Percentage of older adults by frequency of taking care of family members who are unable to carry out basic daily activities by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics            | Age 45-59*  |                     | Age ≥ 60    |                     | Total       |                     |                                                                          |
|---------------------------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|--------------------------------------------------------------------------|
|                                       | Taking care | Mean hours per week | Taking care | Mean hours per week | Taking care | Mean hours per week | Number who have family member unable to carry out basic daily activities |
| <b>Place of residence</b>             |             |                     |             |                     |             |                     |                                                                          |
| Rural                                 | 77.4        | 17.7                | 64.0        | 19.2                | 71.7        | 18.3                | 1,240                                                                    |
| Urban                                 | 81.7        | 17.7                | 62.7        | 19.8                | 74.7        | 18.3                | 655                                                                      |
| <b>Sex</b>                            |             |                     |             |                     |             |                     |                                                                          |
| Male                                  | 73.1        | 14.0                | 55.2        | 18.6                | 64.8        | 15.8                | 724                                                                      |
| Female                                | 81.6        | 19.4                | 70.1        | 19.8                | 77.3        | 19.6                | 1,171                                                                    |
| <b>Marital status</b>                 |             |                     |             |                     |             |                     |                                                                          |
| Currently married                     | 78.5        | 18.3                | 69.4        | 18.7                | 75.2        | 18.4                | 1,559                                                                    |
| Widowed                               | 77.1        | 13.7                | 44.1        | 23.0                | 53.1        | 19.3                | 263                                                                      |
| Divorced/Separated/Deserted/Others    | 85.9        | 12.5                | 89.7        | 15.9                | 87.1        | 13.6                | 73                                                                       |
| <b>Living arrangement</b>             |             |                     |             |                     |             |                     |                                                                          |
| Living alone                          | 55.6        | 9.4                 | 41.7        | 13.6                | 44.7        | 12.5                | 23                                                                       |
| Living with spouse                    | 84.8        | 25.5                | 81.7        | 18.9                | 83.0        | 21.5                | 293                                                                      |
| Living with spouse and children       | 77.4        | 17.1                | 63.2        | 18.8                | 73.2        | 17.5                | 1,239                                                                    |
| Living with children (without spouse) | 70.9        | 16.9                | 46.9        | 17.8                | 53.7        | 17.5                | 245                                                                      |
| Living with others only               | 93.6        | 11.9                | 60.4        | 33.4                | 80.1        | 18.5                | 95                                                                       |
| <b>MPCE quintile</b>                  |             |                     |             |                     |             |                     |                                                                          |
| Poorest                               | 86.9        | 13.3                | 71.1        | 15.3                | 79.8        | 14.1                | 328                                                                      |
| Poorer                                | 77.8        | 19.7                | 55.2        | 23.0                | 67.5        | 20.9                | 336                                                                      |
| Middle                                | 80.7        | 17.5                | 66.2        | 17.7                | 75.1        | 17.5                | 377                                                                      |
| Richer                                | 76.9        | 19.6                | 58.7        | 22.4                | 70.7        | 20.4                | 391                                                                      |
| Richest                               | 71.2        | 19.1                | 66.2        | 20.4                | 69.2        | 19.6                | 463                                                                      |
| <b>Total</b>                          | <b>78.7</b> | <b>17.7</b>         | <b>63.7</b> | <b>19.3</b>         | <b>72.6</b> | <b>18.3</b>         | <b>1,895</b>                                                             |

\* Including spouse irrespective of age.

### Key findings: social and family connectedness & social support

- In terms of inter-personal relationships, 82% of the elderly living with a spouse share most of their personal matters with their spouse, followed by their children or grandchildren.
- About 92% of the elderly interviewed have grandchildren, and a fifth look after them. The average hours of care provided to their grandchildren is 18 hours per week, and elderly women spend more time than men in providing this care.
- The main reasons cited for the elderly caring for their grandchildren are that they are the preferred caregivers (73%) and the parents of the children are working outside the home (22%).
- During the last one year, 15% of the elderly received financial support from family members or friends, whereas 6% of the elderly provided financial support to others.
- More than 2% of the elderly have family members who are unable to carry out their basic daily activities such as eating, dressing, taking a bath, and using the toilet. Amongst them, two-thirds of the elderly report that they are taking care of these dependent family members. The mean hours of care provided by the elderly in the last one week is 18 hours.

## 14.5 ILL-TREATMENT EXPERIENCED BY THE ELDERLY

Elder abuse and neglect are increasingly acknowledged as social problems across the world, and India is no exception. The responsibility of caring for the elderly in India is traditionally borne by the immediate family, and most often by sons and daughters (Sekher, 2012). However, with changes in family structure and the emergence of more nuclear families, the vulnerability of the elderly is increasing considerably.

Elder abuse is a multifactorial complex issue that is growing in society, but there are a large number of unreported, unrecognised, and undetected cases. Such incidents should receive significant attention as they can have serious consequences for the health and wellbeing of elderly. The mistreatment of elderly can take place anywhere, and therefore, LASI aimed to understand the prevalence of abuse both inside and outside of the household. Understanding the types, causes, and consequences of the mistreatment of elderly are necessary for its prevention. The following section discusses the prevalence, type, and people responsible for the mistreatment of elderly. Although there is a general perception about the mistreatment perpetrated on the elderly, the exact magnitude and nature of abuse are lesser known in India. The mistreatment of the elderly is multi-dimensional and multi-layered, emerging from differences in gender, economic position, and physical condition (Sebastian and Sekher, 2010 and 2011).

According to LASI, 5% of the elderly have reportedly experienced ill-treatment in the past one year (Table 14.17). Of which, half have experienced it occasionally (i.e., once in two months), a third have experienced it only a few times (i.e., at least once in a year), and about 14% have experienced it frequently (at least once in a fortnight). Elderly women experienced more ill-treatment than elderly men, as have a higher proportion of the elderly who live alone and those who were divorced/separated/deserted. A higher proportion of elderly age 60 and above who live alone and from urban areas experienced ill-treatment frequently, and ill-treatment was more reported among the elderly from scheduled castes. Older adults who had no formal education and those living in rural areas were more often the victims of ill-treatment than their counterparts with some level of education and living in urban areas.

Table 14.18 presents the state variations of ill-treatment experienced by the elderly. The prevalence of the experience of ill-treatment among the elderly is relatively higher in Bihar (12%), Karnataka (10%), West Bengal (8%), Uttar Pradesh (6%), Chhattisgarh (6%), Madhya Pradesh (5%), and Chandigarh (6%). Compared with other states, the elderly in the states of Jammu & Kashmir (36%), Madhya Pradesh (30%), Delhi (29%), Goa (52%), Maharashtra (26%), and Gujarat (25%) experienced ill-treatment more frequently.

The type of ill-treatment experienced by the elderly in the past one year according to their background characteristics is presented in Table 14.19. Among the elderly who experienced ill-treatment in the previous year, more than three-fourths experienced verbal/emotional ill-treatment, a fifth experienced physical ill-treatment, close to a fourth experienced economic exploitation, and more than half experienced neglect. Physical ill-treatment was high (27%) among the rural elderly, compared to 10% among the urban elderly. Similar trends can be found when economic exploitation was considered. The experience of physical ill-treatment was higher among the currently married elderly, whereas verbal/disrespect was more experienced among the divorced/separated/deserted.

Among those who reported as experiencing ill-treatment, the victims of physical ill-treatment was highest in Arunachal Pradesh (45%), Uttar Pradesh (43%), Tamil Nadu (40%), and Puducherry (41%; Table 14.20). Whereas, elderly respondents experiencing verbal/emotional ill-treatment was highest in the states of Uttarakhand (100%), Chhattisgarh (97%), Tripura (94%), Tamil Nadu (89%), and Andhra Pradesh (85%). More elderly in the states of Chhattisgarh (53%), Delhi (52%), and Uttar Pradesh (48%) experienced economic exploitation. The experience of neglect among the elderly was reported more in the southern states of Andhra Pradesh (87%), Telangana (68%), and Tamil Nadu (69%).

**Table 14.17 Percentage of elderly age 60 and above who have experienced ill-treatment during the past one year and frequency of experiencing ill-treatment by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Experienced ill treatment in the past year | Number | Percent distribution of elderly experiencing ill-treatment |              |                | Number experienced ill treatment |
|------------------------------------------|--------------------------------------------|--------|------------------------------------------------------------|--------------|----------------|----------------------------------|
|                                          |                                            |        | Frequently                                                 | Occasionally | Only few times |                                  |
| Place of residence                       |                                            |        |                                                            |              |                |                                  |
| Rural                                    | 5.8                                        | 20,078 | 13.9                                                       | 52.5         | 33.5           | 973                              |
| Urban                                    | 3.8                                        | 10,349 | 16.0                                                       | 54.0         | 30.1           | 297                              |
| Sex                                      |                                            |        |                                                            |              |                |                                  |
| Male                                     | 4.8                                        | 14,576 | 13.2                                                       | 47.5         | 39.3           | 537                              |
| Female                                   | 5.6                                        | 15,851 | 15.2                                                       | 57.0         | 27.8           | 733                              |
| Marital status                           |                                            |        |                                                            |              |                |                                  |
| Currently married                        | 4.9                                        | 19,394 | 13.2                                                       | 49.6         | 37.2           | 748                              |
| Widowed                                  | 5.7                                        | 10,247 | 16.0                                                       | 58.1         | 25.9           | 476                              |
| Divorced/Separated/Deserted/<br>Others   | 6.7                                        | 786    | 14.9                                                       | 46.2         | 38.9           | 46                               |
| Living arrangement                       |                                            |        |                                                            |              |                |                                  |
| Living alone                             | 8.2                                        | 1,576  | 17.4                                                       | 58.0         | 24.6           | 116                              |
| Living with spouse                       | 5.9                                        | 5,931  | 9.0                                                        | 50.3         | 40.8           | 279                              |
| Living with spouse and children          | 4.4                                        | 13,233 | 15.7                                                       | 49.1         | 35.3           | 459                              |
| Living with children (without spouse)    | 5.4                                        | 8,124  | 16.9                                                       | 57.8         | 25.3           | 340                              |
| Living with others only                  | 5.0                                        | 1,563  | 9.8                                                        | 52.9         | 37.3           | 76                               |
| Religion                                 |                                            |        |                                                            |              |                |                                  |
| Hindu                                    | 5.5                                        | 22,305 | 14.4                                                       | 52.8         | 32.8           | 1,051                            |
| Muslim                                   | 5.1                                        | 3,592  | 14.3                                                       | 52.9         | 32.8           | 130                              |
| Christian                                | 1.7                                        | 3,033  | 4.9                                                        | 58.9         | 36.2           | 47                               |
| Others                                   | 2.6                                        | 1,497  | 17.9                                                       | 50.2         | 32.0           | 42                               |
| Caste                                    |                                            |        |                                                            |              |                |                                  |
| Scheduled tribe                          | 4.5                                        | 5,003  | 15.7                                                       | 41.4         | 42.9           | 131                              |
| Scheduled caste                          | 6.7                                        | 4,967  | 17.2                                                       | 51.0         | 31.9           | 297                              |
| Other backward class                     | 5.2                                        | 11,505 | 14.6                                                       | 52.1         | 33.3           | 532                              |
| None of the above                        | 4.5                                        | 8,952  | 10.5                                                       | 59.4         | 30.0           | 310                              |
| Education                                |                                            |        |                                                            |              |                |                                  |
| No schooling                             | 5.9                                        | 16,275 | 13.9                                                       | 54.9         | 31.2           | 804                              |
| Less than 5 years complete               | 4.6                                        | 3,673  | 13.7                                                       | 56.5         | 29.8           | 150                              |
| 5-9 years complete                       | 4.9                                        | 5,839  | 14.3                                                       | 49.0         | 36.6           | 204                              |
| 10 or more years complete                | 3.4                                        | 4,640  | 18.2                                                       | 41.4         | 40.4           | 112                              |
| Work status                              |                                            |        |                                                            |              |                |                                  |
| Currently working                        | 5.9                                        | 9,130  | 13.0                                                       | 50.7         | 36.3           | 430                              |
| Worked in past but currently not working | 5.7                                        | 12,805 | 15.0                                                       | 53.4         | 31.6           | 554                              |
| Never worked                             | 3.7                                        | 8,492  | 15.2                                                       | 55.4         | 29.4           | 286                              |
| MPCE quintile                            |                                            |        |                                                            |              |                |                                  |
| Poorest                                  | 6.0                                        | 6,234  | 15.9                                                       | 49.5         | 34.6           | 315                              |
| Poorer                                   | 5.4                                        | 6,260  | 12.8                                                       | 54.3         | 32.9           | 284                              |
| Middle                                   | 5.7                                        | 6,216  | 14.5                                                       | 51.8         | 33.8           | 260                              |
| Richer                                   | 4.2                                        | 5,986  | 13.2                                                       | 52.4         | 34.4           | 221                              |
| Richest                                  | 4.6                                        | 5,731  | 15.2                                                       | 58.3         | 26.5           | 190                              |
| Total                                    | 5.2                                        | 30,427 | 14.4                                                       | 52.8         | 32.8           | 1,270                            |

Note:

“Frequently” is considered as at least once in a fortnight, “occasionally” is once in two months, and “only few times” is at least once in a year

**Table 14.18 Percentage of elderly age 60 and above who have experienced ill- treatment during the past one year and frequency of experiencing ill-treatment, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Experienced ill treatment in the past year | Number        | Percent distribution of elderly experiencing ill-treatment |              |                | Number experienced ill treatment |
|---------------------------|--------------------------------------------|---------------|------------------------------------------------------------|--------------|----------------|----------------------------------|
|                           |                                            |               | Frequently                                                 | Occasionally | Only few times |                                  |
| <b>India</b>              | <b>5.2</b>                                 | <b>30,427</b> | <b>14.4</b>                                                | <b>52.8</b>  | <b>32.8</b>    | <b>1,270</b>                     |
| <b>North</b>              |                                            |               |                                                            |              |                |                                  |
| Chandigarh                | 5.7                                        | 368           | 7.3                                                        | 59.8         | 33.0           | 17                               |
| Delhi                     | 3.4                                        | 489           | 28.5                                                       | 53.1         | 18.4           | 18                               |
| Haryana                   | 3.4                                        | 825           | 7.3                                                        | 43.2         | 49.5           | 29                               |
| Himachal Pradesh          | 1.1                                        | 606           | -                                                          | 59.9         | 40.1           | 8                                |
| Jammu & Kashmir           | 2.1                                        | 706           | 36.0                                                       | 27.2         | 36.9           | 12                               |
| Punjab                    | 2.1                                        | 971           | 12.9                                                       | 29.5         | 57.6           | 21                               |
| Rajasthan                 | 3.2                                        | 1,061         | 7.3                                                        | 51.8         | 40.9           | 33                               |
| Uttarakhand               | 2.6                                        | 634           | 8.1                                                        | 66.9         | 25.0           | 19                               |
| <b>Central</b>            |                                            |               |                                                            |              |                |                                  |
| Chhattisgarh              | 5.5                                        | 757           | 16.9                                                       | 57.5         | 25.6           | 41                               |
| Madhya Pradesh            | 5.1                                        | 1,260         | 30.1                                                       | 43.4         | 26.5           | 82                               |
| Uttar Pradesh             | 6.4                                        | 2,069         | 16.2                                                       | 58.8         | 25.0           | 132                              |
| <b>East</b>               |                                            |               |                                                            |              |                |                                  |
| Bihar                     | 11.7                                       | 1,762         | 8.9                                                        | 41.6         | 49.4           | 205                              |
| Jharkhand                 | 5.5                                        | 1,144         | 5.6                                                        | 74.0         | 20.5           | 62                               |
| Odisha                    | 2.9                                        | 1,207         | 4.2                                                        | 54.3         | 41.5           | 32                               |
| West Bengal               | 7.6                                        | 1,491         | 9                                                          | 47.1         | 43.9           | 116                              |
| <b>Northeast</b>          |                                            |               |                                                            |              |                |                                  |
| Arunachal Pradesh         | 4.1                                        | 315           | -                                                          | 2.9          | 97.1           | 10                               |
| Assam                     | 2.9                                        | 792           | -                                                          | 69.7         | 30.3           | 20                               |
| Manipur                   | 2.2                                        | 577           | 12.6                                                       | 68.6         | 18.8           | 15                               |
| Meghalaya                 | 0.8                                        | 409           | -                                                          | 61.1         | 38.9           | 3                                |
| Mizoram                   | 0.1                                        | 490           | -                                                          | 100          | -              | 1                                |
| Nagaland                  | 0.3                                        | 592           | -                                                          | -            | 100            | 2                                |
| Tripura                   | 1.7                                        | 448           | 17.9                                                       | 58.6         | 23.4           | 8                                |
| <b>West</b>               |                                            |               |                                                            |              |                |                                  |
| Dadra & Nagar Haveli      | 2.8                                        | 433           | 0.0                                                        | 45.8         | 54.2           | 16                               |
| Daman & Diu               | 3.2                                        | 415           | 15.9                                                       | 17.6         | 66.6           | 13                               |
| Goa                       | 1.3                                        | 612           | 51.5                                                       | 42.7         | 5.8            | 9                                |
| Gujarat                   | 3.0                                        | 944           | 25.2                                                       | 28.1         | 46.7           | 33                               |
| Maharashtra               | 3.9                                        | 1,740         | 25.7                                                       | 56.5         | 17.9           | 64                               |
| <b>South</b>              |                                            |               |                                                            |              |                |                                  |
| Andaman & Nicobar Islands | 1.3                                        | 491           | -                                                          | 28.0         | 72.0           | 7                                |
| Andhra Pradesh            | 2.1                                        | 1,076         | 5.9                                                        | 71.3         | 22.9           | 22                               |
| Karnataka                 | 10.1                                       | 951           | 13.3                                                       | 67.2         | 19.5           | 109                              |
| Kerala                    | 3.8                                        | 1,160         | 2.2                                                        | 43.6         | 54.1           | 38                               |
| Lakshadweep               | -                                          | 493           | -                                                          | -            | -              | -                                |
| Puducherry                | 1.7                                        | 616           | 9.7                                                        | 75.3         | 15.0           | 11                               |
| Tamil Nadu                | 2.4                                        | 1,496         | 22.5                                                       | 63.4         | 14.1           | 41                               |
| Telangana                 | 2.1                                        | 1,027         | 19.0                                                       | 49.8         | 31.2           | 21                               |

Note:

“Frequently” is considered as at least once in a fortnight, “occasionally” as once in two months, and “only few times” as at least once in a year

**Table 14.19 Percentage of elderly age 60 and above by type of ill-treatment experienced during the last one year by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Type of ill-treatment experienced |                      |                          |             | Number experienced ill treatment |
|------------------------------------------|-----------------------------------|----------------------|--------------------------|-------------|----------------------------------|
|                                          | Physical                          | Verbal/<br>Emotional | Economic<br>exploitation | Neglect     |                                  |
| <b>Place of residence</b>                |                                   |                      |                          |             |                                  |
| Rural                                    | 27.3                              | 77.2                 | 28.5                     | 52.5        | 973                              |
| Urban                                    | 10.0                              | 77.5                 | 18.9                     | 52.6        | 297                              |
| <b>Sex</b>                               |                                   |                      |                          |             |                                  |
| Male                                     | 27.7                              | 76.9                 | 28.9                     | 51.8        | 537                              |
| Female                                   | 20.5                              | 77.6                 | 24.6                     | 53.2        | 733                              |
| <b>Marital status</b>                    |                                   |                      |                          |             |                                  |
| Currently married                        | 26.3                              | 76.5                 | 26.9                     | 49.6        | 748                              |
| Widowed                                  | 20.1                              | 78.2                 | 25.1                     | 57.2        | 476                              |
| Divorced/Separated/Deserted/Others       | 18.8                              | 80.9                 | 36.4                     | 47.1        | 46                               |
| <b>Living arrangement</b>                |                                   |                      |                          |             |                                  |
| Living alone                             | 28.0                              | 81.9                 | 25.7                     | 67.6        | 116                              |
| Living with spouse                       | 34.7                              | 79.0                 | 25.9                     | 52.7        | 279                              |
| Living with spouse and children          | 21.0                              | 74.7                 | 26.9                     | 47.2        | 459                              |
| Living with children (without spouse)    | 16.6                              | 76.8                 | 25.2                     | 55.0        | 340                              |
| Living with others only                  | 25.6                              | 81.1                 | 34.5                     | 47.8        | 76                               |
| <b>Religion</b>                          |                                   |                      |                          |             |                                  |
| Hindu                                    | 23.7                              | 77.7                 | 26.6                     | 52.6        | 1,051                            |
| Muslim                                   | 24.4                              | 74.1                 | 27.9                     | 57.7        | 130                              |
| Christian                                | 2.6                               | 87.4                 | 1.4                      | 59.0        | 47                               |
| Others                                   | 28.4                              | 71.0                 | 22.6                     | 15.1        | 42                               |
| <b>Caste</b>                             |                                   |                      |                          |             |                                  |
| Scheduled tribe                          | 17.0                              | 82.2                 | 30.3                     | 46.9        | 131                              |
| Scheduled caste                          | 27.5                              | 77.8                 | 32.3                     | 53.8        | 297                              |
| Other backward class                     | 21.9                              | 79.2                 | 23.7                     | 54.4        | 532                              |
| None of the above                        | 25.1                              | 71.7                 | 24.7                     | 49.5        | 310                              |
| <b>Education</b>                         |                                   |                      |                          |             |                                  |
| No schooling                             | 20.5                              | 78.5                 | 27.0                     | 53.0        | 804                              |
| Less than 5 years complete               | 25.6                              | 74.3                 | 30.8                     | 49.8        | 150                              |
| 5-9 years complete                       | 33.4                              | 75.8                 | 18.2                     | 54.0        | 204                              |
| 10 or more years complete                | 26.4                              | 74.6                 | 33.1                     | 49.7        | 112                              |
| <b>Work status</b>                       |                                   |                      |                          |             |                                  |
| Currently working                        | 25.9                              | 77.0                 | 32.0                     | 50.9        | 430                              |
| Worked in past but currently not working | 23.7                              | 80.0                 | 24.6                     | 56.7        | 554                              |
| Never worked                             | 19.4                              | 71.1                 | 20.7                     | 45.6        | 286                              |
| <b>MPCE quintile</b>                     |                                   |                      |                          |             |                                  |
| Poorest                                  | 19.5                              | 77.4                 | 26.5                     | 51.0        | 315                              |
| Poorer                                   | 22.9                              | 81.2                 | 32.6                     | 52.8        | 284                              |
| Middle                                   | 29.0                              | 72.9                 | 23.0                     | 54.9        | 260                              |
| Richer                                   | 20.3                              | 79.9                 | 27.1                     | 51.3        | 221                              |
| Richest                                  | 27.4                              | 75.0                 | 21.7                     | 52.5        | 190                              |
| <b>Total</b>                             | <b>23.7</b>                       | <b>77.3</b>          | <b>26.5</b>              | <b>52.6</b> | <b>1,270</b>                     |



**Table 14.20 Percentage of elderly age 60 and above by type of ill-treatment experienced during the last one year, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Type of ill-treatment experienced |                      |                          |         | Number experienced ill treatment |
|---------------------------|-----------------------------------|----------------------|--------------------------|---------|----------------------------------|
|                           | Physical                          | Verbal/<br>Emotional | Economic<br>exploitation | Neglect |                                  |
| India                     | 23.7                              | 77.3                 | 26.5                     | 52.6    | 1,270                            |
| <b>North</b>              |                                   |                      |                          |         |                                  |
| Chandigarh                | 0.0                               | 57.8                 | 14.9                     | 25.4    | 17                               |
| Delhi                     | 36.8                              | 60.6                 | 52.4                     | 61.2    | 18                               |
| Haryana                   | 23.9                              | 87.3                 | 30.0                     | 36.9    | 29                               |
| Himachal Pradesh          | 20.9                              | 92.3                 | 32.0                     | 43.5    | 8                                |
| Jammu & Kashmir           | 25.3                              | 78.9                 | 32.3                     | 62.8    | 12                               |
| Punjab                    | 26.6                              | 71.2                 | 3.7                      | 13.2    | 21                               |
| Rajasthan                 | 18.1                              | 85.3                 | 15.9                     | 22.0    | 33                               |
| Uttarakhand               | 18.1                              | 100.0                | 17.3                     | 60.0    | 19                               |
| <b>Central</b>            |                                   |                      |                          |         |                                  |
| Chhattisgarh              | 19.3                              | 96.6                 | 52.9                     | 63.7    | 41                               |
| Madhya Pradesh            | 28.2                              | 53.8                 | 14.6                     | 34.0    | 82                               |
| Uttar Pradesh             | 43.0                              | 87.1                 | 47.6                     | 51.8    | 132                              |
| <b>East</b>               |                                   |                      |                          |         |                                  |
| Bihar                     | 23.9                              | 81.9                 | 20.5                     | 65.9    | 205                              |
| Jharkhand                 | 29.2                              | 82.2                 | 18.0                     | 42.2    | 62                               |
| Odisha                    | 28.0                              | 88.9                 | 24.6                     | 47.9    | 32                               |
| West Bengal               | 10.7                              | 75.2                 | 27.1                     | 59.7    | 116                              |
| <b>Northeast</b>          |                                   |                      |                          |         |                                  |
| Arunachal Pradesh         | 44.5                              | 61.6                 | 47.5                     | 55.5    | 10                               |
| Assam                     | 8.8                               | 84.0                 | 0.0                      | 32.4    | 20                               |
| Manipur                   | 8.5                               | 71.5                 | 25.8                     | 17.6    | 15                               |
| Meghalaya                 | 0.0                               | 0.0                  | 0.0                      | 0.0     | 3                                |
| Mizoram                   | 0.0                               | 0.0                  | 0.0                      | 0.0     | 1                                |
| Nagaland                  | 0.0                               | 0.0                  | 0.0                      | 0.0     | 2                                |
| Tripura                   | 11.6                              | 94.3                 | 35.1                     | 33.0    | 8                                |
| <b>West</b>               |                                   |                      |                          |         |                                  |
| Dadra & Nagar Haveli      | 7.0                               | 54.5                 | 11.9                     | 31.9    | 16                               |
| Daman & Diu               | 4.7                               | 65.6                 | 24.2                     | 44.6    | 13                               |
| Goa                       | 17.4                              | 76.6                 | 11.3                     | 11.3    | 9                                |
| Gujarat                   | 16.7                              | 76.1                 | 21.7                     | 50.1    | 33                               |
| Maharashtra               | 17.4                              | 68.2                 | 34.8                     | 41.0    | 64                               |
| <b>South</b>              |                                   |                      |                          |         |                                  |
| Andaman & Nicobar Islands | 0.0                               | 78.2                 | 0.0                      | 27.5    | 7                                |
| Andhra Pradesh            | 11.3                              | 85.3                 | 9.9                      | 87.0    | 22                               |
| Karnataka                 | 17.9                              | 62.7                 | 20.0                     | 43.3    | 109                              |
| Kerala                    | 11.3                              | 69.6                 | 16.8                     | 50.1    | 38                               |
| Lakshadweep               | —                                 | —                    | —                        | —       | —                                |
| Puducherry                | 40.6                              | 23.9                 | 31.9                     | 11.8    | 11                               |
| Tamil Nadu                | 40.0                              | 88.8                 | 19.6                     | 69.3    | 41                               |
| Telangana                 | 14.0                              | 90.5                 | 16.8                     | 67.9    | 21                               |

Note: “—” indicates no cases reported

## 14.6 PERPETRATORS OF ILL-TREATMENT

Elder abuse or ill-treatment is often perpetuated by those who are supposed to take care of the elderly, LASI confirmed that the main caregivers are often the primary abusers, which worsens the victim's helplessness and makes them reluctant to report such incidents. Elderly were asked who ill-treated them during the last one year, and as shown in Table 14.21, about two-fifths of the elderly who experienced abuse were ill-treated by their own sons or daughters (38%), sons-in-law or daughters-in-law (36%), and spouses (7%). More female elderly were ill-treated by their sons-in-law, daughters-in-law, children, and grandchildren compared to their male counterparts. However, more men were ill-treated by their spouse and siblings compared to women elderly respondents. Elderly who have never worked were ill-treated more by their spouses than those who were currently working or had worked in the past.

Table 14.22 presents that ill-treatment by a spouse among the elderly was high in the states of Arunachal Pradesh (39%), Tamil Nadu (19%), Gujarat (17%), and Madhya Pradesh (17%). About half of the elderly experiencing abuse in Delhi, Chhattisgarh, Dadra & Nagar Haveli, and Andhra Pradesh reported it to be perpetrated by their sons or daughters. Ill-treatment by a son-in-law or daughter-in-law was more prevalent in Haryana, Jammu & Kashmir, Chhattisgarh, and West Bengal.

Elder abuse is a fundamental violation of human rights and results in many health and emotional problems. The true magnitude of elder abuse is still a matter of speculation as it is difficult to quantify and often people are afraid of reporting ill treatment to others. A combination of personal, familial, economic, and psychological factors is responsible for the increasing incidence of the ill-treatment of the elderly (Sebastian and Sekher, 2018).

**Table 14.21 Percentage of elderly age 60 and above by perpetrators of ill-treatment during the last one year by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Spouse     | Children/<br>Grandchildren | Son in law/<br>Daughter-in- law | Siblings   | Others      |
|------------------------------------------|------------|----------------------------|---------------------------------|------------|-------------|
| <b>Place of residence</b>                |            |                            |                                 |            |             |
| Rural                                    | 7.1        | 35.0                       | 35.6                            | 3.6        | 35.7        |
| Urban                                    | 5.4        | 47.4                       | 37.2                            | 3.0        | 26.7        |
| <b>Sex</b>                               |            |                            |                                 |            |             |
| Male                                     | 7.6        | 33.8                       | 21.8                            | 7.2        | 41.2        |
| Female                                   | 6.1        | 40.4                       | 46.8                            | 0.6        | 28.0        |
| <b>Marital status</b>                    |            |                            |                                 |            |             |
| Currently married                        | 11.5       | 32.5                       | 28.9                            | 4.1        | 38.0        |
| Widowed                                  | 0.0        | 47.3                       | 47.8                            | 1.9        | 25.3        |
| Divorced/Separated/Deserted/Others       | 4.3        | 4.7                        | 10.4                            | 12.8       | 65.4        |
| <b>Living arrangement</b>                |            |                            |                                 |            |             |
| Living alone                             | 0.0        | 34.1                       | 37.4                            | 2.1        | 39.4        |
| Living with spouse                       | 9.7        | 33.2                       | 29.5                            | 3.8        | 36.7        |
| Living with spouse and children          | 13.0       | 32.7                       | 28.9                            | 4.4        | 38.1        |
| Living with children (without spouse)    | 0.4        | 51.9                       | 48.2                            | 1.3        | 22.9        |
| Living with others only                  | 0.2        | 16.8                       | 39.2                            | 10.4       | 42.7        |
| <b>Religion</b>                          |            |                            |                                 |            |             |
| Hindu                                    | 6.5        | 38.3                       | 35.7                            | 3.5        | 34.0        |
| Muslim                                   | 9.4        | 33.1                       | 41.1                            | 0.0        | 31.7        |
| Christian                                | 0.0        | 23.6                       | 30.6                            | 0.0        | 50.2        |
| Others                                   | 5.6        | 33.1                       | 19.0                            | 23.7       | 25.8        |
| <b>Caste</b>                             |            |                            |                                 |            |             |
| Scheduled tribe                          | 11.8       | 37.5                       | 50.2                            | 0.0        | 25.9        |
| Scheduled caste                          | 5.7        | 37.7                       | 31.6                            | 1.1        | 41.0        |
| Other backward class                     | 7.0        | 38.3                       | 36.6                            | 4.1        | 30.7        |
| None of the above                        | 5.7        | 35.8                       | 34.6                            | 5.9        | 34.5        |
| <b>Education</b>                         |            |                            |                                 |            |             |
| No schooling                             | 7.3        | 39.4                       | 41.0                            | 1.2        | 31.9        |
| Less than 5 years complete               | 6.7        | 38.4                       | 29.0                            | 4.6        | 38.9        |
| 5-9 years complete                       | 5.9        | 36.7                       | 23.7                            | 8.0        | 35.4        |
| 10 or more years complete                | 3.7        | 24.3                       | 28.6                            | 10.3       | 38.2        |
| <b>Work status</b>                       |            |                            |                                 |            |             |
| Currently working                        | 6.1        | 29.3                       | 30.4                            | 4.7        | 41.4        |
| Worked in past but currently not working | 6.4        | 45.8                       | 37.6                            | 3.5        | 27.4        |
| Never worked                             | 8.8        | 31.9                       | 42.1                            | 1.0        | 35.0        |
| <b>MPCE quintile</b>                     |            |                            |                                 |            |             |
| Poorest                                  | 7.5        | 33.8                       | 36.5                            | 1.3        | 37.7        |
| Poorer                                   | 5.6        | 34.1                       | 38.5                            | 2.9        | 37.4        |
| Middle                                   | 8.2        | 41.3                       | 33.8                            | 3.9        | 26.8        |
| Richer                                   | 5.6        | 37.8                       | 43.3                            | 4.4        | 35.1        |
| Richest                                  | 6.2        | 43.8                       | 25.1                            | 6.6        | 30.9        |
| <b>Total</b>                             | <b>6.7</b> | <b>37.5</b>                | <b>35.9</b>                     | <b>3.5</b> | <b>33.8</b> |

**Table 14.22 Percentage of elderly age 60 and above by perpetrators of ill-treatment during the last one year, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Spouse     | Children/<br>Grandchildren | Son-in-law/<br>Daughter-in-law | Siblings   | Others      |
|---------------------------|------------|----------------------------|--------------------------------|------------|-------------|
| <b>India</b>              | <b>6.7</b> | <b>37.5</b>                | <b>35.9</b>                    | <b>3.5</b> | <b>33.8</b> |
| <b>North</b>              |            |                            |                                |            |             |
| Chandigarh                | 11.8       | 38.6                       | 32.9                           | 0.0        | 24.2        |
| Delhi                     | 5.6        | 82.6                       | 43.7                           | 0.0        | 8.2         |
| Haryana                   | 0.0        | 43.5                       | 59.5                           | 3.2        | 19.4        |
| Himachal Pradesh          | 0.0        | 12.0                       | 16.9                           | 0.0        | 65.7        |
| Jammu & Kashmir           | 0.0        | 42.4                       | 57.2                           | 0.0        | 29.3        |
| Punjab                    | 8.0        | 41.3                       | 28.0                           | 5.0        | 28.8        |
| Rajasthan                 | 4.4        | 29.3                       | 45.4                           | 2.2        | 27.4        |
| Uttarakhand               | 4.1        | 29.6                       | 34.2                           | 4.1        | 41.8        |
| <b>Central</b>            |            |                            |                                |            |             |
| Chhattisgarh              | 15.9       | 60.2                       | 68.0                           | 1.9        | 27.1        |
| Madhya Pradesh            | 16.7       | 41.3                       | 30.2                           | 1.8        | 23.9        |
| Uttar Pradesh             | 3.0        | 23.7                       | 23.3                           | 1.0        | 56.7        |
| <b>East</b>               |            |                            |                                |            |             |
| Bihar                     | 7.4        | 34.8                       | 37.2                           | 1.3        | 35.6        |
| Jharkhand                 | 11.5       | 38.6                       | 31.8                           | 6.0        | 37.2        |
| Odisha                    | 2.4        | 37.5                       | 40.7                           | 2.0        | 39.7        |
| West Bengal               | 6.9        | 55.4                       | 53.6                           | 6.6        | 28.0        |
| <b>Northeast</b>          |            |                            |                                |            |             |
| Arunachal Pradesh         | 38.5       | 36.4                       | 0.0                            | 0.0        | 42.3        |
| Assam                     | 0.0        | 33.5                       | 46.0                           | 3.5        | 32.7        |
| Manipur                   | 12.2       | 19.6                       | 0.0                            | 0.0        | 52.7        |
| Meghalaya                 | -          | -                          | -                              | -          | 0.0         |
| Mizoram                   | -          | -                          | -                              | -          | 0.0         |
| Nagaland                  | -          | -                          | -                              | -          | 0.0         |
| Tripura                   | 0.0        | 10.0                       | 10.0                           | 0.0        | 84.9        |
| <b>West</b>               |            |                            |                                |            |             |
| Dadra & Nagar Haveli      | 0.0        | 57.1                       | 12.8                           | 32.0       | 14.3        |
| Daman & Diu               | 2.2        | 39.9                       | 44.3                           | 0.0        | 39.2        |
| Goa                       | 0.0        | 0.0                        | 32.4                           | 0.0        | 42.4        |
| Gujarat                   | 17.0       | 24.5                       | 52.3                           | 3.6        | 22.2        |
| Maharashtra               | 2.2        | 39.0                       | 25.1                           | 13.4       | 25.6        |
| <b>South</b>              |            |                            |                                |            |             |
| Andaman & Nicobar Islands | 0.0        | 19.0                       | 8.4                            | 0.0        | 56.8        |
| Andhra Pradesh            | 0.0        | 49.6                       | 22.8                           | 0.0        | 48.5        |
| Karnataka                 | 8.8        | 30.3                       | 39.0                           | 6.9        | 24.5        |
| Kerala                    | 1.1        | 31.0                       | 4.9                            | 6.7        | 51.3        |
| Lakshadweep               | -          | -                          | -                              | -          | -           |
| Puducherry                | 0.0        | 20.1                       | 8.8                            | 0.0        | 48.2        |
| Tamil Nadu                | 18.9       | 34.0                       | 30.7                           | 2.3        | 27.4        |
| Telangana                 | 0.0        | 47.3                       | 51.0                           | 3.8        | 44.5        |

Note: “-” indicates no cases reported

### Key findings: ill-treatment and perpetrators of ill-treatment

- About, 5% of the elderly in India state that they experienced ill-treatment in the past one year.
- The ill-treatment is relatively more frequent amongst elderly women and those who live in rural areas. The elderly with no schooling, who are divorced, separated, or deserted, and belong to scheduled castes are more likely to be ill-treated.
- Amongst those who experience ill-treatment, more than three-fourths experience verbal or emotional ill-treatment, a fifth face physical ill-treatment, and close to a third have been victims of economic exploitation during the last one year.
- Care-givers are the primary abusers of the elderly. Among those experience ii-treatment, two-fifths of the elderly are ill-treated by their own sons or daughters (41%) followed by their son-in-law or daughter-in-law (36%). This worsens the victim's sense of helplessness and makes them reluctant to report such incidents.

## 15. DECISION-MAKING, SOCIAL PARTICIPATION, AND LIFE SATISFACTION

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With a decline in financial status and functional abilities, the elderly are often left out of the process of familial decision-making. The decreasing capacities in decision-making amongst older adults age 45 and above may also reduce their confidence and therefore affect their wellbeing. The dynamics related to decision-making and the experiences related to ageing are important psycho-social issues that affect the overall wellbeing and life satisfaction of the elderly. Life satisfaction is highly governed by the ability to make choices in life, especially for older adults. Individuals are faced with various socio-economic and emotional changes in old age, which affects their ability to continue making decisions for themselves and their families. One of the biggest challenges is to optimise the opportunities for increasing the mental and social wellbeing of the elderly so that they can have healthy and productive lives. Social participation is also an important aspect of old age and should be integrated into the care of the elderly. However, there is insufficient scientific evidence related to the social participation of elderly people in India. This chapter deals with various psycho-social components that are integral to the years in later life such as intra-household decision-making, participation in social activities, participation and involvement in social organisations, life satisfaction, and the everyday discrimination experienced in the life of older adults.

### 15.1 INTRA-HOUSEHOLD DECISION-MAKING

Economic and human development is critically influenced by decision-making and resource allocation at the household level. Many decisions made at the household level influence the welfare of the individuals living in that household as well as their communities. The intra-household dynamics of decision-making may have significant impact on the welfare outcomes of family members (Angel-Urdinola and Wodon, 2010). Within households, many factors such as age, marital status, culture, income level, and education influence the dynamics of intra-household decision-making.

Old age is defined as a period of disengagement from major life activities pertaining to work, earning, and household management related responsibilities, and decision-making shifts to the younger and earning generation. Financial status also affects a proper decision-making capacity. However, the nature of the aged cohort is changing rapidly, affecting the overall household dynamics. People are living longer and have an increased post-retirement life span, which will be full of loneliness and emptiness if they are not involved in family and social activities in their later years. To understand the role and involvement of the elderly in decision-making, the respondents were asked about who usually makes the decisions in important household matters such as children's marriages, the buying and selling properties, and the education of family members.

Table 15.1 shows the extent of decision-making amongst older adults in selected household matters by place of residence and sex. Around 3% of older adult men age 45 and above do not have any role in decision-making for the marriage of their son or daughter compared to 6% of older adult women. More than a tenth (13%) of older adult women do not have any role in decision-making for the education of family members, 5% make decisions alone, and 82% contribute towards their family's decision-making. However, 7% of older adult men do not have any role, and 15% decide alone when the education of family members is concerned. The decision-making power is low amongst the elderly age 60 and above compared to older adults age 45–59. The number of older adult men making decisions alone is higher in rural areas compared to urban areas, and 16% from rural areas make decisions alone on the education of family members compared to 13% in urban areas, whereas 19% make decisions alone when buying and selling property is considered compared to 16% of the rural elderly men. More women than men are engaged as joint decision-makers, irrespective of age.

**Table 15.1 Percent distribution of older adults by role in decision-making in selected household matters according to place of residence and sex, India, LASI Wave 1, 2017-18**

| Age 45-59*                            |               |               |              |               |               |               |
|---------------------------------------|---------------|---------------|--------------|---------------|---------------|---------------|
|                                       | Rural         |               | Urban        |               | Total         |               |
| Household matters                     | Male          | Female        | Male         | Female        | Male          | Female        |
| <b>Marriage of son/daughter</b>       |               |               |              |               |               |               |
| No role                               | 1.1           | 3.5           | 3.2          | 2.9           | 1.7           | 3.3           |
| Decides alone                         | 19.5          | 5.6           | 12.6         | 5.5           | 17.3          | 5.6           |
| Joint decision                        | 79.4          | 90.8          | 84.3         | 91.6          | 80.9          | 91.1          |
| <b>Number</b>                         | <b>8,844</b>  | <b>14,265</b> | <b>4,937</b> | <b>8,274</b>  | <b>13,781</b> | <b>22,539</b> |
| <b>Buying and selling of property</b> |               |               |              |               |               |               |
| No role                               | 1.6           | 6.7           | 1.3          | 4.3           | 1.5           | 5.9           |
| Decides alone                         | 20.1          | 5.3           | 17.2         | 5.2           | 19.2          | 5.3           |
| Joint decision                        | 78.2          | 88.0          | 81.4         | 90.5          | 79.3          | 88.9          |
| <b>Number</b>                         | <b>9,248</b>  | <b>14,703</b> | <b>5,273</b> | <b>8,716</b>  | <b>14,521</b> | <b>23,419</b> |
| <b>Education of family member</b>     |               |               |              |               |               |               |
| No role                               | 3.3           | 8.2           | 1.9          | 4.2           | 2.8           | 6.8           |
| Decides alone                         | 17.1          | 4.9           | 15.1         | 5.2           | 16.5          | 5.0           |
| Joint decision                        | 79.6          | 87.0          | 83.0         | 90.7          | 80.7          | 88.2          |
| <b>Number</b>                         | <b>9,024</b>  | <b>14,192</b> | <b>5,087</b> | <b>8,366</b>  | <b>14,111</b> | <b>22,558</b> |
| Age ≥ 60                              |               |               |              |               |               |               |
|                                       | Rural         |               | Urban        |               | Total         |               |
| Household matters                     | Male          | Female        | Male         | Female        | Male          | Female        |
| <b>Marriage of son/daughter</b>       |               |               |              |               |               |               |
| No role                               | 5.1           | 12.4          | 3.6          | 8.8           | 4.7           | 11.3          |
| Decides alone                         | 17.6          | 6.6           | 12.9         | 6.6           | 16.4          | 6.6           |
| Joint decision                        | 77.3          | 81.0          | 83.6         | 84.7          | 79.0          | 82.1          |
| <b>Number</b>                         | <b>8,790</b>  | <b>8,718</b>  | <b>4,283</b> | <b>4,639</b>  | <b>13,073</b> | <b>13,357</b> |
| <b>Buying and selling of property</b> |               |               |              |               |               |               |
| No role                               | 5.0           | 16.7          | 3.2          | 12.1          | 4.5           | 15.3          |
| Decides alone                         | 18.3          | 6.7           | 14.2         | 6.1           | 17.2          | 6.5           |
| Joint decision                        | 76.7          | 76.6          | 82.7         | 81.8          | 78.3          | 78.1          |
| <b>Number</b>                         | <b>9,379</b>  | <b>9,283</b>  | <b>4,639</b> | <b>4,991</b>  | <b>14,018</b> | <b>14,274</b> |
| <b>Education of family member</b>     |               |               |              |               |               |               |
| No role                               | 11.7          | 24.0          | 7.1          | 17.3          | 10.5          | 22.0          |
| Decides alone                         | 14.3          | 5.0           | 10.7         | 5.0           | 13.4          | 5.0           |
| Joint decision                        | 73.9          | 71.0          | 82.2         | 77.7          | 76.2          | 73.0          |
| <b>Number</b>                         | <b>8,640</b>  | <b>8,518</b>  | <b>4,232</b> | <b>4,491</b>  | <b>12,872</b> | <b>13,009</b> |
| Total                                 |               |               |              |               |               |               |
|                                       | Rural         |               | Urban        |               | Total         |               |
| Household matters                     | Male          | Female        | Male         | Female        | Male          | Female        |
| <b>Marriage of son/daughter</b>       |               |               |              |               |               |               |
| No role                               | 3.2           | 7.1           | 3.4          | 5.0           | 3.2           | 6.4           |
| Decides alone                         | 18.5          | 6.0           | 12.7         | 5.9           | 16.8          | 6.0           |
| Joint decision                        | 78.3          | 86.9          | 84.0         | 89.1          | 79.9          | 87.6          |
| <b>Number</b>                         | <b>17,634</b> | <b>22,983</b> | <b>9,220</b> | <b>12,913</b> | <b>26,854</b> | <b>35,896</b> |
| <b>Buying and selling of property</b> |               |               |              |               |               |               |
| No role                               | 3.4           | 10.8          | 2.2          | 7.2           | 3.1           | 9.7           |
| Decides alone                         | 19.2          | 5.9           | 15.8         | 5.5           | 18.2          | 5.8           |
| Joint decision                        | 77.4          | 83.3          | 82.0         | 87.2          | 78.8          | 84.6          |
| <b>Number</b>                         | <b>18,627</b> | <b>23,986</b> | <b>9,912</b> | <b>13,707</b> | <b>28,539</b> | <b>37,693</b> |
| <b>Education of family member</b>     |               |               |              |               |               |               |
| No role                               | 7.7           | 14.5          | 4.3          | 8.9           | 6.7           | 12.7          |
| Decides alone                         | 15.7          | 4.9           | 13.1         | 5.1           | 14.9          | 5.0           |
| Joint decision                        | 76.7          | 80.6          | 82.7         | 86.0          | 78.4          | 82.3          |
| <b>Number</b>                         | <b>17,664</b> | <b>22,710</b> | <b>9,319</b> | <b>12,857</b> | <b>26,983</b> | <b>35,567</b> |

\* Including spouse irrespective of age.

## 15.2 PARTICIPATION IN SOCIAL ACTIVITIES

Social isolation is a major risk factor for morbidities and mortality amongst the elderly. One way to reduce social isolation amongst the elderly is to increase their social participation. Having experienced many of the major responsibilities in life such as raising children and completing an employment period, the elderly have relatively more free time than the younger generations, and social participation and involvement in social activities or events becomes a more important part of their life. Social participation varies according to the social and economic context of individuals among many other factors. Participation in social activities include a broad range of activities such as volunteering, informal caregiving, participation in educational activities, participation in social leisure activities, and religious participation. Social participation is particularly important because of its various positive effects on the well-being and satisfaction of individuals. For ageing to be successful, active, and healthy, social participation necessarily becomes a key concept of social policy (Raymond et al., 2013). To understand the social life and participation of the elderly, respondents of LASI were asked about their involvements with different social organisations, religious groups, and in other social and civic activities.

### *15.2.1 Participation and Involvement in Social Organisations*

Involvement in social organisations has been considered as a measure of social participation in various studies as they encompass a vast network of social relationships and provides opportunities for social interaction. LASI respondents were asked if they are a member of any social organisation or group where they can interact with other individuals, groups, or institutions. Table 15.3 presents the social participation of older adults by states/UTs.

Around 9% of older adults aged 45–59 are members of a social organisation compared to 5% amongst the elderly age 60 and above (Table 15.2). The number of older adults who are members of a social organisation is particularly high in states such as Mizoram (63%), Nagaland (22%), Kerala (20%), Odisha (17%), Manipur (16%), Telangana (15%), and Assam (15%).

Table 15.4 shows the percentage of older adults who are members of a social organisation. Almost one-third of the elderly are engaged in self-help groups (SHGs), or non-government organization (NGOs), cooperatives, or mahila mandals (women self-help groups), and another 33% are members of religious groups. The elderly are also members of community or caste organisations (15%) and farmers' associations, environmental groups, or political parties (13%). Eleven percent of the elderly are members of senior citizen's associations or social clubs. In addition, 21% of the elderly men are members of farmers' associations, environmental groups, or political parties compared to only 3% of the elderly women. In contrast, 69% of the elderly women are members of SHGs or NGOs, and this percentage is as low as 9% amongst the elderly men. Participation in religious or spiritual organisations, educational or sports organisations, or senior citizen's clubs is more common amongst elderly men than women. More widowed and divorced, separated, or deserted elderly are members of SHGs or NGOs than the currently married elderly, and almost three-fifths of the elderly with no schooling are members of SHGs or NGOs.



**Table 15.2 Percentage of older adults having membership in any organization by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59* | Number        | Age ≥ 60   | Number        | Total      | Number        |
|------------------------------------------|------------|---------------|------------|---------------|------------|---------------|
| <b>Place of residence</b>                |            |               |            |               |            |               |
| Rural                                    | 10.2       | 25,809        | 4.4        | 20,725        | 7.4        | 46,534        |
| Urban                                    | 6.8        | 14,977        | 5.5        | 10,739        | 6.2        | 25,716        |
| <b>Sex</b>                               |            |               |            |               |            |               |
| Male                                     | 7.6        | 15,471        | 5.9        | 15,098        | 6.7        | 30,569        |
| Female                                   | 9.9        | 25,315        | 3.6        | 16,366        | 7.3        | 41,681        |
| <b>Marital status</b>                    |            |               |            |               |            |               |
| Currently married                        | 9.3        | 35,476        | 5.8        | 19,920        | 7.9        | 55,396        |
| Widowed                                  | 7.4        | 3,874         | 2.9        | 10,719        | 4.0        | 14,593        |
| Divorced/Separated/Deserted/Others       | 7.7        | 1,436         | 4.3        | 825           | 6.4        | 2,261         |
| <b>Living arrangement</b>                |            |               |            |               |            |               |
| Living alone                             | 9.5        | 691           | 3.8        | 1,622         | 5.1        | 2,313         |
| Living with spouse                       | 8.8        | 4,623         | 5.6        | 6,215         | 6.9        | 10,838        |
| Living with spouse and children          | 9.4        | 30,198        | 5.8        | 13,465        | 8.2        | 43,663        |
| Living with children (without spouse)    | 7.1        | 4,076         | 2.8        | 8,418         | 4.0        | 12,494        |
| Living with others only                  | 7.1        | 1,198         | 3.4        | 1,744         | 4.8        | 2,942         |
| <b>Religion</b>                          |            |               |            |               |            |               |
| Hindu                                    | 9.1        | 29,936        | 4.6        | 23,037        | 7.0        | 52,973        |
| Muslim                                   | 7.2        | 4,936         | 3.6        | 3,731         | 5.6        | 8,667         |
| Christian                                | 17.5       | 4,065         | 12.4       | 3,150         | 15.2       | 7,215         |
| Others                                   | 5.0        | 1,849         | 5.2        | 1,546         | 5.1        | 3,395         |
| <b>Caste</b>                             |            |               |            |               |            |               |
| Scheduled tribe                          | 10.9       | 7,336         | 5.0        | 5,173         | 8.3        | 12,509        |
| Scheduled caste                          | 8.2        | 6,906         | 3.3        | 5,140         | 6.0        | 12,046        |
| Other backward class                     | 9.6        | 15,298        | 4.4        | 11,886        | 7.2        | 27,184        |
| None of the above                        | 8.1        | 11,246        | 6.0        | 9,265         | 7.1        | 20,511        |
| <b>Education</b>                         |            |               |            |               |            |               |
| No schooling                             | 7.1        | 16,322        | 2.7        | 16,889        | 4.8        | 33,211        |
| Less than 5 years complete               | 11.5       | 4,273         | 5.7        | 3,781         | 8.7        | 8,054         |
| 5-9 years complete                       | 10.6       | 10,892        | 5.5        | 6,017         | 8.6        | 16,909        |
| 10 or more years complete                | 10.0       | 9,299         | 11.2       | 4,777         | 10.4       | 14,076        |
| <b>Work status</b>                       |            |               |            |               |            |               |
| Currently working                        | 9.9        | 23,683        | 6.8        | 9,307         | 9.0        | 32,990        |
| Worked in past but currently not working | 8.9        | 4,587         | 4.5        | 13,377        | 5.6        | 17,964        |
| Never worked                             | 7.2        | 12,516        | 2.7        | 8,780         | 5.2        | 21,296        |
| <b>MPCE quintile</b>                     |            |               |            |               |            |               |
| Poorest                                  | 6.2        | 7,674         | 2.8        | 6,484         | 4.5        | 14,158        |
| Poorer                                   | 8.1        | 8,053         | 4.1        | 6,477         | 6.2        | 14,530        |
| Middle                                   | 10.1       | 8,121         | 4.5        | 6,416         | 7.4        | 14,537        |
| Richer                                   | 10.7       | 8,516         | 5.7        | 6,170         | 8.5        | 14,686        |
| Richest                                  | 10.2       | 8,422         | 7.1        | 5,917         | 8.9        | 14,339        |
| <b>Total</b>                             | <b>9.0</b> | <b>40,786</b> | <b>4.7</b> | <b>31,464</b> | <b>7.0</b> | <b>72,250</b> |

\* Including spouse irrespective of age.

**Table 15.3 Percentage of older adults having membership in any organization, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age 45-59* | Number        | Age ≥ 60   | Number        | Total      | Number        |
|---------------------------|------------|---------------|------------|---------------|------------|---------------|
| <b>India</b>              | <b>9.0</b> | <b>40,786</b> | <b>4.7</b> | <b>31,464</b> | <b>7.0</b> | <b>72,250</b> |
| <b>North</b>              |            |               |            |               |            |               |
| Chandigarh                | 3.2        | 632           | 5.8        | 394           | 4.2        | 1,026         |
| Delhi                     | 1.0        | 824           | 3.3        | 495           | 1.9        | 1,319         |
| Haryana                   | 2.0        | 1,050         | 1.5        | 848           | 1.8        | 1,898         |
| Himachal Pradesh          | 12.2       | 767           | 8.4        | 621           | 10.4       | 1,388         |
| Jammu & Kashmir           | 0.7        | 882           | 2.8        | 731           | 1.7        | 1,613         |
| Punjab                    | 4.6        | 1,120         | 4.0        | 1,004         | 4.3        | 2,124         |
| Rajasthan                 | 3.7        | 1,166         | 2.2        | 1,078         | 2.9        | 2,244         |
| Uttarakhand               | 2.7        | 717           | 3.1        | 641           | 2.9        | 1358          |
| <b>Central</b>            |            |               |            |               |            |               |
| Chhattisgarh              | 16.5       | 1,275         | 9.8        | 780           | 13.9       | 2,055         |
| Madhya Pradesh            | 5.2        | 1,601         | 2.1        | 1,313         | 3.7        | 2,914         |
| Uttar Pradesh             | 1.2        | 2,398         | 0.9        | 2,169         | 1.1        | 4,567         |
| <b>East</b>               |            |               |            |               |            |               |
| Bihar                     | 7.5        | 1,712         | 3.8        | 1,808         | 5.5        | 3,520         |
| Jharkhand                 | 5.7        | 1,296         | 2.7        | 1,168         | 4.2        | 2,464         |
| Odisha                    | 24.6       | 1,680         | 7.8        | 1,237         | 17.2       | 2,917         |
| West Bengal               | 11.0       | 2,389         | 5.2        | 1,544         | 8.6        | 3,933         |
| <b>Northeast</b>          |            |               |            |               |            |               |
| Arunachal Pradesh         | 13.6       | 897           | 12.1       | 318           | 13.2       | 1,215         |
| Assam                     | 17.1       | 1,550         | 11.8       | 816           | 15.2       | 2,366         |
| Manipur                   | 19.8       | 763           | 12.5       | 606           | 16.4       | 1,369         |
| Meghalaya                 | 9.0        | 557           | 10.5       | 412           | 9.6        | 969           |
| Mizoram                   | 65.1       | 715           | 61.4       | 531           | 63.4       | 1,246         |
| Nagaland                  | 22.8       | 708           | 21.1       | 608           | 22.0       | 1,316         |
| Tripura                   | 8.3        | 734           | 5.6        | 461           | 7.2        | 1,195         |
| <b>West</b>               |            |               |            |               |            |               |
| Dadra & Nagar Haveli      | 9.9        | 639           | 4.7        | 451           | 7.9        | 1,090         |
| Daman & Diu               | 5.2        | 557           | 9.7        | 434           | 7.3        | 991           |
| Goa                       | 13.4       | 790           | 6.2        | 637           | 10.1       | 1,427         |
| Gujarat                   | 8.3        | 1,350         | 8.5        | 991           | 8.4        | 2,341         |
| Maharashtra               | 3.2        | 2,183         | 3.7        | 1,790         | 3.4        | 3,973         |
| <b>South</b>              |            |               |            |               |            |               |
| Andaman & Nicobar Islands | 5.0        | 721           | 4.3        | 523           | 4.7        | 1244          |
| Andhra Pradesh            | 15.7       | 1,574         | 10.1       | 1,105         | 13.3       | 2,679         |
| Karnataka                 | 17.0       | 1,416         | 6.7        | 1,004         | 12.9       | 2,420         |
| Kerala                    | 23.8       | 1,288         | 16.7       | 1,209         | 20.1       | 2,497         |
| Lakshadweep               | 3.8        | 637           | 5.5        | 502           | 4.6        | 1,139         |
| Puducherry                | 7.9        | 788           | 2.6        | 640           | 5.4        | 1,428         |
| Tamil Nadu                | 6.1        | 1,996         | 2.9        | 1,534         | 4.7        | 3,530         |
| Telangana                 | 21.3       | 1,414         | 8.0        | 1,061         | 15.4       | 2,475         |

\* Including spouse irrespective of age.

**Table 15.4 Percentage of elderly age 60 and above having membership by type of organization by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Farmers' association /Political party | RWA/ clubs | Community/ Caste | SHG/NGO     | Religious/ Spiritual | Education/ Sports | Senior citizen Clubs | Number       |
|------------------------------------------|---------------------------------------|------------|------------------|-------------|----------------------|-------------------|----------------------|--------------|
| <b>Place of residence</b>                |                                       |            |                  |             |                      |                   |                      |              |
| Rural                                    | 16.3                                  | 0.5        | 13.1             | 40.5        | 29.2                 | 2.7               | 6.3                  | 1,365        |
| Urban                                    | 7.6                                   | 3.4        | 19.7             | 18.2        | 39.8                 | 4.8               | 19.3                 | 761          |
| <b>Sex</b>                               |                                       |            |                  |             |                      |                   |                      |              |
| Male                                     | 20.5                                  | 1.6        | 21.7             | 8.5         | 40.7                 | 5.0               | 15.9                 | 1,289        |
| Female                                   | 2.8                                   | 1.3        | 5.9              | 69.1        | 21.0                 | 1.0               | 3.0                  | 837          |
| <b>Marital status</b>                    |                                       |            |                  |             |                      |                   |                      |              |
| Currently married                        | 15.9                                  | 1.5        | 16.9             | 27.0        | 33.6                 | 4.1               | 12.5                 | 1,622        |
| Widowed                                  | 5.2                                   | 0.9        | 11.3             | 52.5        | 28.9                 | 1.2               | 5.1                  | 440          |
| Divorced/Separated/Deserted/ Others      | 9.9                                   | 7.0        | 1.9              | 39.3        | 44.0                 | 1.1               | 2.3                  | 64           |
| <b>Religion</b>                          |                                       |            |                  |             |                      |                   |                      |              |
| Hindu                                    | 14.0                                  | 1.4        | 15.9             | 33.8        | 30.2                 | 3.5               | 11.0                 | 1,238        |
| Muslim                                   | 10.7                                  | 0.0        | 13.7             | 32.0        | 37.4                 | 4.2               | 10.0                 | 145          |
| Christian                                | 4.1                                   | 1.0        | 16.5             | 33.3        | 49.2                 | 1.6               | 6.3                  | 661          |
| Others                                   | 24.6                                  | 5.8        | 4.5              | 17.2        | 43.0                 | 2.0               | 12.9                 | 82           |
| <b>Caste</b>                             |                                       |            |                  |             |                      |                   |                      |              |
| Scheduled tribe                          | 9.9                                   | 0.0        | 18.0             | 38.4        | 39.7                 | 0.6               | 6.3                  | 684          |
| Scheduled caste                          | 14.5                                  | 3.3        | 11.7             | 41.4        | 29.1                 | 1.0               | 6.6                  | 210          |
| Other backward class                     | 13.0                                  | 0.8        | 19.6             | 38.5        | 28.3                 | 2.1               | 7.7                  | 656          |
| None of the above                        | 14.3                                  | 2.0        | 10.9             | 21.8        | 37.9                 | 6.5               | 16.7                 | 576          |
| <b>Education</b>                         |                                       |            |                  |             |                      |                   |                      |              |
| No schooling                             | 8.3                                   | 0.0        | 15.8             | 58.3        | 19.4                 | 0.0               | 2.7                  | 623          |
| Less than 5 years complete               | 14.2                                  | 1.9        | 18.2             | 36.6        | 32.0                 | 0.3               | 6.2                  | 362          |
| 5-9 years complete                       | 21.9                                  | 0.8        | 12.3             | 27.1        | 38.3                 | 3.4               | 8.7                  | 508          |
| 10 or more years complete                | 12.6                                  | 3.1        | 15.6             | 10.6        | 42.5                 | 8.0               | 21.5                 | 633          |
| <b>Work status</b>                       |                                       |            |                  |             |                      |                   |                      |              |
| Currently working                        | 19.6                                  | 1.0        | 16.8             | 28.8        | 33.7                 | 2.2               | 8.2                  | 884          |
| Worked in past but currently not working | 9.3                                   | 1.8        | 17.8             | 28.3        | 34.9                 | 5.2               | 15.0                 | 903          |
| Never worked                             | 5.8                                   | 1.8        | 4.3              | 57.8        | 24.1                 | 2.0               | 6.2                  | 339          |
| <b>MPCE quintile</b>                     |                                       |            |                  |             |                      |                   |                      |              |
| Poorest                                  | 14.4                                  | 0.7        | 16.0             | 41.7        | 23.2                 | 0.2               | 9.5                  | 263          |
| Poorer                                   | 10.7                                  | 1.3        | 18.8             | 42.1        | 25.0                 | 4.4               | 8.3                  | 390          |
| Middle                                   | 12.1                                  | 1.5        | 13.7             | 31.6        | 36.8                 | 2.5               | 7.7                  | 441          |
| Richer                                   | 11.9                                  | 2.2        | 12.7             | 28.4        | 41.6                 | 2.4               | 8.7                  | 464          |
| Richest                                  | 17.3                                  | 1.2        | 16.1             | 26.9        | 32.1                 | 5.9               | 17.2                 | 568          |
| <b>Total</b>                             | <b>13.4</b>                           | <b>1.5</b> | <b>15.3</b>      | <b>33.0</b> | <b>32.8</b>          | <b>3.4</b>        | <b>10.6</b>          | <b>2,126</b> |

### Key findings: decision making and participation

- With regard to household decision-making, 11% percent of elderly women report no role in decision-making on marriages in the family, 15% on buying or selling property, and 22% on decisions related to the education of family members. With declining financial power and functional abilities, many of the elderly are left out of family decision-making processes.
- Nine percent of older adults (age 45–59) are members of a social or community organisation compared to only 5% amongst the elderly age 60 and above, indicating lower social or community participation amongst the elderly.

### 15.3 LIFE SATISFACTION

Life satisfaction is an important psycho-social measure of the well-being of individuals, especially in old age. Old age brings about various changes in the roles and functions within the family and society, paving the way for dependency in life. Dependency on others can manifest into a decreased quality of life and diminished life satisfaction. Life satisfaction is also considered as an important dimension of successful ageing as it is reflective of perceived social support and quality of life. Life satisfaction is the perception by individuals of their social-economic and cultural position, and a reflection of their goals and expectations in life. Therefore, life satisfaction in old age is broadly determined by the socio-economic status of individuals, their financial capabilities, health status, social support, and amount of their social interaction.

Life satisfaction is often considered a common measure of overall wellbeing, and more specifically, it reflects a psychological dimension, focusing more on the component of ‘feeling’ or subjective well-being (Diener, 2009). Greater life satisfaction has been associated with positive health behaviours while lesser satisfaction is considered as one of the general indicators of health risks (Koivumaa-Honkanen et al., 2000). Greater life satisfaction is also associated with better physical and mental health outcomes and longevity (Beutell, 2006). Thus, it can serve as a universal indicator of successful ageing (Tate et al., 2003). The concept of life satisfaction is a subjective image of human welfare, and ageing perceptions and life satisfaction differ amongst various cultures (Kiarsipour et al., 2017). The LASI attempted to capture life satisfaction amongst the elderly.

In this section, life satisfaction of the older adults is examined based on five statements: *a) In most ways, my life is close to ideal; b) the conditions of my life are excellent; c) I am satisfied with my life; d) so far, I have got the important things I want in life; and e) if I could live my life again, I would change almost nothing.* The respondents were asked to give their responses using seven categories of ‘strongly disagree’, ‘somewhat disagree’, ‘slightly disagree’, ‘neither agree nor disagree’, ‘slightly agree’, ‘somewhat agree’, and ‘strongly agree’. Using the responses to the five statements regarding life satisfaction, a scale was constructed. The categories of the scale are ‘low satisfaction’ (score of 5–20), ‘medium satisfaction’ (score of 21–25), and ‘high satisfaction’ (score of 26–35).

Table 15.5 shows that around 32% of the elderly have low life satisfaction, 22% have medium life satisfaction, and 46% have high life satisfaction. The reported level of satisfaction in life is higher amongst the elderly age 60 and above compared to older adults age 45–59. When their place of residence is considered, a high level of life satisfaction is reported more often amongst urban residents than their rural counterparts.

Confirming the multiple vulnerabilities, higher incidences of low satisfaction in the elderly is recorded amongst those who are living alone (48%) and are divorced, separated, or deserted (44%). Highlighting the relevance of education and financial adequacy, the elderly who belong to richer MPCE quintile and have a higher level of education are more highly satisfied with their life situations compared to older adults less than 60 years of age. Three-fifths (64%) of the elderly who have ten or more years of education are highly satisfied in their life compared to 39% who do not have any education. Across the MPCE quintiles, high life satisfaction increases from the poorest to the richest households. These findings highlight the variations in the levels of life satisfaction amongst older adults due to their socio-economic background.

A higher proportion of the elderly in the states/UTs of Gujarat (80%), Daman & Diu (78%), Chandigarh (74%), Himachal Pradesh (74%), and Dadra & Nagar Haveli (65%) reported a ‘high level of life satisfaction’, while this proportion is lowest in the states/UTs of Jammu & Kashmir (29%), West Bengal (30%), Rajasthan (33%), and Odisha (35%) (Table 15.6).

**Table 15.5 Percent distribution of older adults by perceived level of satisfaction with their life according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Age 45-59*  |             |             |               | Age ≥ 60    |             |             |               |
|------------------------------------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|
|                                          | Low         | Medium      | High        | Number        | Low         | Medium      | High        | Number        |
| <b>Place of residence</b>                |             |             |             |               |             |             |             |               |
| Rural                                    | 32.8        | 25.4        | 41.8        | 25,809        | 34.4        | 23.5        | 42.2        | 20,725        |
| Urban                                    | 31.6        | 21.7        | 46.8        | 14,977        | 26.7        | 19.6        | 53.7        | 10,739        |
| <b>Sex</b>                               |             |             |             |               |             |             |             |               |
| Male                                     | 29.8        | 25.1        | 45.2        | 15,471        | 30.4        | 22.5        | 47.2        | 15,098        |
| Female                                   | 33.9        | 23.6        | 42.5        | 25,315        | 33.8        | 22.3        | 44.0        | 16,366        |
| <b>Marital status</b>                    |             |             |             |               |             |             |             |               |
| Currently married                        | 30.5        | 24.5        | 45.0        | 35,476        | 29.7        | 22.9        | 47.4        | 19,920        |
| Widowed                                  | 42.5        | 22.7        | 34.7        | 3,874         | 35.6        | 21.4        | 43.0        | 10,719        |
| Divorced/Separated/Deserted/Others       | 54.8        | 18.9        | 26.3        | 1,436         | 44.1        | 23.2        | 32.7        | 825           |
| <b>Living arrangement</b>                |             |             |             |               |             |             |             |               |
| Living alone                             | 47.3        | 17.1        | 35.6        | 691           | 47.7        | 19.3        | 32.9        | 1622          |
| Living with spouse                       | 33.7        | 21.1        | 45.2        | 4,623         | 31.6        | 23.1        | 45.3        | 6,215         |
| Living with spouse and children          | 30.1        | 24.9        | 45.0        | 30,198        | 28.6        | 22.8        | 48.5        | 13,465        |
| Living with children (without spouse)    | 41.9        | 23.6        | 34.5        | 4,076         | 32.6        | 22.0        | 45.4        | 8,418         |
| Living with others only                  | 51.3        | 19.6        | 29.1        | 1,198         | 42.1        | 21.2        | 36.7        | 1,744         |
| <b>Religion</b>                          |             |             |             |               |             |             |             |               |
| Hindu                                    | 32.1        | 23.7        | 44.2        | 29,936        | 32.2        | 22.2        | 45.6        | 23,037        |
| Muslim                                   | 34.1        | 27.1        | 38.8        | 4,936         | 32.6        | 23.9        | 43.5        | 3,731         |
| Christian                                | 43.9        | 17.9        | 38.3        | 4,065         | 36          | 19.5        | 44.5        | 3,150         |
| Others                                   | 22.8        | 29.2        | 48.1        | 1,849         | 26.4        | 23.9        | 49.7        | 1,546         |
| <b>Caste</b>                             |             |             |             |               |             |             |             |               |
| Scheduled tribe                          | 34.6        | 26.9        | 38.5        | 7,336         | 37.1        | 23.1        | 39.8        | 5,173         |
| Scheduled caste                          | 36.7        | 25.0        | 38.3        | 6,906         | 39.4        | 23.1        | 37.5        | 5,140         |
| Other backward class                     | 32.9        | 23.1        | 44.1        | 15,298        | 31.6        | 21.9        | 46.6        | 11,886        |
| None of the above                        | 27.6        | 24.4        | 48          | 11,246        | 26.7        | 22.5        | 50.9        | 9,265         |
| <b>Education</b>                         |             |             |             |               |             |             |             |               |
| No schooling                             | 37.8        | 25.2        | 37.1        | 16,322        | 37.6        | 23.5        | 38.9        | 16,889        |
| Less than 5 years complete               | 32.8        | 25.4        | 41.8        | 4,273         | 32.5        | 22.4        | 45.1        | 3,781         |
| 5-9 years complete                       | 29.0        | 24.7        | 46.4        | 10,892        | 26.5        | 21.6        | 51.9        | 6,017         |
| 10 or more years complete                | 25.4        | 20.8        | 53.8        | 9,299         | 17.2        | 18.5        | 64.3        | 4,777         |
| <b>Work status</b>                       |             |             |             |               |             |             |             |               |
| Currently working                        | 30.4        | 24.9        | 44.8        | 23,683        | 31.9        | 23.7        | 44.4        | 9,307         |
| Worked in past but currently not working | 36.9        | 22.5        | 40.6        | 4,587         | 32.4        | 21.3        | 46.2        | 13,377        |
| Never worked                             | 34.8        | 23.3        | 42.0        | 12,516        | 32.0        | 22.4        | 45.7        | 8,780         |
| <b>MPCE quintile</b>                     |             |             |             |               |             |             |             |               |
| Poorest                                  | 35.5        | 24.8        | 39.7        | 7,674         | 38.4        | 24.0        | 37.6        | 6,484         |
| Poorer                                   | 33.1        | 25.5        | 41.4        | 8,053         | 34.1        | 22.9        | 43.0        | 6,477         |
| Middle                                   | 32.4        | 25.8        | 41.8        | 8,121         | 30.2        | 22.9        | 46.9        | 6,416         |
| Richer                                   | 30.0        | 24.3        | 45.7        | 8,516         | 28.4        | 21.9        | 49.7        | 6,170         |
| Richest                                  | 30.9        | 20.1        | 49.1        | 8,422         | 28.2        | 19.3        | 52.5        | 5,917         |
| <b>Total</b>                             | <b>32.4</b> | <b>24.1</b> | <b>43.5</b> | <b>40,786</b> | <b>32.1</b> | <b>22.4</b> | <b>45.5</b> | <b>31,464</b> |

\* Including spouse irrespective of age.

**Table 15.6 Percent distribution of older adults by perceived level of satisfaction with their life, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Age 45-59*  |             |             |               | Age ≥ 60    |             |             |               |
|---------------------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|
|                           | Low         | Medium      | High        | Number        | Low         | Medium      | High        | Number        |
| <b>India</b>              | <b>32.4</b> | <b>24.1</b> | <b>43.5</b> | <b>40,786</b> | <b>32.1</b> | <b>22.4</b> | <b>45.5</b> | <b>31,464</b> |
| <b>North</b>              |             |             |             |               |             |             |             |               |
| Chandigarh                | 9.0         | 23.1        | 67.9        | 632           | 11.8        | 13.8        | 74.4        | 394           |
| Delhi                     | 28.3        | 32.5        | 39.2        | 824           | 36.1        | 24.8        | 39.1        | 495           |
| Haryana                   | 26.4        | 26.8        | 46.8        | 1,050         | 28.5        | 26.7        | 44.8        | 848           |
| Himachal Pradesh          | 4.9         | 18.3        | 76.8        | 767           | 7.4         | 18.3        | 74.3        | 621           |
| Jammu & Kashmir           | 36.6        | 32.8        | 30.6        | 882           | 40.1        | 31.2        | 28.8        | 731           |
| Punjab                    | 22.6        | 27.3        | 50.1        | 1,120         | 22.9        | 22.7        | 54.4        | 1,004         |
| Rajasthan                 | 40.9        | 24.1        | 35.0        | 1,166         | 43.5        | 23.1        | 33.4        | 1,078         |
| Uttarakhand               | 21.2        | 26.8        | 52.0        | 717           | 23.2        | 23.0        | 53.8        | 641           |
| <b>Central</b>            |             |             |             |               |             |             |             |               |
| Chhattisgarh              | 30.2        | 23.5        | 46.4        | 1,275         | 30.0        | 26.5        | 43.5        | 780           |
| Madhya Pradesh            | 26.6        | 22.0        | 51.4        | 1,601         | 28.9        | 21.1        | 50.0        | 1,313         |
| Uttar Pradesh             | 34.8        | 30.6        | 34.6        | 2,398         | 35.2        | 27.8        | 37.0        | 2,169         |
| <b>East</b>               |             |             |             |               |             |             |             |               |
| Bihar                     | 30.9        | 23.7        | 45.4        | 1,712         | 30.2        | 23.8        | 46.0        | 1,808         |
| Jharkhand                 | 43.2        | 22.6        | 34.2        | 1,296         | 42.2        | 18.2        | 39.7        | 1,168         |
| Odisha                    | 37.4        | 27.7        | 35.0        | 1,680         | 39.7        | 25.7        | 34.6        | 1,237         |
| West Bengal               | 36.6        | 32.4        | 31.0        | 2,389         | 38.8        | 31          | 30.3        | 1,544         |
| <b>Northeast</b>          |             |             |             |               |             |             |             |               |
| Arunachal Pradesh         | 28.4        | 34.4        | 37.2        | 897           | 29.3        | 32.6        | 38.2        | 318           |
| Assam                     | 29.0        | 30.2        | 40.8        | 1,550         | 25.8        | 29.8        | 44.4        | 816           |
| Manipur                   | 32.4        | 22.4        | 45.2        | 763           | 30.1        | 25.3        | 44.7        | 606           |
| Meghalaya                 | 23.0        | 30.5        | 46.5        | 557           | 21.7        | 23.3        | 55.0        | 412           |
| Mizoram                   | 8.9         | 34.1        | 57.1        | 715           | 10.2        | 30.0        | 59.8        | 531           |
| Nagaland                  | 46.4        | 16.1        | 37.6        | 708           | 35.5        | 22.4        | 42.1        | 608           |
| Tripura                   | 27.4        | 31.8        | 40.8        | 734           | 25.6        | 28.4        | 46          | 461           |
| <b>West</b>               |             |             |             |               |             |             |             |               |
| Dadra & Nagar Haveli      | 17.8        | 17.8        | 64.5        | 639           | 12.5        | 22.8        | 64.7        | 451           |
| Daman & Diu               | 11.6        | 20.6        | 67.8        | 557           | 9.9         | 12.6        | 77.5        | 434           |
| Goa                       | 17.8        | 35.3        | 46.9        | 790           | 19.4        | 33.8        | 46.8        | 637           |
| Gujarat                   | 11.7        | 15.9        | 72.4        | 1,350         | 8.4         | 11.5        | 80.1        | 991           |
| Maharashtra               | 19.9        | 17.1        | 63.0        | 2,183         | 19.4        | 16.8        | 63.9        | 1,790         |
| <b>South</b>              |             |             |             |               |             |             |             |               |
| Andaman & Nicobar Islands | 26.4        | 22.3        | 51.3        | 721           | 26          | 20.7        | 53.3        | 523           |
| Andhra Pradesh            | 44.5        | 16.6        | 38.9        | 1,574         | 44.7        | 14.2        | 41.1        | 1,105         |
| Karnataka                 | 43.3        | 25.2        | 31.6        | 1,416         | 38.4        | 24.7        | 36.9        | 1,004         |
| Kerala                    | 32.5        | 25          | 42.5        | 1,288         | 38.5        | 19.7        | 41.8        | 1,209         |
| Lakshadweep               | 27.6        | 29.5        | 42.9        | 637           | 30.8        | 27.9        | 41.3        | 502           |
| Puducherry                | 22.4        | 32.7        | 44.9        | 788           | 23.7        | 32.5        | 43.7        | 640           |
| Tamil Nadu                | 29.3        | 19.2        | 51.6        | 1,996         | 34.7        | 20.0        | 45.2        | 1,534         |
| Telangana                 | 38.2        | 18.7        | 43.1        | 1,414         | 40.9        | 16.3        | 42.9        | 1,061         |

\* Including spouse irrespective of age.

## 15.4 DISCRIMINATION EXPERIENCED EVERYDAY

Research on discrimination experienced everyday has been scarce, and the literature is even scarcer amongst older adults who live in developing countries (Braga et al., 2019). Perceived discrimination has been defined as an individual's perception of being treated unfairly by other people due to personal attributes such as race, ethnicity, age, gender, socioeconomic status, sexual orientation, or other characteristics (Kessler et al., 1999; Ayalon and Gum, 2011). Capturing perceived everyday discrimination amongst older adults is necessary because the research suggests that older adults who internalise negative attitudes towards themselves are at increased risk of functional and cognitive decline (Levy et al., 2012a; Levy et al., 2012b), depression, and life dissatisfaction (Kessler et al., 1999). They also withdraw themselves from social and cultural gatherings and reduce their engagement (Sutin et al., 2015; Rippon et al., 2014). It has been already discussed that there are many forms of discrimination and they are experienced for various reasons such as gender, age, social categories, physical disabilities, financial status, and other reasons. Due to the lower social and financial status in old age, the elderly are at a greater risk of being treated badly by others. While the mistreatment of the elderly is not new, it has not been sufficiently recognised due to inadequate data, especially in developing countries such as India. Due to poor recognition and under-reporting, such incidents of discrimination remain undocumented in India.

To understand the everyday discrimination experienced by the elderly, the following six statements were read in LASI about their experiences in their day-to-day life: a) *You are treated with less courtesy or respect than other people*; b) *you receive poorer service than other people at restaurants or stores*; c) *people act as if they think you are not smart*; d) *people act as if they are afraid of you*; e) *you are threatened or harassed*; and f) *you receive poorer service or treatment than other people from doctors or hospitals*. Each statement had six response categories of 'almost every day', 'at least once a week', 'a few times a month', 'a few times a year', 'less than once a year', or 'never'. The responses were then categorised as 'no discrimination', 'one type of discrimination', and 'two or more types of discrimination'.

Tables 15.7 and 15.8 present the percentage of elderly age 60 and above who perceive discrimination in everyday life and illustrates that 93% of the elderly interviewed do not feel that they were discriminated against, while 4% stated that they have experienced one type of discrimination, and 3% experience two or more types of discrimination. Experiencing two or more types of discrimination is high amongst the elderly who are living alone, widowed, and belong to the richest MPCE quintile. More elderly women than men experienced any one type of discrimination in their day-to-day life. Across the states and UTs of India, the proportion of the elderly experiencing two or more types of discrimination is highest in Delhi (12%), Chhattisgarh (10%), and Jammu & Kashmir (10%).

Among the elderly age 60 and above who experience day-to-day discrimination, the majority (62%) perceive their age as the main reason for the discrimination (Tables 15.9 and 15.10). Whereas almost two-fifths of the elderly age 60 and above perceive the main reason for discrimination as their financial status (37%), and 8% think that they are discriminated against because of their physical appearance. In addition, 14% perceive their religion or caste affiliation as the main reason behind the discrimination, and 40% of the elderly age 60 and above who belong to the poorest MPCE quintile consider their financial status as the main reason.

Three-quarters of the elderly age 60 and above who are divorced, separated, or deserted consider their age as the main reason behind the everyday discrimination they face, with 9% considering their gender. More than a third of the elderly age 60 and above from Rajasthan (37%), and 21% from Maharashtra, perceive their religion or caste as the main reason behind the discrimination. More than half of the elderly age 60 and above from the states of Himachal Pradesh (61%), Andhra Pradesh (55%), Bihar (54%), and Maharashtra (50%) consider their financial status as the main reason for the everyday discrimination that they face.



While religion or caste-based discrimination and financial status-based discrimination is more common in rural areas, gender-based discrimination is more common in urban areas. More women experience age and gender-based discrimination, and discrimination based on financial status is higher amongst the poor and elderly with no schooling and those belonging to scheduled tribes. Religion or caste-based discrimination is reported more commonly amongst the elderly belonging to scheduled castes and scheduled tribes.

**Table 15.7 Percent distribution of elderly age 60 and above who perceive being discriminated by background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | No discrimination | One kind of discrimination | Two or more kinds of discrimination | Number        |
|------------------------------------------|-------------------|----------------------------|-------------------------------------|---------------|
| <b>Place of residence</b>                |                   |                            |                                     |               |
| Rural                                    | 92.7              | 4.1                        | 3.2                                 | 20,725        |
| Urban                                    | 92.5              | 4.6                        | 2.9                                 | 10,739        |
| <b>Sex</b>                               |                   |                            |                                     |               |
| Male                                     | 93.2              | 3.7                        | 3.1                                 | 15,098        |
| Female                                   | 92.1              | 4.7                        | 3.1                                 | 16,366        |
| <b>Marital status</b>                    |                   |                            |                                     |               |
| Currently married                        | 93.5              | 3.6                        | 2.9                                 | 19,920        |
| Widowed                                  | 91.1              | 5.5                        | 3.4                                 | 10,719        |
| Divorced/Separated/Deserted/Others       | 94.6              | 2.1                        | 3.3                                 | 825           |
| <b>Living arrangement</b>                |                   |                            |                                     |               |
| Living alone                             | 90.6              | 3.7                        | 5.7                                 | 1,622         |
| Living with spouse                       | 93.4              | 3.3                        | 3.3                                 | 6,215         |
| Living with spouse and children          | 93.5              | 3.7                        | 2.7                                 | 13,465        |
| Living with children (without spouse)    | 91.3              | 5.8                        | 3.0                                 | 8,418         |
| Living with others only                  | 92.2              | 4.6                        | 3.2                                 | 1,744         |
| <b>Religion</b>                          |                   |                            |                                     |               |
| Hindu                                    | 92.2              | 4.5                        | 3.3                                 | 23,037        |
| Muslim                                   | 93.9              | 3.6                        | 2.5                                 | 3,731         |
| Christian                                | 95.3              | 1.6                        | 3.1                                 | 3,150         |
| Others                                   | 96.3              | 2.4                        | 1.3                                 | 1,546         |
| <b>Caste</b>                             |                   |                            |                                     |               |
| Scheduled tribe                          | 94.0              | 3.1                        | 3.0                                 | 5,173         |
| Scheduled caste                          | 91.9              | 4.6                        | 3.6                                 | 5,140         |
| Other backward class                     | 91.9              | 4.9                        | 3.2                                 | 11,886        |
| None of the above                        | 94.0              | 3.3                        | 2.6                                 | 9,265         |
| <b>Education</b>                         |                   |                            |                                     |               |
| No schooling                             | 92.4              | 4.1                        | 3.5                                 | 16,889        |
| Less than 5 years complete               | 93.6              | 3.8                        | 2.6                                 | 3,781         |
| 5-9 years complete                       | 91.6              | 5.7                        | 2.7                                 | 6,017         |
| 10 or more years complete                | 94.1              | 3.5                        | 2.5                                 | 4,777         |
| <b>Work status</b>                       |                   |                            |                                     |               |
| Currently working                        | 92.3              | 5.0                        | 2.7                                 | 9,307         |
| Worked in past but currently not working | 92.5              | 3.8                        | 3.8                                 | 13,377        |
| Never worked                             | 93.3              | 4.2                        | 2.5                                 | 8,780         |
| <b>MPCE quintile</b>                     |                   |                            |                                     |               |
| Poorest                                  | 92.3              | 4.2                        | 3.5                                 | 6,484         |
| Poorer                                   | 93.2              | 4.0                        | 2.9                                 | 6,477         |
| Middle                                   | 93.5              | 3.7                        | 2.8                                 | 6,416         |
| Richer                                   | 91.6              | 5.8                        | 2.6                                 | 6,170         |
| Richest                                  | 92.5              | 3.5                        | 4.0                                 | 5,917         |
| <b>Total</b>                             | <b>92.6</b>       | <b>4.3</b>                 | <b>3.1</b>                          | <b>31,464</b> |

**Table 15.8 Percent distribution of elderly age 60 and above who perceive being discriminated, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | No discrimination | One kind of discrimination | Two or more kinds of discrimination | Number        |
|---------------------------|-------------------|----------------------------|-------------------------------------|---------------|
| <b>India</b>              | <b>92.6</b>       | <b>4.3</b>                 | <b>3.1</b>                          | <b>31,464</b> |
| <b>North</b>              |                   |                            |                                     |               |
| Chandigarh                | 93.5              | 2.5                        | 4.0                                 | 394           |
| Delhi                     | 74.8              | 12.9                       | 12.3                                | 495           |
| Haryana                   | 95.5              | 3.0                        | 1.5                                 | 848           |
| Himachal Pradesh          | 98.5              | 1.2                        | 0.4                                 | 621           |
| Jammu & Kashmir           | 87.9              | 2.5                        | 9.6                                 | 731           |
| Punjab                    | 97.3              | 2.4                        | 0.3                                 | 1,004         |
| Rajasthan                 | 90.9              | 2.5                        | 6.5                                 | 1,078         |
| Uttarakhand               | 97.1              | 2.8                        | 0.2                                 | 641           |
| <b>Central</b>            |                   |                            |                                     |               |
| Chhattisgarh              | 85.3              | 4.9                        | 9.9                                 | 780           |
| Madhya Pradesh            | 88.7              | 6.4                        | 4.9                                 | 1,313         |
| Uttar Pradesh             | 87.5              | 8.2                        | 4.3                                 | 2,169         |
| <b>East</b>               |                   |                            |                                     |               |
| Bihar                     | 95.0              | 3.2                        | 1.8                                 | 1,808         |
| Jharkhand                 | 95.6              | 3.0                        | 1.5                                 | 1,168         |
| Odisha                    | 98.2              | 1.3                        | 0.5                                 | 1,237         |
| West Bengal               | 98.4              | 1.3                        | 0.3                                 | 1,544         |
| <b>Northeast</b>          |                   |                            |                                     |               |
| Arunachal Pradesh         | 93.4              | 2.5                        | 4.2                                 | 318           |
| Assam                     | 95.9              | 2.6                        | 1.5                                 | 816           |
| Manipur                   | 98.5              | 1.0                        | 0.5                                 | 606           |
| Meghalaya                 | 100.0             | 0.0                        | 0.0                                 | 412           |
| Mizoram                   | 99.4              | 0.3                        | 0.3                                 | 531           |
| Nagaland                  | 100.0             | 0.0                        | 0.0                                 | 608           |
| Tripura                   | 100.0             | 0.0                        | 0.0                                 | 461           |
| <b>West</b>               |                   |                            |                                     |               |
| Dadra & Nagar Haveli      | 96.0              | 2.7                        | 1.4                                 | 451           |
| Daman & Diu               | 95.7              | 2.7                        | 1.5                                 | 434           |
| Goa                       | 95.8              | 2.7                        | 1.6                                 | 637           |
| Gujarat                   | 94.1              | 3.5                        | 2.4                                 | 991           |
| Maharashtra               | 95.0              | 3.6                        | 1.4                                 | 1,790         |
| <b>South</b>              |                   |                            |                                     |               |
| Andaman & Nicobar Islands | 97.8              | 1.2                        | 1.1                                 | 523           |
| Andhra Pradesh            | 93.5              | 1.2                        | 5.3                                 | 1,105         |
| Karnataka                 | 87.4              | 8.6                        | 3.9                                 | 1,004         |
| Kerala                    | 93.9              | 3.7                        | 2.4                                 | 1,209         |
| Lakshadweep               | 98.0              | 1.8                        | 0.2                                 | 502           |
| Puducherry                | 87.4              | 5.6                        | 7.0                                 | 640           |
| Tamil Nadu                | 93.5              | 2.9                        | 3.7                                 | 1,534         |
| Telangana                 | 93.6              | 1.8                        | 4.7                                 | 1,061         |

**Table 15.9 Percent distribution of elderly age 60 and above by perceived reasons for discrimination they face according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Perceived reasons for discrimination |            |                    |                        |                        |                     | Number       |
|------------------------------------------|--------------------------------------|------------|--------------------|------------------------|------------------------|---------------------|--------------|
|                                          | Age                                  | Gender     | Religion/<br>Caste | Physical<br>appearance | Physical<br>disability | Financial<br>status |              |
| <b>Place of residence</b>                |                                      |            |                    |                        |                        |                     |              |
| Rural                                    | 63.4                                 | 6.6        | 16.6               | 8.4                    | 5.0                    | 38.2                | 3,322        |
| Urban                                    | 56.8                                 | 16.5       | 7.2                | 7.3                    | 4.9                    | 31.8                | 1,278        |
| <b>Sex</b>                               |                                      |            |                    |                        |                        |                     |              |
| Male                                     | 59.9                                 | 3.3        | 15.7               | 9.0                    | 6.3                    | 38.5                | 2,201        |
| Female                                   | 63.4                                 | 14.0       | 13.2               | 7.4                    | 3.7                    | 35.1                | 2,399        |
| <b>Marital status</b>                    |                                      |            |                    |                        |                        |                     |              |
| Currently married                        | 58.3                                 | 6.7        | 15.9               | 9.6                    | 5.0                    | 38.5                | 2,820        |
| Widowed                                  | 66.4                                 | 12.6       | 11.5               | 5.9                    | 4.5                    | 33.7                | 1,661        |
| Divorced/Separated/Deserted/Others       | 75.3                                 | 9.9        | 23.4               | 8.7                    | 10.0                   | 41.0                | 119          |
| <b>Living arrangement</b>                |                                      |            |                    |                        |                        |                     |              |
| Living alone                             | 74.6                                 | 5.7        | 11.9               | 8.6                    | 7.2                    | 42.8                | 317          |
| Living with spouse                       | 58.3                                 | 6.1        | 15.3               | 8.9                    | 6.6                    | 41.1                | 920          |
| Living with spouse and children          | 58.0                                 | 7.0        | 16.3               | 10.0                   | 4.1                    | 37.1                | 1,863        |
| Living with children (without spouse)    | 64.0                                 | 13.9       | 11.5               | 5.2                    | 3.9                    | 30.5                | 1,251        |
| Living with others only                  | 71.8                                 | 13.3       | 15.9               | 7.0                    | 6.2                    | 41.8                | 249          |
| <b>Religion</b>                          |                                      |            |                    |                        |                        |                     |              |
| Hindu                                    | 62.7                                 | 9.5        | 14.1               | 8.4                    | 5.1                    | 35.3                | 3,681        |
| Muslim                                   | 57.8                                 | 7.5        | 15.7               | 7.5                    | 2.4                    | 43.3                | 502          |
| Christian                                | 51.8                                 | 4.2        | 8.6                | 4.1                    | 9.7                    | 59.2                | 258          |
| Others                                   | 55.0                                 | 1.4        | 21.6               | 6.0                    | 6.5                    | 36.3                | 159          |
| <b>Caste</b>                             |                                      |            |                    |                        |                        |                     |              |
| Scheduled tribe                          | 63.6                                 | 10.5       | 27.5               | 5.3                    | 4.3                    | 31.0                | 579          |
| Scheduled caste                          | 60.1                                 | 8.9        | 25.4               | 5.3                    | 5.1                    | 42.8                | 873          |
| Other backward class                     | 60.4                                 | 9.8        | 8.2                | 10.0                   | 4.7                    | 36.0                | 2,010        |
| None of the above                        | 65.9                                 | 7.0        | 11.9               | 8.0                    | 5.4                    | 33.8                | 1,138        |
| <b>Education</b>                         |                                      |            |                    |                        |                        |                     |              |
| No schooling                             | 64.4                                 | 8.0        | 17.0               | 7.5                    | 4.3                    | 39.4                | 2,844        |
| Less than 5 years complete               | 66.1                                 | 7.3        | 13.9               | 7.4                    | 7.4                    | 35.9                | 539          |
| 5-9 years complete                       | 50.4                                 | 17.4       | 9.6                | 10.7                   | 5.1                    | 32.4                | 737          |
| 10 or more years complete                | 59.8                                 | 3.0        | 6.3                | 8.5                    | 5.8                    | 27.5                | 480          |
| <b>Work status</b>                       |                                      |            |                    |                        |                        |                     |              |
| Currently working                        | 55.9                                 | 6.4        | 17.0               | 8.8                    | 2.6                    | 43.2                | 1,450        |
| Worked in past but currently not working | 67.0                                 | 5.7        | 14.3               | 8.0                    | 7.1                    | 36.1                | 2,093        |
| Never worked                             | 60.0                                 | 20.8       | 10.1               | 7.3                    | 3.9                    | 27.0                | 1,057        |
| <b>MPCE quintile</b>                     |                                      |            |                    |                        |                        |                     |              |
| Poorest                                  | 68.5                                 | 6.7        | 16.6               | 7.8                    | 5.7                    | 39.7                | 1,041        |
| Poorer                                   | 65.4                                 | 6.5        | 15.0               | 8.8                    | 5.5                    | 38.9                | 912          |
| Middle                                   | 58.0                                 | 5.7        | 15.9               | 7.0                    | 4.4                    | 39.3                | 942          |
| Richer                                   | 55.6                                 | 17.5       | 9.8                | 6.4                    | 3.6                    | 34.2                | 881          |
| Richest                                  | 59.6                                 | 9.1        | 14.2               | 11.5                   | 5.5                    | 29.1                | 824          |
| <b>Total</b>                             | <b>61.8</b>                          | <b>9.0</b> | <b>14.3</b>        | <b>8.1</b>             | <b>4.9</b>             | <b>36.7</b>         | <b>4,600</b> |

**Table 15.10 Percentage of elderly age 60 and above by perceived reasons for discrimination they face, states/ UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Perceived reasons for discrimination |            |                    |                        |                        |                     | Number        |
|---------------------------|--------------------------------------|------------|--------------------|------------------------|------------------------|---------------------|---------------|
|                           | Age                                  | Gender     | Religion/<br>Caste | Physical<br>appearance | Physical<br>disability | Financial<br>status |               |
| <b>India</b>              | <b>61.8</b>                          | <b>9.0</b> | <b>14.3</b>        | <b>8.1</b>             | <b>4.9</b>             | <b>36.7</b>         | <b>31,464</b> |
| <b>North</b>              |                                      |            |                    |                        |                        |                     |               |
| Chandigarh                | 80.2                                 | 0.0        | 1.4                | 4.0                    | 9.1                    | 20.4                | 394           |
| Delhi                     | 58.2                                 | 0.5        | 4.8                | 3.5                    | 3.4                    | 38.1                | 495           |
| Haryana                   | 69.1                                 | 7.9        | 7.4                | 7.6                    | 12.8                   | 24.4                | 848           |
| Himachal Pradesh          | 63.5                                 | 2.2        | 10.3               | 0.0                    | 2.6                    | 61.3                | 621           |
| Jammu & Kashmir           | 53.9                                 | 24.7       | 19.8               | 3.0                    | 2.3                    | 35.3                | 731           |
| Punjab                    | 53.3                                 | 0.0        | 15.2               | 10.1                   | 3.3                    | 27.0                | 1,004         |
| Rajasthan                 | 73.6                                 | 17.1       | 37.2               | 7.5                    | 2.8                    | 16.3                | 1,078         |
| Uttarakhand               | 63.5                                 | 15.6       | 3.6                | 0.0                    | 5.0                    | 25.0                | 641           |
| <b>Central</b>            |                                      |            |                    |                        |                        |                     |               |
| Chhattisgarh              | 87.5                                 | 9.9        | 7.9                | 1.9                    | 2.0                    | 19.9                | 780           |
| Madhya Pradesh            | 76.0                                 | 7.7        | 13.7               | 3.9                    | 2.5                    | 28.5                | 1,313         |
| Uttar Pradesh             | 60.7                                 | 8.6        | 17.1               | 7.0                    | 3.3                    | 36.5                | 2,169         |
| <b>East</b>               |                                      |            |                    |                        |                        |                     |               |
| Bihar                     | 52.5                                 | 3.0        | 17.9               | 7.4                    | 3.9                    | 53.9                | 1,808         |
| Jharkhand                 | 82.8                                 | 16.7       | 6.2                | 1.8                    | 0.7                    | 39.9                | 1,168         |
| Odisha                    | 48.7                                 | 0.0        | 3.6                | 1.6                    | 7.5                    | 47.6                | 1,237         |
| West Bengal               | 70.3                                 | 14.5       | 17.0               | 7.1                    | 12.0                   | 39.4                | 1,544         |
| <b>Northeast</b>          |                                      |            |                    |                        |                        |                     |               |
| Arunachal Pradesh         | 93.1                                 | 0.8        | 11.5               | 9.7                    | 0.0                    | 9.0                 | 318           |
| Assam                     | 87.1                                 | 14.4       | 17.1               | 12.3                   | 2.8                    | 21.5                | 816           |
| Manipur                   | 66.8                                 | 10.6       | 8.8                | 4.8                    | 1.4                    | 27.5                | 606           |
| Meghalaya                 | 81.8                                 | 13.0       | 9.5                | 5.2                    | 6.5                    | 11.9                | 412           |
| Mizoram                   | 87.6                                 | 0.0        | 4.3                | 3.6                    | 2.0                    | 4.5                 | 531           |
| Nagaland                  | 65.7                                 | 53.1       | 0.0                | 18.7                   | 12.6                   | 18.7                | 608           |
| Tripura                   | 39.7                                 | 0.0        | 20.8               | 0.0                    | 0.0                    | 25.9                | 461           |
| <b>West</b>               |                                      |            |                    |                        |                        |                     |               |
| Dadra & Nagar Haveli      | 52.0                                 | 1.0        | 4.4                | 2.5                    | 15.3                   | 21.2                | 451           |
| Daman & Diu               | 54.5                                 | 0.9        | 8.8                | 2.5                    | 11.0                   | 34.4                | 434           |
| Goa                       | 76.5                                 | 8.1        | 15.0               | 4.1                    | 4.3                    | 9.6                 | 637           |
| Gujarat                   | 40.3                                 | 6.1        | 3.5                | 5.5                    | 25.2                   | 32.2                | 991           |
| Maharashtra               | 61.8                                 | 0.8        | 21.3               | 13.8                   | 3.3                    | 49.8                | 1,790         |
| <b>South</b>              |                                      |            |                    |                        |                        |                     |               |
| Andaman & Nicobar Islands | 64.4                                 | 0.0        | 2.9                | 13.3                   | 8.9                    | 14.8                | 523           |
| Andhra Pradesh            | 47.4                                 | 0.0        | 7.9                | 3.5                    | 8.6                    | 55.1                | 1,105         |
| Karnataka                 | 56.4                                 | 16.5       | 12.0               | 13.4                   | 2.8                    | 36.0                | 1,004         |
| Kerala                    | 62.8                                 | 8.7        | 2.9                | 3.7                    | 13.9                   | 19.3                | 1,209         |
| Lakshadweep               | 100.0                                | 7.2        | 0.0                | 0.0                    | 0.0                    | 5.0                 | 502           |
| Puducherry                | 95.0                                 | 0.3        | 0.0                | 0.9                    | 6.5                    | 2.6                 | 640           |
| Tamil Nadu                | 69.9                                 | 2.0        | 7.5                | 14.4                   | 4.7                    | 28.3                | 1,534         |
| Telangana                 | 53.8                                 | 3.2        | 7.5                | 5.0                    | 3.0                    | 49.4                | 1,061         |

### Key findings: life satisfaction and discrimination

- About 46% of the elderly reported a 'high level of satisfaction in their life'. Life satisfaction is higher amongst the urban elderly age 60 and above, and it increases with education and economic status.
- Seven percent of the elderly age 60 and above reported that they face day-to-day discrimination. Amongst them, the majority (62%) perceive age as the main reason for the discrimination followed by financial status (37%).
- In addition, 14% of the elderly age 60 and above who experienced day-to-day discrimination report their religion or caste affiliation as the reason for this discrimination. The elderly age 60 and above who belong to scheduled castes and scheduled tribes are more likely to experience discrimination, and this is higher in rural areas.

## 16. SOCIAL SECURITY SCHEMES FOR THE ELDERLY

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Social welfare schemes play an important role in addressing the problems of the weaker and vulnerable sections of society, particularly of the elderly. The government has launched many policies and programmes for the welfare of the elderly, and such programmes are designed to enhance their quality of life. Apart from national schemes, there are many state specific schemes for the welfare of the elderly that provide health care and economic support for older people. To access and avail themselves of the benefits, the elderly need to be aware of the relevant schemes and programmes implemented by the central and state governments. Many eligible elders are not aware of these schemes, or even if they are aware, do not receive the benefits of such schemes for various reasons.

### **Social Security Schemes for Older People (age 60 and above)**

The Government of India has launched various schemes for elderly to promote the health, well-being, and overall welfare of senior citizens. In LASI, information was collected on awareness and out-reach of various social security programmes that are targeted at the elderly population age 60 and above. This chapter is based only on the data collected from the elderly age 60 and above.

### **Indira Gandhi National Old Age Pension Scheme (IGNOAPS)**

IGNOAPS was introduced in 1995 as part of the National Social Assistance Programme (NSAP) to provide financial assistance to the BPL elderly. The scheme was later transferred to the state in 2002–2003 for implementation with additional central financial assistance. The main objective of this scheme is to provide social security to make older people economically independent. The scheme covers the elderly age 60 and above who have little or no regular means of subsistence either from their own source of income or through financial support from family members or other sources. The central government contributes INR 200 per month to beneficiaries who are aged between 60 and 79, and INR 500 to those age 80 years and above. The state government is advised to add the matching amount or more, and their contribution varies. At present, old-age pension beneficiaries receive anywhere between INR 200 to INR 2,500 per month depending on the amount granted by the state.

### **Indira Gandhi National Widow Pension Scheme (IGNWPS)**

The Indira Gandhi National Widow Pension Scheme (IGNWPS) is implemented by the Ministry of Rural Development, Government of India. The applicant should belong to a household falling below the poverty line as per criteria prescribed by the Government of India. The pension amount is INR 200 per month, and the state government is also urged to provide the matching amount or more. The pension is credited into a post office or public sector bank account of the beneficiary and is discontinued if the widow remarries or moves above the poverty line.

### **Annapurna Scheme**

The Annapurna Scheme is a centrally sponsored food security scheme that was launched in 2000 as part of the National Social Assistance Programme (NSAP). It provides food security for senior citizens who, although eligible, remain uncovered by the National Old-Age Pension Scheme (NOAPS). The Annapurna scheme is targeted to cover 20% of the people eligible to receive a pension under NOAPS and is provided to the beneficiaries who fulfil the following criteria:

1. The age of the applicant (male or female) should be 65 years or above.
2. The applicant must be destitute in the sense of having little or no regular means of subsistence from their own source of income, or through financial support from family members or other sources.

3. The applicant should not be in receipt of a pension under the NOAPS or state pension scheme. All beneficiaries are given 10 kg of food (grain) per month free of cost.

In LASI, all of the respondents age 60 and above were asked about the extent of their awareness and utilisation of the three national social security schemes mentioned above. In addition, questions were asked regarding their awareness and utilisation of government facilities or concessions for the elderly such as concessions for air, train, and road travel tickets.

### 16.1 AWARENESS OF SOCIAL SECURITY SCHEMES AMONG THE ELDERLY

Table 16.1 presents the percentage of the elderly age 60 and above who are aware of the various social security schemes according to their background characteristics. A significant proportion of the elderly are aware of the IGNOAPS (55%) and IGNWPS (44%), whilst awareness of the Annapurna scheme is rather limited (12%).

A higher proportion of the elderly age 60 and above are aware of the IGNOAPS than the other two programmes. Interestingly, a higher proportion of the elderly from rural areas are aware of these social security schemes than those from urban areas. Of the elderly respondents, 58% from rural areas and 49% from urban areas are aware of the IGNOAPS, and 45% from rural areas and 42% from urban areas are aware of the IGNWPS. Awareness of the IGNOAPS (59% of men and 52% of women) and the Annapurna scheme is lower amongst elderly women (9%) than elderly men (16%), while a slightly higher proportion of elderly women knew of the IGNWPS (45%) than elderly men (43%; Figure 16.1). Across India, amongst the interviewed elderly (age 60 and above), the majority of widows have not heard about the IGNWPS.

The level of awareness amongst the elderly is lower amongst Muslims compared to other religions. Regarding IGNOAPS, 46% of elderly Muslims are not aware and around 57% are not aware of IGNWPS, and more than 92% are not aware of the Annapurna scheme. The level of awareness for the IGNOAPS, IGNWPS, and Annapurna schemes increases as the level of education of the respondent increases. The working status and MPCE quintile do not show any consistent variation in the awareness of different social security programmes.

**Figure 16.1 Percentage of elderly age 60 and above who are aware of social security schemes according to sex and place of residence, India, LASI Wave 1, 2017-18**

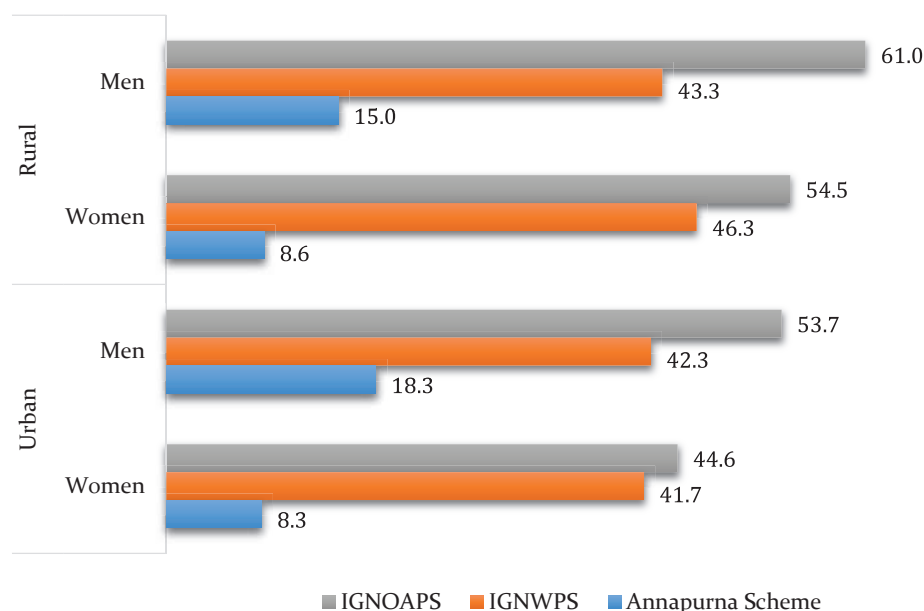


**Table 16.1 Percentage of elderly age 60 and above with awareness of social security schemes according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Indira Gandhi National<br>Old Age Pension<br>Scheme | Indira Gandhi<br>Widow Pension<br>Scheme | Annapurna<br>Scheme | Number        |
|------------------------------------------|-----------------------------------------------------|------------------------------------------|---------------------|---------------|
| <b>Place of residence</b>                |                                                     |                                          |                     |               |
| Rural                                    | 57.6                                                | 44.8                                     | 11.7                | 20,725        |
| Urban                                    | 48.6                                                | 42.0                                     | 12.7                | 10,739        |
| <b>Sex</b>                               |                                                     |                                          |                     |               |
| Male                                     | 59.0                                                | 43.0                                     | 15.9                | 15,098        |
| Female                                   | 51.5                                                | 44.9                                     | 8.5                 | 16,366        |
| <b>Marital status</b>                    |                                                     |                                          |                     |               |
| Currently married                        | 56.6                                                | 42.6                                     | 14.1                | 19,920        |
| Widowed                                  | 52.5                                                | 46.7                                     | 8.3                 | 10,719        |
| Divorced/Separated/Deserted/Others       | 53.1                                                | 37.4                                     | 12.4                | 825           |
| <b>Living arrangement</b>                |                                                     |                                          |                     |               |
| Living alone                             | 55.1                                                | 50.4                                     | 10.9                | 1,622         |
| Living with spouse and/or others         | 58.1                                                | 42.1                                     | 13.5                | 6,215         |
| Living with spouse and children          | 55.8                                                | 43.0                                     | 14.5                | 13,465        |
| Living with children and others          | 51.2                                                | 45.6                                     | 8.2                 | 8,418         |
| Living with others only                  | 58.2                                                | 43.7                                     | 8.4                 | 1,744         |
| <b>Religion</b>                          |                                                     |                                          |                     |               |
| Hindu                                    | 55.1                                                | 44.4                                     | 12.6                | 23,037        |
| Muslim                                   | 53.5                                                | 42.9                                     | 7.9                 | 3,731         |
| Christian                                | 61.1                                                | 48.5                                     | 16.5                | 3,150         |
| Others                                   | 53.5                                                | 36.1                                     | 6.0                 | 1,546         |
| <b>Caste</b>                             |                                                     |                                          |                     |               |
| Scheduled tribe                          | 54.8                                                | 41.2                                     | 9.9                 | 5,173         |
| Scheduled caste                          | 58.8                                                | 44.9                                     | 10.4                | 5,140         |
| Other backward class                     | 56.1                                                | 44.6                                     | 12.9                | 11,886        |
| None of the above                        | 50.8                                                | 43.2                                     | 12.1                | 9,265         |
| <b>Education</b>                         |                                                     |                                          |                     |               |
| No schooling                             | 56.0                                                | 43.2                                     | 8.3                 | 16,889        |
| Less than 5 years complete               | 52.7                                                | 40.6                                     | 8.9                 | 3,781         |
| 5-9 years complete                       | 56.0                                                | 45.9                                     | 16.8                | 6,017         |
| 10 or more years complete                | 51.8                                                | 47.8                                     | 23.4                | 4,777         |
| <b>Work status</b>                       |                                                     |                                          |                     |               |
| Currently working                        | 56.3                                                | 44.8                                     | 13.6                | 9,307         |
| Worked in past but currently not working | 57.4                                                | 45.6                                     | 13.5                | 13,377        |
| Never worked                             | 49.8                                                | 40.6                                     | 7.8                 | 8,780         |
| <b>MPCE quintile</b>                     |                                                     |                                          |                     |               |
| Poorest                                  | 58.5                                                | 43.9                                     | 10.8                | 6,484         |
| Poorer                                   | 57.3                                                | 44.7                                     | 12.0                | 6,477         |
| Middle                                   | 54.9                                                | 44.3                                     | 12.0                | 6,416         |
| Richer                                   | 51.2                                                | 42.8                                     | 11.4                | 6,170         |
| Richest                                  | 52.2                                                | 44.2                                     | 14.2                | 5,917         |
| <b>Total</b>                             | <b>55.0</b>                                         | <b>44.0</b>                              | <b>12.0</b>         | <b>31,464</b> |



Table 16.2 shows the percentages of the elderly age 60 and above who are aware of social security schemes. Across all of the states/UTs, the awareness of the IGNOAPS and IGNWPS is higher amongst the elderly in the states of Haryana, Himachal Pradesh, Bihar, Jharkhand, Odisha, Assam, and Dadra & Nagar Haveli. However, awareness regarding the IGNWPS is as low as 6% in Arunachal Pradesh and 7% in Tripura. The level of awareness of the Annapurna scheme is extremely low across all states.

**Table 16.2 Percentage of elderly age 60 and above with awareness of social security schemes, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Indira Gandhi National<br>Old Age Pension<br>Scheme | Indira Gandhi<br>Widow Pension<br>Scheme | Annapurna<br>Scheme | Number        |
|---------------------------|-----------------------------------------------------|------------------------------------------|---------------------|---------------|
| <b>India</b>              | <b>55.0</b>                                         | <b>44.0</b>                              | <b>12.0</b>         | <b>31,464</b> |
| <b>North</b>              |                                                     |                                          |                     |               |
| Chandigarh                | 51.0                                                | 46.8                                     | 18.5                | 394           |
| Delhi                     | 54.3                                                | 28.3                                     | 4.7                 | 495           |
| Haryana                   | 78.4                                                | 67.6                                     | 8.4                 | 848           |
| Himachal Pradesh          | 77.1                                                | 70.2                                     | 15.0                | 621           |
| Jammu & Kashmir           | 61.5                                                | 50.5                                     | 1.3                 | 731           |
| Punjab                    | 62.5                                                | 40.4                                     | 4.3                 | 1,004         |
| Rajasthan                 | 75.7                                                | 49.4                                     | 11.8                | 1,078         |
| Uttarakhand               | 58.7                                                | 52.0                                     | 11.3                | 641           |
| <b>Central</b>            |                                                     |                                          |                     |               |
| Chhattisgarh              | 62.5                                                | 47.7                                     | 20.0                | 780           |
| Madhya Pradesh            | 49.7                                                | 34.0                                     | 7.8                 | 1,313         |
| Uttar Pradesh             | 48.0                                                | 43.4                                     | 6.9                 | 2,169         |
| <b>East</b>               |                                                     |                                          |                     |               |
| Bihar                     | 81.8                                                | 58.6                                     | 23.2                | 1,808         |
| Jharkhand                 | 77.7                                                | 67.6                                     | 17.0                | 1,168         |
| Odisha                    | 74.4                                                | 66.6                                     | 31.5                | 1,237         |
| West Bengal               | 40.9                                                | 37.2                                     | 11.2                | 1,544         |
| <b>Northeast</b>          |                                                     |                                          |                     |               |
| Arunachal Pradesh         | 18.3                                                | 5.6                                      | 1.3                 | 318           |
| Assam                     | 83.6                                                | 61.5                                     | 30.2                | 816           |
| Manipur                   | 67.0                                                | 36.9                                     | 6.6                 | 606           |
| Meghalaya                 | 39.6                                                | 11.3                                     | 0.0                 | 412           |
| Mizoram                   | 62.5                                                | 31.0                                     | 0.8                 | 531           |
| Nagaland                  | 40.5                                                | 18.5                                     | 6.9                 | 608           |
| Tripura                   | 46.7                                                | 6.9                                      | 0.6                 | 461           |
| <b>West</b>               |                                                     |                                          |                     |               |
| Dadra & Nagar Haveli      | 78.3                                                | 66.9                                     | 11.2                | 451           |
| Daman & Diu               | 69.2                                                | 40.7                                     | 5.9                 | 434           |
| Goa                       | 35.7                                                | 17.6                                     | 2.5                 | 637           |
| Gujarat                   | 34.8                                                | 46.9                                     | 8.3                 | 991           |
| Maharashtra               | 29.6                                                | 28.8                                     | 5.8                 | 1,790         |
| <b>South</b>              |                                                     |                                          |                     |               |
| Andaman & Nicobar Islands | 34.6                                                | 10.2                                     | 0.4                 | 523           |
| Andhra Pradesh            | 54.5                                                | 45.1                                     | 5.7                 | 1,105         |
| Karnataka                 | 57.6                                                | 28.6                                     | 4.3                 | 1,004         |
| Kerala                    | 67.6                                                | 58.2                                     | 13.4                | 1,209         |
| Lakshadweep               | 51.5                                                | 49.2                                     | 7.4                 | 502           |
| Puducherry                | 65.9                                                | 46.0                                     | 22.1                | 640           |
| Tamil Nadu                | 69.4                                                | 56.9                                     | 26.9                | 1,534         |
| Telangana                 | 35.3                                                | 27.8                                     | 5.2                 | 1,061         |

## 16.2 UTILISATION OF SOCIAL SECURITY SCHEMES BY THE ELDERLY

It has often been seen that the awareness of a scheme alone does not necessarily lead to its utilisation. Therefore, it is important to understand the coverage of these schemes alongside the levels of awareness. Table 16.3 presents the percentage of elderly age 60 and above who receive benefits from the various social security schemes according to their background characteristics. About a third of the rural elderly (29%) from BPL households receive benefits from IGNOAPS. Amongst the elderly widows belonging to BPL households, a quarter of them (24%) receive the widow pension. The percentages of the elderly receiving these benefits are lower in urban areas than in rural areas. Of the elderly who live alone and belong to BPL households, 27% receive IGNWPS and 32% receive IGNOAPS benefits. Almost a quarter of elderly Hindu women with a BPL card (23%) receive IGNWPS benefits.

Although the schemes are meant for elderly in BPL households and destitute, as reported, 16% of the elderly men belonging to non-BPL households received the benefits of an old-age pension, and 15% of the elderly women of non-BPL households received the benefits of the widow pension. For elderly widows, they can either receive an old-age pension or a widow pension, but they cannot be beneficiaries of both schemes simultaneously.

**Table 16.3 Percentage of elderly age 60 and above who receive benefits from various social security schemes by background characteristics, India, LASI Wave 1, 2017-18**

| Background Characteristics               | Old Age Pension Scheme |               |             |               | Widow Pension Scheme |               |             |              | Annapurna Scheme |               |             |               |
|------------------------------------------|------------------------|---------------|-------------|---------------|----------------------|---------------|-------------|--------------|------------------|---------------|-------------|---------------|
|                                          | BPL                    | Number        | Non-BPL     | Total         | BPL                  | Number        | Non-BPL     | Total        | BPL              | Number        | Non-BPL     | Total         |
| <b>Place of residence</b>                |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Rural                                    | 30.3                   | 12,076        | 20.4        | 8,649         | 26.3                 | 20,725        | 25.4        | 3,389        | 17.8             | 2,013         | 22.6        | 5,402         |
| Urban                                    | 22.1                   | 4,007         | 9.7         | 6,732         | 14.0                 | 10,739        | 17.8        | 1,327        | 9.4              | 1,697         | 12.5        | 3,024         |
| <b>Sex</b>                               |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Male                                     | 31.4                   | 7,539         | 16.4        | 7,559         | 24.1                 | 15,098        | NA          | NA           | NA               | NA            | 2.5         | 7,539         |
| Female                                   | 26.3                   | 8,544         | 15.9        | 7,822         | 21.3                 | 16,366        | 23.7        | 4,716        | 13.9             | 3,710         | 19.2        | 8,426         |
| <b>Marital status</b>                    |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Currently married                        | 28.4                   | 9,726         | 14.8        | 10,194        | 21.7                 | 19,920        | NA          | NA           | NA               | NA            | 2.5         | 9,726         |
| Widowed                                  | 29.4                   | 5,896         | 18.2        | 4,823         | 24.2                 | 10,719        | NA          | NA           | NA               | NA            | 2.1         | 5,896         |
| Divorced/Separated/Deserted/Others       | 24.6                   | 461           | 20.4        | 364           | 22.9                 | 825           | NA          | NA           | NA               | NA            | 2.5         | 461           |
| <b>Living arrangement</b>                |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Living alone                             | 32.1                   | 992           | 21.3        | 630           | 27.6                 | 1,622         | 26.5        | 751          | 17.3             | 421           | 22.9        | 1,172         |
| Living with spouse and/or others         | 30.3                   | 3,317         | 16.4        | 2,898         | 24.0                 | 6,215         | NA          | NA           | NA               | NA            | 3.3         | 3,317         |
| Living with spouse and children          | 27.2                   | 6,302         | 14.0        | 7,163         | 20.4                 | 13,465        | NA          | NA           | NA               | NA            | 2.0         | 6,302         |
| Living with children and others          | 28.1                   | 4,531         | 16.7        | 3,887         | 22.6                 | 8,418         | 23.2        | 3,410        | 14.1             | 2,841         | 18.9        | 6,251         |
| Living with others only                  | 31.9                   | 941           | 24.5        | 803           | 28.7                 | 1,744         | 22.6        | 555          | 9.0              | 448           | 16.7        | 1,003         |
| <b>Religion</b>                          |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Hindu                                    | 28.7                   | 11,891        | 16.0        | 11,146        | 22.7                 | 23,037        | 23.3        | 3,472        | 13.9             | 2,717         | 19.0        | 6,189         |
| Muslim                                   | 30.1                   | 1,898         | 11.5        | 1,833         | 21.3                 | 3,731         | 27.0        | 582          | 12.4             | 461           | 20.5        | 1,043         |
| Christian                                | 27.2                   | 1,894         | 14.9        | 1,256         | 23.4                 | 3,150         | 27.1        | 552          | 15.9             | 285           | 24.3        | 837           |
| Others                                   | 22.5                   | 400           | 27.1        | 1,146         | 25.8                 | 1,546         | 13.1        | 110          | 17.7             | 247           | 16.1        | 357           |
| <b>Caste</b>                             |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Scheduled tribe                          | 32.9                   | 3,262         | 20.6        | 1,911         | 29.4                 | 5,173         | 24.8        | 943          | 5.1              | 470           | 22.4        | 1,413         |
| Scheduled caste                          | 31.7                   | 3,196         | 26.7        | 1,944         | 29.9                 | 5,140         | 26.5        | 942          | 16.1             | 524           | 22.9        | 1,466         |
| Other backward class                     | 28.5                   | 6,592         | 16.0        | 5,294         | 22.6                 | 11,886        | 22.5        | 1,891        | 14.2             | 1,247         | 18.6        | 3,138         |
| None of the above                        | 23.1                   | 3,033         | 11.6        | 6,232         | 15.8                 | 9,265         | 22.3        | 940          | 12.5             | 1,469         | 16.5        | 2,409         |
| <b>Education</b>                         |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| No schooling                             | 30.9                   | 10,321        | 23.0        | 6,568         | 27.8                 | 16,889        | 25.0        | 3,832        | 16.8             | 2,451         | 21.7        | 6,283         |
| Less than 5 years complete               | 30.5                   | 2,038         | 14.4        | 1,743         | 23.2                 | 3,781         | 19.9        | 414          | 11.6             | 407           | 15.2        | 821           |
| 5-9 years complete                       | 23.6                   | 2,620         | 14.9        | 3,397         | 18.6                 | 6,017         | 18.6        | 389          | 8.8              | 553           | 12.4        | 942           |
| 10 or more years complete                | 14.1                   | 1,104         | 4.4         | 3,673         | 6.6                  | 4,777         | 3.6         | 81           | 4.1              | 299           | 4.0         | 380           |
| <b>Work status</b>                       |                        |               |             |               |                      |               |             |              |                  |               |             |               |
| Currently working                        | 24.2                   | 5,631         | 15.3        | 3,676         | 20.8                 | 9,307         | 24.4        | 839          | 21.5             | 375           | 23.6        | 1,214         |
| Worked in past but currently not working | 33.2                   | 6,616         | 17.0        | 6,761         | 25.3                 | 13,377        | 26.2        | 2,018        | 15.3             | 1,220         | 22.0        | 3,238         |
| Never worked                             | 27.3                   | 3,836         | 15.5        | 4,944         | 20.4                 | 8,780         | 20.1        | 1,859        | 11.9             | 2,115         | 15.3        | 3,974         |
| <b>Total</b>                             | <b>28.7</b>            | <b>16,083</b> | <b>16.1</b> | <b>15,381</b> | <b>22.6</b>          | <b>31,464</b> | <b>23.7</b> | <b>4,716</b> | <b>13.9</b>      | <b>3,710</b>  | <b>19.2</b> | <b>8,426</b>  |
|                                          |                        |               |             |               |                      |               |             |              | <b>2.3</b>       | <b>16,083</b> | <b>0.2</b>  | <b>15,381</b> |
|                                          |                        |               |             |               |                      |               |             |              |                  |               |             | <b>1.3</b>    |
|                                          |                        |               |             |               |                      |               |             |              |                  |               |             | <b>31,464</b> |



continued

| States/Union Territories  | National Old Age Pension Scheme |        |         |        | Widow Pension Scheme |     |        |         | Annapurna Scheme |       |     |        |
|---------------------------|---------------------------------|--------|---------|--------|----------------------|-----|--------|---------|------------------|-------|-----|--------|
|                           | BPL                             | Number | Non-BPL | Number | Total                | BPL | Number | Non-BPL | Number           | Total | BPL | Number |
| <b>South</b>              |                                 |        |         |        |                      |     |        |         |                  |       |     |        |
| Andaman & Nicobar Islands | 29.0                            | 153    | 32.1    | 370    | 31.2                 |     | 523    |         |                  |       |     | 523    |
| Andhra Pradesh            | 34.2                            | 961    | 7.9     | 144    | 30.7                 |     | 1,105  |         |                  |       |     | 1,105  |
| Karnataka                 | 48.2                            | 758    | 19.1    | 246    | 38.1                 |     | 1,004  |         |                  |       |     | 1,004  |
| Kerala                    | 34.7                            | 508    | 23.3    | 701    | 27.9                 |     | 1,209  |         |                  |       |     | 1,209  |
| Lakshadweep               | 9.3                             | 154    | 5.7     | 348    | 6.9                  |     | 502    |         |                  |       |     | 502    |
| Puducherry                | 53.0                            | 362    | 34.0    | 278    | 44.7                 |     | 640    |         |                  |       |     | 640    |
| Tamil Nadu                | 13.0                            | 1,126  | 14.0    | 408    | 13.3                 |     | 1,534  |         |                  |       |     | 1,534  |
| Telangana                 | 24.8                            | 841    | 8.1     | 220    | 21.2                 |     | 1,061  |         |                  |       |     | 1,061  |

## 16.3 REASONS FOR NOT UTILISING THE SCHEMES

The reasons for not utilising the social security schemes were also explored in the survey, with reasons of ‘no need’, ‘not eligible or not applicable’, ‘do not have the proper documents’, ‘not yet applied’, ‘process of getting benefits is cumbersome’, and ‘other reasons’. Table 16.5 presents the reasons reported for not utilising the social welfare schemes and shows that more than a third (35%) of the elderly men report that the process of getting benefits is cumbersome. However, a quarter of the elderly men (26%) have not applied for an old-age pension. For IGNWPS, 10% of the elderly widows said that they do not need this pension, and 47% of the elderly widows are not eligible for it.

**Table 16.5 Percent distribution of elderly age 60 and above of BPL households not utilising the social security scheme by reasons according to sex, India, LASI Wave 1, 2017-18**

| Men                    |         |                             |                      |                 |                                           |               |              |
|------------------------|---------|-----------------------------|----------------------|-----------------|-------------------------------------------|---------------|--------------|
| Social Security Scheme | No need | Not eligible/Not applicable | Not having documents | Not yet applied | Process of getting benefits is cumbersome | Other reasons | Number       |
| Old Age Pension Scheme | 7.2     | 19.9                        | 8.3                  | 25.6            | 35.1                                      | 3.8           | <b>2,244</b> |
| Annapurna Scheme       | 12.1    | 38.4                        | 10.5                 | 19.9            | 18.4                                      | 0.6           | <b>867</b>   |
| Women                  |         |                             |                      |                 |                                           |               |              |
| Social Security scheme | No need | Not eligible/Not applicable | Not having documents | Not yet applied | Process of getting benefits is cumbersome | Other reasons | Number       |
| Old Age Pension Scheme | 5.9     | 22.5                        | 6.9                  | 24.5            | 36.5                                      | 3.7           | <b>2,437</b> |
| Widow Pension Scheme   | 10.3    | 47.4                        | 5.2                  | 14.9            | 20.0                                      | 2.2           | <b>2,720</b> |
| Annapurna Scheme       | 8.7     | 46.3                        | 8.6                  | 17.3            | 18.3                                      | 0.8           | <b>589</b>   |

In the LASI, questions were also asked about the types of problems usually faced by the elderly in receiving the benefits. Table 16.6 shows the percent distribution of the elderly age 60 and above of BPL households by the type of problems they face while receiving the pension. Thirty percent of the elderly beneficiaries of the old-age pension scheme state that there was a delay in receiving the money, and 24% experience problems in producing the required documents. Similarly, 35% of the beneficiaries of IGNWPS report a delay in receiving financial assistance, and 17% have problems in producing the required documents.

**Table 16.6 Percent distribution of elderly age 60 and above of BPL households by type of problems faced in receiving pension benefits, India, LASI Wave 1, 2017-18**

| Social Security Scheme | Delay in receiving money | Non-receipt of pension | Documentation Problems | Other Problems | Number |
|------------------------|--------------------------|------------------------|------------------------|----------------|--------|
| Old Age Pension Scheme | 29.9                     | 5.7                    | 24.2                   | 40.3           | 689    |
| Widow Pension Scheme   | 35.4                     | 9.1                    | 16.7                   | 38.8           | 169    |

## 16.4 AWARENESS AND UTILISATION OF CONCESSIONS FOR SENIOR CITIZENS

The Ministry of Social Justice and Empowerment, the nodal ministry responsible for the welfare of senior citizens along with many other ministries provide various types of concessions, insurance, and tax benefits. In addition to collecting information on social security schemes, LASI also gathered data on the awareness and utilisation of special concessions provided by the government to senior citizens which aimed to improve their quality of life. These include concessions in train, bus, and air travel, telephone connections, special interest rates for bank accounts and loans, and income tax benefits for the elderly.

Table 16.7 provides the percentage of the elderly who are aware of any concessions according to the background characteristics. Awareness is higher amongst the elderly in the urban (37%) than in rural areas (25%). A higher proportion of elderly men (33%) than elderly women (24%) are aware of the concessions. With an increase in education as well as the MPCE quintile, there is an increase in the awareness of concessions amongst both elderly men and women. The proportion of awareness of concessions increases from 18% amongst elderly women with no education to 54% of women with 10 or more years of education.

Figure 16.2 provides information on the awareness and utilisation of concessions provided by the government and shows that less than a third (28%) of the elderly age 60 and above are aware of any of the concessions provided by the government. Awareness of the concessions amongst the rural elderly is comparatively lower than their urban counterparts. The awareness of concessions amongst the elderly is highest in the state of Maharashtra (65%) and lowest in the state of Nagaland (2%). With the exception of Maharashtra, in the other states or UTs, the majority of the elderly are not aware of any concessions provided by the government. In Nagaland, Telangana, Arunachal Pradesh, and Jammu & Kashmir, 6% or less of the elderly are aware of these concessions.

**Table 16.7 Percentage of elderly age 60 and above who are aware about any concessions given by government by sex according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Men         |               | Women       |               | Total       |               |
|------------------------------------------|-------------|---------------|-------------|---------------|-------------|---------------|
|                                          | Percentage  | Number        | Percentage  | Number        | Percentage  | Number        |
| <b>Place of residence</b>                |             |               |             |               |             |               |
| Rural                                    | 30.2        | 10,077        | 19.7        | 10,648        | 24.9        | 20,725        |
| Urban                                    | 40.0        | 5,021         | 33.6        | 5,718         | 36.7        | 10,739        |
| <b>Marital status</b>                    |             |               |             |               |             |               |
| Currently married                        | 34.3        | 12,398        | 23.9        | 7,522         | 30.5        | 19,920        |
| Widowed                                  | 27.7        | 2,293         | 24.0        | 8,426         | 25.0        | 10,719        |
| Divorced/Separated/Deserted/Others       | 21.1        | 407           | 27.7        | 418           | 24.3        | 825           |
| <b>Living arrangement</b>                |             |               |             |               |             |               |
| Living alone                             | 26.6        | 365           | 21.7        | 1,257         | 22.9        | 1,622         |
| Living with spouse and/or others         | 32.4        | 3,739         | 23.2        | 2,476         | 28.9        | 6,215         |
| Living with spouse and children          | 35.3        | 8,528         | 24.4        | 4,937         | 31.4        | 13,465        |
| Living with children and others          | 28.5        | 1,928         | 25.4        | 6,490         | 26.4        | 8,418         |
| Living with others only                  | 23.0        | 538           | 18.7        | 1,206         | 20.1        | 1,744         |
| <b>Religion</b>                          |             |               |             |               |             |               |
| Hindu                                    | 33.9        | 11,078        | 24.8        | 11,959        | 29.3        | 23,037        |
| Muslim                                   | 28.1        | 1,804         | 17.4        | 1,927         | 22.8        | 3,731         |
| Christian                                | 33.0        | 1,468         | 19.4        | 1,682         | 25.2        | 3,150         |
| Others                                   | 26.6        | 748           | 28.2        | 798           | 27.7        | 1,546         |
| <b>Caste</b>                             |             |               |             |               |             |               |
| Scheduled tribe                          | 18.9        | 2,436         | 11.5        | 2,737         | 14.9        | 5,173         |
| Scheduled caste                          | 25.2        | 2,448         | 18.7        | 2,692         | 21.8        | 5,140         |
| Other backward class                     | 34.1        | 5,781         | 25.8        | 6,105         | 30.0        | 11,886        |
| None of the above                        | 40.2        | 4,433         | 28.6        | 4,832         | 34.2        | 9,265         |
| <b>Education</b>                         |             |               |             |               |             |               |
| No schooling                             | 20.5        | 5,479         | 18.3        | 11,410        | 19.1        | 16,889        |
| Less than 5 years complete               | 33.4        | 2,184         | 29.6        | 1,597         | 32.1        | 3,781         |
| 5-9 years complete                       | 38.1        | 3,850         | 37.8        | 2,167         | 38.1        | 6,017         |
| 10 or more years complete                | 48.3        | 3,585         | 54.0        | 1,192         | 49.8        | 4,777         |
| <b>Work status</b>                       |             |               |             |               |             |               |
| Currently working                        | 32.1        | 6,331         | 23.5        | 2,976         | 29.4        | 9,307         |
| Worked in past but currently not working | 34.8        | 8,011         | 25.3        | 5,366         | 31.0        | 13,377        |
| Never worked                             | 16.7        | 756           | 23.2        | 8,024         | 22.9        | 8,780         |
| <b>MPCE quintile</b>                     |             |               |             |               |             |               |
| Poorest                                  | 26.1        | 3,035         | 17.9        | 3,449         | 21.7        | 6,484         |
| Poorer                                   | 30.6        | 3,068         | 21.6        | 3,409         | 25.9        | 6,477         |
| Middle                                   | 34.3        | 3,064         | 23.7        | 3,352         | 29.0        | 6,416         |
| Richer                                   | 34.6        | 2,990         | 28.1        | 3,180         | 31.4        | 6,170         |
| Richest                                  | 40.6        | 2,941         | 31.2        | 2,976         | 36.2        | 5,917         |
| <b>Total</b>                             | <b>32.9</b> | <b>15,098</b> | <b>24.0</b> | <b>16,366</b> | <b>28.4</b> | <b>31,464</b> |



**Figure 16.2 Percentage of elderly age 60 and above who are aware about any concessions given by government, states/UTs, LASI Wave 1, 2017-18**

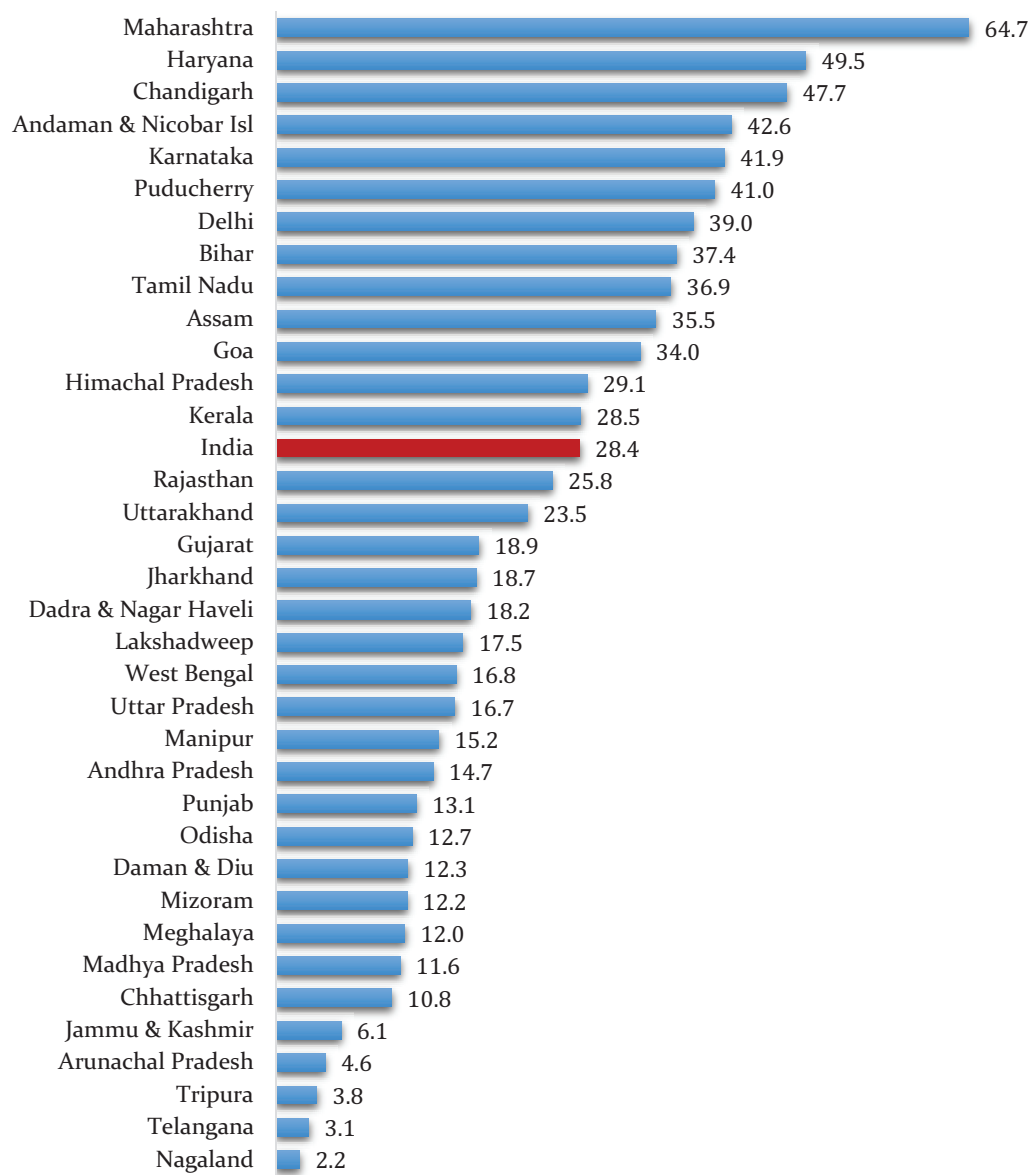
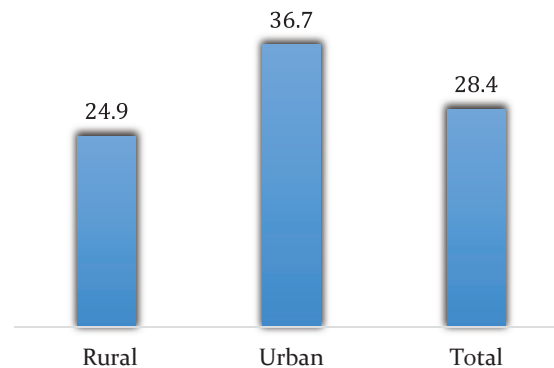


Figure 16.3 shows that 28% of the elderly are aware of the concessions given by the government, and awareness of the concessions is higher amongst the urban elderly (37%) compared to their rural counterparts (25%).

**Figure 16.3 Percentage of elderly age 60 and above who are aware about any concessions for senior citizens, according to place of residence, India, LASI Wave 1, 2017-18**



A higher proportion of the elderly age 60 and above from urban areas compared to rural areas have used the concessions. Similarly, a higher proportion of elderly men than elderly women are using concessions. The concessions are also being utilised more by the elderly who are economically well-off because of their enhanced awareness. Higher education and better household economic conditions also lead to a higher utilisation of these concessions (Table 16.8).

The proportion of the elderly who utilise the various types of concessions is low. Only 15% of the elderly have received concessions for train and bus travel, and 2% of the elderly utilise concessions for air travel. However, 3% of the elderly have benefitted from special interest rates for bank accounts or loans (Table 16.9).

**Table 16.8 Percentage of elderly age 60 and above who received concessions according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Train travel | Bus travel  | Air travel | Telecommunications services (phone, etc.) | Special interest rates on bank account or loan | Income tax rebate | Number        |
|------------------------------------------|--------------|-------------|------------|-------------------------------------------|------------------------------------------------|-------------------|---------------|
| <b>Place of residence</b>                |              |             |            |                                           |                                                |                   |               |
| Rural                                    | 11.4         | 12.3        | 1.1        | 0.5                                       | 2.2                                            | 0.7               | 20,725        |
| Urban                                    | 23.0         | 20.4        | 4.7        | 2.3                                       | 5.9                                            | 3.2               | 10,739        |
| <b>Sex</b>                               |              |             |            |                                           |                                                |                   |               |
| Male                                     | 17.4         | 15.5        | 3.1        | 1.5                                       | 5.4                                            | 2.3               | 15,098        |
| Female                                   | 12.4         | 13.9        | 1.3        | 0.5                                       | 1.5                                            | 0.6               | 16,366        |
| <b>Marital status</b>                    |              |             |            |                                           |                                                |                   |               |
| Currently married                        | 16.3         | 14.9        | 2.8        | 1.3                                       | 4.2                                            | 1.9               | 19,920        |
| Widowed                                  | 12.5         | 14.5        | 1.1        | 0.5                                       | 1.8                                            | 0.6               | 10,719        |
| Divorced/Separated/Deserted/Others       | 12.8         | 9.7         | 0.2        | 0.1                                       | 3.5                                            | 0.2               | 825           |
| <b>Living arrangement</b>                |              |             |            |                                           |                                                |                   |               |
| Living alone                             | 11.1         | 12.8        | 0.6        | 0.3                                       | 1.7                                            | 0.3               | 1,622         |
| Living with spouse and/or others         | 15.4         | 14.1        | 2.5        | 1.0                                       | 3.5                                            | 1.6               | 6,215         |
| Living with spouse and children          | 16.7         | 15.4        | 3.0        | 1.4                                       | 4.6                                            | 2.1               | 13,465        |
| Living with children and others          | 13.9         | 15.7        | 1.3        | 0.6                                       | 2.1                                            | 0.6               | 8,418         |
| Living with others only                  | 7.5          | 8.3         | 0.5        | 0.3                                       | 1.0                                            | 0.4               | 1,744         |
| <b>Religion</b>                          |              |             |            |                                           |                                                |                   |               |
| Hindu                                    | 15.7         | 15.5        | 2.3        | 1.1                                       | 3.6                                            | 1.5               | 23,037        |
| Muslim                                   | 9.7          | 9.3         | 1.2        | 0.5                                       | 1.8                                            | 0.5               | 3,731         |
| Christian                                | 10.1         | 8.6         | 1.8        | 0.9                                       | 2.9                                            | 2.1               | 3,150         |
| Others                                   | 14.0         | 17.2        | 2.3        | 0.9                                       | 2.5                                            | 1.4               | 1,546         |
| <b>Caste</b>                             |              |             |            |                                           |                                                |                   |               |
| Scheduled tribe                          | 5.1          | 7.4         | 0.7        | 0.3                                       | 1.1                                            | 0.4               | 5,173         |
| Scheduled caste                          | 11.1         | 11.0        | 1.1        | 0.5                                       | 2.0                                            | 0.7               | 5,140         |
| Other backward class                     | 15.2         | 15.4        | 1.7        | 0.9                                       | 3.1                                            | 1.2               | 11,886        |
| None of the above                        | 19.6         | 18.1        | 4.0        | 1.8                                       | 5.2                                            | 2.6               | 9,265         |
| <b>Education</b>                         |              |             |            |                                           |                                                |                   |               |
| No schooling                             | 8.2          | 10.3        | 0.5        | 0.3                                       | 1.1                                            | 0.3               | 16,889        |
| Less than 5 years complete               | 15.8         | 17.3        | 0.8        | 0.3                                       | 2.2                                            | 0.3               | 3,781         |
| 5-9 years complete                       | 20.6         | 18.1        | 2.6        | 1.0                                       | 4.2                                            | 1.5               | 6,017         |
| 10 or more years complete                | 33.0         | 25.8        | 9.1        | 4.6                                       | 12.1                                           | 6.7               | 4,777         |
| <b>Work status</b>                       |              |             |            |                                           |                                                |                   |               |
| Currently working                        | 14.5         | 14.9        | 2.0        | 0.8                                       | 3.6                                            | 1.1               | 9,307         |
| Worked in past but currently not working | 15.5         | 15.9        | 2.5        | 1.4                                       | 4.2                                            | 2.0               | 13,377        |
| Never worked                             | 14.2         | 12.4        | 1.6        | 0.7                                       | 1.6                                            | 0.8               | 8,780         |
| <b>MPCE quintile</b>                     |              |             |            |                                           |                                                |                   |               |
| Poorest                                  | 10.2         | 10.5        | 0.9        | 0.6                                       | 2.0                                            | 0.5               | 6,484         |
| Poorer                                   | 12.7         | 12.5        | 1.5        | 0.5                                       | 2.2                                            | 0.9               | 6,477         |
| Middle                                   | 14.4         | 15.0        | 2.1        | 1.3                                       | 3.7                                            | 1.4               | 6,416         |
| Richer                                   | 17.6         | 18.1        | 2.4        | 1.1                                       | 3.6                                            | 1.7               | 6,170         |
| Richest                                  | 21.0         | 18.7        | 4.2        | 1.7                                       | 5.7                                            | 3.1               | 5,917         |
| <b>Total</b>                             | <b>14.8</b>  | <b>14.7</b> | <b>2.1</b> | <b>1.0</b>                                | <b>3.3</b>                                     | <b>1.4</b>        | <b>31,464</b> |

State-wise differences in the utilisation of concessions are presented in Table 16.9. Delhi has the highest usage of income tax rebates, special bank interest rates, train, air, and bus travel concessions, and telephone connections on a priority basis. A sizeable proportion of the elderly from Chandigarh, Haryana, Bihar, Maharashtra, and Puducherry have used travel concessions, while none of the elderly interviewed from Arunachal Pradesh have used any concessions. A small proportion of the elderly from the states /UTs of Jammu and Kashmir, Nagaland, Tripura, and Mizoram are using the concessions meant for the senior citizens.

**Table 16.9 Percentage of elderly age 60 and above who received concessions, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Train travel | Bus travel  | Air travel | Telecommunications services | Special interest rates on bank accounts or loan | Income tax benefits | Number        |
|---------------------------|--------------|-------------|------------|-----------------------------|-------------------------------------------------|---------------------|---------------|
| <b>India</b>              | <b>14.8</b>  | <b>14.7</b> | <b>2.1</b> | <b>1.0</b>                  | <b>3.3</b>                                      | <b>1.4</b>          | <b>31,464</b> |
| <b>North</b>              |              |             |            |                             |                                                 |                     |               |
| Chandigarh                | 32.3         | 34.8        | 1.3        | 0.0                         | 2.6                                             | 2.8                 | 394           |
| Delhi                     | 33.1         | 25.5        | 9.7        | 7.1                         | 14.9                                            | 8.6                 | 495           |
| Haryana                   | 27.4         | 32.7        | 2.7        | 0.8                         | 5.8                                             | 1.6                 | 848           |
| Himachal Pradesh          | 6.6          | 15.3        | 2.4        | 1.1                         | 8.4                                             | 3.1                 | 621           |
| Jammu & Kashmir           | 1.1          | 0.9         | 0.5        | 0.2                         | 0.2                                             | 0.1                 | 731           |
| Punjab                    | 5.9          | 3.8         | 0.3        | 0.2                         | 1.0                                             | 0.4                 | 1,004         |
| Rajasthan                 | 11.5         | 17.8        | 4.4        | 1.7                         | 5.0                                             | 2.4                 | 1,078         |
| Uttarakhand               | 9.9          | 11.8        | 0.6        | 0.1                         | 2.9                                             | 1.0                 | 641           |
| <b>Central</b>            |              |             |            |                             |                                                 |                     |               |
| Chhattisgarh              | 7.8          | 1.0         | 0.8        | 0.0                         | 3.1                                             | 1.3                 | 780           |
| Madhya Pradesh            | 6.5          | 2.1         | 0.6        | 0.0                         | 1.1                                             | 0.2                 | 1,313         |
| Uttar Pradesh             | 11.8         | 6.8         | 2.1        | 1.2                         | 3.1                                             | 1.6                 | 2,169         |
| <b>East</b>               |              |             |            |                             |                                                 |                     |               |
| Bihar                     | 22.2         | 4.8         | 1.5        | 1.6                         | 3.5                                             | 1.7                 | 1,808         |
| Jharkhand                 | 14.2         | 2.0         | 1.4        | 1.0                         | 5.2                                             | 2.3                 | 1,168         |
| Odisha                    | 11.1         | 6.3         | 2.5        | 0.5                         | 3.4                                             | 1.4                 | 1,237         |
| West Bengal               | 10.3         | 4.1         | 3.0        | 1.1                         | 3.9                                             | 1.0                 | 1,544         |
| <b>Northeast</b>          |              |             |            |                             |                                                 |                     |               |
| Arunachal Pradesh         | 0.0          | 0.0         | 0.0        | 0.0                         | 0.0                                             | 0.0                 | 318           |
| Assam                     | 4.3          | 2.5         | 1.6        | 0.1                         | 0.7                                             | 0.1                 | 816           |
| Manipur                   | 7.9          | 6.7         | 6.5        | 4.1                         | 5.1                                             | 1.4                 | 606           |
| Meghalaya                 | 0.2          | 0.0         | 0.2        | 0.2                         | 0.2                                             | 0.0                 | 412           |
| Mizoram                   | 0.5          | 3.2         | 0.0        | 0.0                         | 0.0                                             | 0.0                 | 531           |
| Nagaland                  | 0.4          | 0.0         | 0.1        | 0.0                         | 0.0                                             | 0.0                 | 608           |
| Tripura                   | 1.9          | 1.2         | 1.3        | 0.0                         | 1.0                                             | 0.8                 | 461           |
| <b>West</b>               |              |             |            |                             |                                                 |                     |               |
| Dadra & Nagar Haveli      | 3.7          | 2.6         | 0.0        | 0.0                         | 0.9                                             | 0.0                 | 451           |
| Daman & Diu               | 6.2          | 0.6         | 0.1        | 0.0                         | 1.7                                             | 1.2                 | 434           |
| Goa                       | 7.6          | 14.6        | 3.0        | 1.9                         | 2.8                                             | 1.5                 | 637           |
| Gujarat                   | 10.3         | 5.0         | 2.6        | 1.3                         | 3.7                                             | 3.3                 | 991           |
| Maharashtra               | 30.4         | 55.6        | 3.2        | 0.7                         | 4.1                                             | 0.9                 | 1,790         |
| <b>South</b>              |              |             |            |                             |                                                 |                     |               |
| Andaman & Nicobar Islands | 4.7          | 40.9        | 3.6        | 0.0                         | 0.0                                             | 0.0                 | 523           |
| Andhra Pradesh            | 6.5          | 10.2        | 2.2        | 1.6                         | 2.3                                             | 1.7                 | 1,105         |
| Karnataka                 | 17.2         | 29.3        | 0.6        | 0.4                         | 2.4                                             | 0.4                 | 1,004         |
| Kerala                    | 11.9         | 5.6         | 2.5        | 1.9                         | 2.9                                             | 1.9                 | 1,209         |
| Lakshadweep               | 2.7          | 5.3         | 3.5        | 0.9                         | 0.8                                             | 0.4                 | 502           |
| Puducherry                | 22.1         | 22.9        | 6.9        | 2.2                         | 1.8                                             | 0.8                 | 640           |
| Tamil Nadu                | 17.8         | 12.0        | 3.9        | 2.0                         | 5.9                                             | 2.7                 | 1,534         |
| Telangana                 | 1.8          | 1.7         | 0.9        | 0.7                         | 1.0                                             | 0.9                 | 1,061         |

## 16.5 AWARENESS OF THE MAINTENANCE AND WELFARE OF PARENTS AND SENIOR CITIZENS ACT

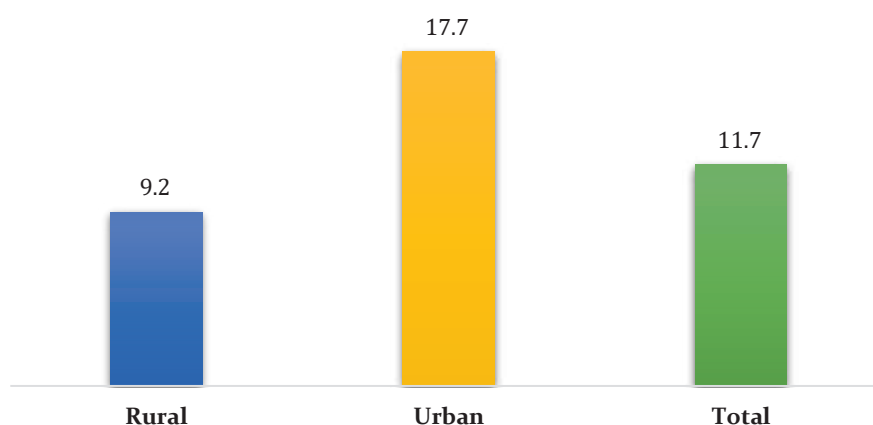
The Maintenance and Welfare of Parents and Senior Citizens Act was enacted in 2007 to ensure the needs-based maintenance and welfare of parents and senior citizens.

The Act provides for:

- i. Maintenance of parents or senior citizens by children or relatives made obligatory and justiciable through tribunals.
- ii. Revocation of the transfer of property by senior citizens in case of negligence by relatives.
- iii. Penal provision for the abandonment of senior citizens.
- iv. Establishment of old-age homes for indigent senior citizens.
- v. Protection of life and property of senior citizens.
- vi. Adequate medical facilities for senior citizens

In LASI, the elderly respondents were asked: ‘Are you aware of or heard about the Maintenance and Welfare of Parents and Senior Citizens Act?’ Figure 16.4 shows the percentage of the elderly who are aware of this Act in rural and urban areas. Only 12% of the elderly are aware of the Act, and awareness is relatively higher amongst the urban elderly (18%) than those from rural areas (9%).

**Figure 16.4 Percentage of elderly age 60 and above who are aware of “Maintenance and Welfare of Parents and Senior Citizens Act” by place of residence, India, LASI Wave 1, 2017-18**



More elderly men compared to women are aware of the Act, and awareness amongst the elderly increases with the increased levels of education. Only 5% of elderly women with no formal education are aware of the Act, however, 39% of elderly women with 10 or more years of education are aware of it. Across the states/UTs, awareness of the Act amongst elderly men is highest in the state of Assam (54%) followed by Puducherry (51%), Tamil Nadu (28%), and Chandigarh (23%). Awareness of the Act amongst elderly women is almost absent in the states of Punjab (1%), Nagaland (1%), and Jharkhand (2%) (Table 16.11). These results demonstrate that awareness campaigns in local languages on the provisions of the Act are necessary, helplines for senior citizens should be used for spreading information about the Act, and Panchayats must be involved in creating awareness in rural areas.

**Table 16.10 Percentage of elderly age 60 and above who are aware of “Maintenance and Welfare of Parents and Senior Citizens Act” by sex according to background characteristics, India, LASI Wave 1, 2017-18**

| Background characteristics               | Men         |               | Women      |               | Total       |               |
|------------------------------------------|-------------|---------------|------------|---------------|-------------|---------------|
|                                          | Percentage  | Number        | Percentage | Number        | Percentage  | Number        |
| <b>Place of residence</b>                |             |               |            |               |             |               |
| Rural                                    | 12.5        | 10,077        | 6.1        | 10,648        | 9.2         | 20,725        |
| Urban                                    | 21.9        | 5,021         | 14.3       | 5,718         | 17.7        | 10,739        |
| <b>Marital status</b>                    |             |               |            |               |             |               |
| Currently married                        | 16.0        | 12,398        | 10.1       | 7,522         | 13.8        | 19,920        |
| Widowed                                  | 12.0        | 2,293         | 7.6        | 8,426         | 8.5         | 10,719        |
| Divorced/Separated/Deserted/Others       | 8.0         | 407           | 6.3        | 418           | 7.2         | 825           |
| <b>Living arrangement</b>                |             |               |            |               |             |               |
| Living alone                             | 15.0        | 365           | 6.2        | 1,257         | 8.1         | 1,622         |
| Living with spouse and/or others         | 14.8        | 3,739         | 9.9        | 2,476         | 12.9        | 6,215         |
| Living with spouse and children          | 16.5        | 8,528         | 10.4       | 4,937         | 14.3        | 13,465        |
| Living with children and others          | 12.7        | 1,928         | 8.1        | 6,490         | 9.2         | 8,418         |
| Living with others only                  | 6.6         | 538           | 5.3        | 1,206         | 5.7         | 1,744         |
| <b>Religion</b>                          |             |               |            |               |             |               |
| Hindu                                    | 15.7        | 11,078        | 8.9        | 11,959        | 12.1        | 23,037        |
| Muslim                                   | 12.0        | 1,804         | 7.2        | 1,927         | 9.6         | 3,731         |
| Christian                                | 17.1        | 1,468         | 12.2       | 1,682         | 14.3        | 3,150         |
| Others                                   | 10.0        | 748           | 4.9        | 798           | 7.3         | 1,546         |
| <b>Caste</b>                             |             |               |            |               |             |               |
| Scheduled tribe                          | 9.1         | 2,436         | 5.2        | 2,737         | 6.9         | 5,173         |
| Scheduled caste                          | 12.0        | 2,448         | 5.1        | 2,692         | 8.3         | 5,140         |
| Other backward class                     | 14.7        | 5,781         | 10.4       | 6,105         | 12.5        | 11,886        |
| None of the above                        | 19.6        | 4,433         | 9.4        | 4,832         | 14.2        | 9,265         |
| <b>Education</b>                         |             |               |            |               |             |               |
| No schooling                             | 6.4         | 5,479         | 4.9        | 11,410        | 5.4         | 16,889        |
| Less than 5 years complete               | 14.3        | 2,184         | 9.7        | 1,597         | 12.4        | 3,781         |
| 5-9 years complete                       | 15.5        | 3,850         | 14.2       | 2,167         | 15.0        | 6,017         |
| 10 or more years complete                | 30.0        | 3,585         | 38.7       | 1,192         | 32.1        | 4,777         |
| <b>Work status</b>                       |             |               |            |               |             |               |
| Currently working                        | 13.0        | 6,331         | 6.3        | 2,976         | 10.8        | 9,307         |
| Worked in past but currently not working | 17.4        | 8,011         | 8.7        | 5,366         | 13.8        | 13,377        |
| Never worked                             | 8.1         | 756           | 9.6        | 8,024         | 9.5         | 8,780         |
| <b>MPCE quintile</b>                     |             |               |            |               |             |               |
| Poorest                                  | 9.8         | 3,035         | 4.9        | 3,449         | 7.1         | 6,484         |
| Poorer                                   | 13.2        | 3,068         | 6.6        | 3,409         | 9.7         | 6,477         |
| Middle                                   | 15.5        | 3,064         | 9.6        | 3,352         | 12.5        | 6,416         |
| Richer                                   | 15.9        | 2,990         | 7.4        | 3,180         | 11.5        | 6,170         |
| Richest                                  | 22.6        | 2,941         | 17.1       | 2,976         | 19.8        | 5,917         |
| <b>Total</b>                             | <b>15.1</b> | <b>15,098</b> | <b>8.7</b> | <b>16,366</b> | <b>11.7</b> | <b>31,464</b> |

**Table 16.11 Percentage of elderly age 60 and above who are aware of “Maintenance and Welfare of Parents and Senior Citizens Act” by sex, states/UTs, LASI Wave 1, 2017-18**

| States/Union Territory    | Men         |               | Women      |               | Total       |               |
|---------------------------|-------------|---------------|------------|---------------|-------------|---------------|
|                           | Percentage  | Number        | Percentage | Number        | Percentage  | Number        |
| <b>India</b>              | <b>15.1</b> | <b>15,098</b> | <b>8.7</b> | <b>16,366</b> | <b>11.7</b> | <b>31,464</b> |
| <b>North</b>              |             |               |            |               |             |               |
| Chandigarh                | 23.2        | 190           | 23.3       | 204           | 23.3        | 394           |
| Delhi                     | 16.7        | 251           | 9.0        | 244           | 12.9        | 495           |
| Haryana                   | 12.1        | 363           | 2.6        | 485           | 6.6         | 848           |
| Himachal Pradesh          | 12.7        | 304           | 1.7        | 317           | 7.1         | 621           |
| Jammu & Kashmir           | 12.1        | 382           | 3.6        | 349           | 7.8         | 731           |
| Punjab                    | 4.0         | 501           | 1.2        | 503           | 2.6         | 1,004         |
| Rajasthan                 | 16.4        | 505           | 5.6        | 573           | 10.5        | 1,078         |
| Uttarakhand               | 13.4        | 303           | 2.8        | 338           | 7.9         | 641           |
| <b>Central</b>            |             |               |            |               |             |               |
| Chhattisgarh              | 9.9         | 392           | 2.8        | 388           | 6.3         | 780           |
| Madhya Pradesh            | 17.6        | 644           | 11.2       | 669           | 14.4        | 1,313         |
| Uttar Pradesh             | 5.7         | 1,119         | 2.9        | 1,050         | 4.3         | 2,169         |
| <b>East</b>               |             |               |            |               |             |               |
| Bihar                     | 12.4        | 925           | 7.8        | 883           | 10.2        | 1,808         |
| Jharkhand                 | 7.2         | 585           | 1.6        | 583           | 4.3         | 1,168         |
| Odisha                    | 16.5        | 601           | 6.5        | 636           | 11.3        | 1,237         |
| West Bengal               | 24.5        | 752           | 9.4        | 792           | 16.7        | 1,544         |
| <b>Northeast</b>          |             |               |            |               |             |               |
| Arunachal Pradesh         | 3.8         | 176           | 0.0        | 142           | 2.0         | 318           |
| Assam                     | 54.3        | 388           | 35.7       | 428           | 44.3        | 816           |
| Manipur                   | 13.2        | 261           | 8.8        | 345           | 10.7        | 606           |
| Meghalaya                 | 7.6         | 164           | 6.0        | 248           | 6.6         | 412           |
| Mizoram                   | 14.6        | 265           | 13.3       | 266           | 14.0        | 531           |
| Nagaland                  | 0.0         | 301           | 1.3        | 307           | 0.7         | 608           |
| Tripura                   | 20.3        | 227           | 15.0       | 234           | 17.6        | 461           |
| <b>West</b>               |             |               |            |               |             |               |
| Dadra & Nagar Haveli      | 28.6        | 197           | 11.5       | 254           | 19.2        | 451           |
| Daman & Diu               | 20.0        | 184           | 6.9        | 250           | 12.1        | 434           |
| Goa                       | 25.5        | 289           | 19.2       | 348           | 22.0        | 637           |
| Gujarat                   | 17.8        | 454           | 8.5        | 537           | 12.7        | 991           |
| Maharashtra               | 15.6        | 829           | 6.7        | 961           | 10.7        | 1,790         |
| <b>South</b>              |             |               |            |               |             |               |
| Andaman & Nicobar Islands | 6.1         | 276           | 5.2        | 247           | 5.7         | 523           |
| Andhra Pradesh            | 9.3         | 551           | 6.2        | 554           | 7.8         | 1,105         |
| Karnataka                 | 10.6        | 479           | 9.4        | 525           | 10.0        | 1,004         |
| Kerala                    | 27.4        | 538           | 13.6       | 671           | 19.4        | 1,209         |
| Lakshadweep               | 17.7        | 240           | 6.1        | 262           | 11.5        | 502           |
| Puducherry                | 51.2        | 275           | 42.7       | 365           | 46.4        | 640           |
| Tamil Nadu                | 28.3        | 685           | 20.0       | 849           | 23.7        | 1,534         |
| Telangana                 | 6.2         | 502           | 3.7        | 559           | 4.9         | 1,061         |

### Key findings: social security schemes for the elderly

- Overall, the awareness of the social security schemes among the elderly in India is low. Slightly more than half of the elderly (55%) are aware of the old-age pension scheme (IGNOAPS), 44% of the elderly are aware of the widow pension scheme (IGNWPS), and only 12% of the elderly interviewed are aware of Annapurna Scheme. A higher proportion of the elderly from rural areas are aware of social security schemes than those from urban areas.
- About a third of the rural elderly from BPL households are recipients of old-age pension benefits. Amongst the elderly widows belonging to BPL households, 24% are recipients of the widow pension scheme.
- The two main reasons reported for not using the social security schemes is that the process of enrolment in the scheme is cumbersome (35%) and because of not having the required documents (8%).
- Slightly more than a third (35%) of the beneficiaries of the widow pension scheme state that there is a considerable delay in receiving the money.
- About a quarter of the elderly are aware of concessions provided by the government such as for train, bus, and air travel, telephone connections, special interest rates for bank accounts and loans, and income tax benefits. This proportion is lower amongst the rural elderly than their urban counterparts.
- Only 12% of the elderly are aware of the Maintenance and Welfare of Parents and Senior Citizens Act 2007.





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## GLOSSARY

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**AADHAAR CARD:** is a 12-digit unique identification number containing the demographic and biometric information of an individual and is issued to the residents of India. The Aadhaar card is issued by the Unique Identification Authority of India (UIDAI), Government of India.

**ACTIVITIES OF DAILY LIVING (ADL):** Activities of Daily Living (ADL) is a term used to refer to normal daily self-care activities (such as movement in bed, changing position from sitting to standing, feeding, bathing, dressing, grooming, personal hygiene etc.) The ability or inability to perform ADLs is used to measure a person's functional status, especially in the case of people with disabilities and the elderly. Elders who maintain their ADL's have a higher level of independence.

**ALZHEIMER'S DISEASE:** Alzheimer's disease is an irreversible, progressive brain disease that slowly destroys memory and thinking skills, and eventually even the ability to carry out the simplest tasks. Alzheimer's disease is the most common cause of dementia among older people.

**ANEMIA:** Anemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status.

**ANNAPURNA SCHEME:** The Annapurna Scheme was launched in the year 2000. Under this scheme food grains provides to the senior citizens who, though eligible, have remained uncovered under the National Old Age Pension Scheme (NOAPS). The Scheme is targeted to cover 20% (13.762 lakh) of persons eligible to receive pension under NOAPS.

**ANY NEUROLOGICAL OR PSYCHIATRIC PROBLEMS:** Neurological disorders are physical diseases of the nervous system and psychiatric illnesses are the disorders that manifest as abnormalities of thought, feeling, or behavior.

**ARTHRITIS / OSTEOARTHRITIS** (degenerative joint disease), a result of trauma to the joint, infection of the joint, or age. It involves the wearing away of the cartilage that caps the bones in your joints.

**ARTHRITIS OR RHEUMATISM,** Osteoporosis or other bone/joint diseases- "Arthritis" is a form of joint disorder that involves inflammation of one or more joints.

**ASTHMA:** Asthma is a chronic inflammatory disorder of the airways, usually associated with airway hyper-responsiveness and variable airflow obstruction, that is often reversible spontaneously or under treatment. Allergen sensitization is an important risk factor for asthma. Asthma is often associated with rhinitis, an inflammation of the nasal mucosa.

**AYUSHMAN BHARAT YOJANA (NATIONAL HEALTH PROTECTION SCHEME):** is a national scheme launched in 2018, under the aegis of Ministry of Health and Family Welfare in India. The scheme aims at making interventions in primary, secondary and tertiary care systems, covering both preventive and promotive health, to address healthcare holistically. It is an umbrella of two major health schemes namely: Health and Wellness Centres (HWC) which will bring health care closer to the homes of the people and Pradhan Mantri Jan Arogya Yojana (PM-JAY) which provides health protection cover to poor and vulnerable families.

**BENIGN PROSTATIC HYPERPLASIA (BPH):** Age-associated prostate gland enlargement that can cause urination difficulty. With this condition, the urinary stream may be weak, or stop and start.

Body functions are the physiological functions of body systems (including psychological functions).

**CANCER:** Cancer is a generic term for a large group of diseases characterized by the growth of abnormal cells beyond their usual boundaries that can then invade adjoining parts of the body and/or spread to other organs. Other common terms used are malignant tumors and neoplasms. Cancer can affect almost any part of the body or organ

**CARDIOVASCULAR DISEASE:** Cardiovascular diseases (CVDs) are disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease and other conditions.

**CATARACT:** Cataract is an eye condition in which the lenses of the eyes become cloudy and opaque, causing partial or total blindness. If the cataract becomes too thick, surgery can be done to repair the lens of the eye.

**CENTRAL GOVERNMENT HEALTH SCHEME (CGHS):** CGHS is a contributory health scheme that provides comprehensive medical care to the central government employees and their dependents.

**CHRONIC BRONCHITIS:** Chronic productive cough for 3 months in each of 2 consecutive years in a patient in whom other causes of productive chronic cough have been excluded.

**CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD):** Chronic obstructive pulmonary disease (COPD) is a lung disease characterized by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The main symptoms include shortness of breath and cough with sputum production. COPD typically worsens over time. Eventually walking up stairs or carrying things becomes difficult. Chronic bronchitis and emphysema are older terms used for different types of COPD.

**CHRONIC RENAL FAILURE** is a progressive loss in kidney function over a period of months or years.

**COMMUNITY/COOPERATIVE HEALTH INSURANCE PROGRAM (CHIP):** Community-based health insurance (CBHI) is a mechanism that allows for pooling of resources to cover the costs of future, unpredictable health-related events.

**COMPLETE EDENTULISM:** Oral Condition in which there is complete loss of natural teeth of oral cavity in elderly people.

**CONGESTIVE HEART FAILURE (CHF)** or congestive cardiac failure (CCF), occurs when the heart is unable to provide sufficient pump action to maintain blood flow in the body.

**Convulsions:** A sudden, violent, irregular movement of the body caused by involuntary contraction of muscles and associated especially with brain disorders.

**CORONARY HEART DISEASE:** Is the most common type of heart disease and cause of heart attacks. The disease is caused by plaque building up along the inner walls of the arteries of the heart, which narrows the arteries and reduces blood flow to the heart. It is also known as Coronary artery disease (CAD) /atherosclerotic heart disease.

**CURRENT WORK:** Current work refers to the work status at the time of the survey. It includes those working at the time of the survey or those who are temporarily laid off, sick, or in training

**DEMENTIA:** Is a group of conditions characterized by impairment of at least two brain functions, such as memory loss and judgment. Symptoms include forgetfulness, limited social skills and thinking abilities so impaired that it interferes with daily functioning.

**DENTAL CARIES:** Dental caries develops over time; loss of tooth substance (enamel and dentine) is caused by acid production resulting from bacterial metabolism of sugars. Advanced stages of dental caries may lead to pain, infections and abscesses, or even sepsis.

**DEPRESSION:** A condition of mood disorder or anxiety, characterized by a depressed mood, lack of interest in activities normally enjoyed, changes in weight and sleep, fatigue, feelings of worthlessness or guilt, difficulty concentrating and thoughts of death

**DIABETES MELLITUS:** Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves.

elderly people.

**EMPHYSEMA:** Permanent enlargement of the airspaces distal to the terminal bronchioles, accompanied by destruction of their walls without obvious fibrosis.

**EMPLOYEES STATE INSURANCE SCHEME (ESIS):** Employees State Insurance Scheme is a self-financing social security and health insurance scheme for Indian workers.

**EVER WORK:** ever work means that a person has worked continuously for at least three months in his or her lifetime. Work includes agricultural work, wage work, self-employed activities, and unpaid family business work.

**EYE PROBLEMS/CONDITIONS:** Eye problem referred to any eye or vision problem or condition, including ordinary nearsightedness or farsightedness

Gastrointestinal problems: Refer to diseases involving the gastrointestinal tract, namely the esophagus, stomach, small intestine, large intestine and rectum, and the accessory organs of digestions, the liver, gallbladder, and pancreas

**GLAUCOMA:** Glaucoma can be regarded as a group of diseases that have as a common end-point a characteristic optic neuropathy which is determined by both structural change and functional deficit.

**HEAD OF THE HOUSEHOLD:** 'A member of the household who is recognized to be so by the other household members as the head of the household'. This person may be acknowledged as the head on the basis of age (older), sex (generally, but not necessarily, male), and economic status (main provider) of the member, or any other reason. The household members determine who heads the household.

**HEARING IMPAIRMENT** implies a total or partial loss of the hearing ability. Hearing loss is diagnosed when hearing testing finds that a person is unable to hear 25 decibels in at least one ear

**HEARING LOSS/DEAFNESS:** A person who is not able to hear as well as someone with normal hearing – hearing thresholds of 25 dB or better in both ears – is said to have hearing loss. 'Hard of hearing' refers to people with hearing loss ranging from mild to severe. People who are hard of hearing usually communicate through spoken language and can benefit from hearing aids, cochlear implants, and other assistive devices as well as captioning. People with more significant hearing losses may benefit from cochlear implants.

**HEART DISEASE:** Generally, refers to conditions that involve narrowed or blocked blood vessels of the heart that can lead to a coronary heart disease, congestive heart failure, heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect heart's muscle, valves or rhythm, also are considered forms of heart disease.

**HEART RATE:** The heart rate represents the number of complete cardiac cycles and therefore the number of times the left ventricles eject blood into the aorta per minute. The average resting heart rate of a human is 72 beats per minutes, but this can vary tremendously depending upon levels of fitness. Heart rate is measured by palpating your radial or carotid arteries. This is referred as pulse rate.

**HUMAN PAPILLOMAVIRUS (HPV)** is the most common viral infection of the reproductive tract. Most sexually active women and men will be infected at some point in their lives and some may be repeatedly infected. Cervical cancer is by far the most common HPV-related disease. Nearly all cases of cervical cancer can be attributable to HPV infection.

**HYPERTENSION OR HIGH BLOOD PRESSURE:** Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure.

**HYSTERECTOMY** is a surgical procedure to remove a woman's uterus.

**IMPAIRMENTS** are problems in body function or structure as a significant deviation or loss

**INCONTINENCE:** Urinary incontinence is the voluntary leakage of urine; in simple terms, to wee when one doesn't intend to. It is the inability to hold urine in bladder because voluntary control over the urinary sphincter is either lost or weakened.

**INDIRA GANDHI NATIONAL WIDOW PENSION SCHEME (IGNWPS):** The Indira Gandhi National Widow Pension Scheme (IGNWPS) is implemented by Ministry of Rural Development, Government of India since 1995. The individuals belong to a household falling below the poverty line as per the Government of India criteria. The pension amount is Rs.200 per month per beneficiary and the concerned state government is also provides the equal amount to the beneficiaries. The pension is to be credited into a post office or public sector bank account of the beneficiary. The pension will be discontinued if there is the case of remarriage or once the widow moves above the poverty line.

**INDOOR AIR POLLUTION:** Indoor air pollution refers to chemical, biological, and physical contamination of indoor air. Households using solid and unclean fuel (for cooking or any other purpose) inside the household and cooking in traditional *chullah/stove* or open fire without any ventilation.

**INDUSTRY:** An industry refers to the type of firm for which a person works. LASI follows the abridged version of the National Classification of Industry, 2015 ([www.mospi.nic.in](http://www.mospi.nic.in)).

**INFECTIOUS DISEASES:** Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can be spread, directly or indirectly, from one person to another. Zoonotic diseases are infectious diseases of animals that can cause disease to humans.

**INPATIENT CARE (HOSPITALISATION):** a person who has stayed at least one night in a health care institution for treatment. Health care institution, for the purpose of survey, is referred to any medical institution having provision for admission of sick persons as indoor patients (inpatients) for treatment.

**INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL):** Activities of daily living that are not necessary related to fundamental functioning of a person, but they let an individual live independently in a community. These task are necessary for independent functioning in the community.

**KIDNEY STONES:** a hard mass formed in the kidneys, usually consisting of insoluble calcium compounds; a renal calculus.

**LASI AGE-ELIGIBLE HOUSEHOLD:** The LASI eligible household (LEH) refers to the household having at least one member aged 45 and above. LASI covered all men and women aged 45+, and their respective spouses even if they were outside this age range (<45).

**LOCOMOTOR IMPAIRMENT:** It is the form of physical disability related to musculoskeletal system. (Legs, arms) having reduced function of legs, finger, arms and hands includes the lack of arms or hands, or reduced ability to use them due to no or low strength or co-ordination

**LUNG FUNCTION TEST:** Lung function tests (also called pulmonary function tests) include a variety of tests that check how well the lungs work. The most basic test is spirometry. This test measures the amount of air the lungs can hold. The test also measures how forcefully one can empty air from the lungs. Spirometry is used to screen for diseases that affect lung volumes. It also is used to screen for diseases that affect the airways, such as COPD or asthma.

**MAIN JOB:** Main job is defined as a paid job at which a person works for the longest hours.

**MAMMOGRAPHY:** A mammography, or mammogram, is an X-ray of the breast. It's a screening tool used to detect and diagnose breast cancer. Together with regular clinical exams and monthly breast self-examinations, mammograms are a key element in the early diagnosis of breast cancer.

**MIGRAINE:** A headache of varying intensity, often accompanied by nausea and sensitivity to light and sound.

**MOBILITY:** is about moving by changing body position or location or by transferring from one place to another, by carrying, moving or manipulating objects, by walking, running or climbing, and by using various forms of transportation.

**MORBIDITY:** Morbidity has been defined as any departure, subjective or objective, from a state of physiological or psychological well-being. In practice, morbidity encompasses disease, injury, and disability. In addition, it can also be used to describe the periods of illness, or the duration of these illnesses

**NATIONAL OLD AGE PENSION SCHEME (NOAPS):** The Indira Gandhi National Old Age Pension Scheme (IGNOAPS) is a non-contributory old age pension scheme that covers Indians who are 60 years and above and live below the poverty line. All IGNOAPS beneficiaries aged 60–79 receive a monthly pension of Rs. 300 (Rs. 200 by central government and Rs.100 by state government). Those 80 years and above receive a monthly pension amount of Rs. 500. States are strongly urged to provide an additional amount at least an equivalent amount to the assistance provided by the Central Government so that the beneficiaries can get a decent level of assistance.

**NEUROLOGICAL PROBLEMS:** Neurological problems include the diseases of the brain, spine and the nerves that connect them.

**NON-COMMUNICABLE DISEASES:** Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviors factors. Diseases that spread because of changing lifestyles, principally cardiovascular diseases, cancer, chronic respiratory disorder, and diabetes.

**NORMAL BLOOD PRESSURE:** Normal adult blood pressure is defined as a blood pressure of 120 mm Hg when the heart beats (systolic) and a blood pressure of 80 mm Hg when the heart relaxes (diastolic). Blood pressure is measured in millimeters of mercury (mm Hg)

**OCCUPATION:** Occupation refers to a specific task or set of tasks with which a person is engaged. LASI follows the abridged version of the International Classification of Occupation, 2015 ([www.ncs.gov.in](http://www.ncs.gov.in)).

**OFFICIAL RETIREMENT:** Official retirement refers to retirement from an organised sector of employment, including the government, state-owned enterprises, and private sector enterprises. An organised sector provides employment terms that are fixed or regular and up to a specific age. Moreover, official retirement is usually applicable for permanent employees.

**ORAL HEALTH:** It is defined as a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing.

**OSTEOPOROSIS** is a progressive bone disease that is characterized by a decrease in bone mass and density with an increased risk of fracture.

**OUT-PATIENT VISIT:** Visits to a health care facility for consultation, treatment or diagnosis without getting hospitalized are termed as outpatient visits.



**PAP SMEAR TEST:** A Pap smear, also called a Pap test, is a screening procedure for cervical cancer. It tests for the presence of precancerous or cancerous cells on your cervix. The cervix is the opening of the uterus.

**PARKINSON'S DISEASE:** A progressive disease of the nervous system marked by tremor, muscular rigidity, and slow, imprecise movement, chiefly affecting middle-aged and elderly people.

**PARTIAL EDENTULISM:** Oral Condition in which there is partial loss of natural teeth of oral cavity in

**PERIODONTITIS** is defined as an inflammatory disease of supporting tissues of teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with periodontal pocket formation, gingival recession or both.

**PRESBYCUSIS (AGE-RELATED HEARING LOSS):** In the initial stages, a person with hearing loss may have difficulty in understanding words. He/she is often able to hear the sounds but unable to make out the words. This may be more evident when the background noise is high (eg in a restaurant). Such a person may also start speaking in a louder voice than normal, without being aware of it. A ringing sensation in the ear (tinnitus) and inability to hear high pitched sounds can also indicate Presbycusis.

**PSYCHIATRIC PROBLEMS:** A wide range of mental conditions that affect mood, thinking, and behavior.

**RASHTRIYA SWASTHYA BIMA YOJANA (RSBY):** Ministry of Labour and Employment, Government of India, in 2007, launched a scheme for providing health insurance to unorganized sector workforce which comprises 94% of India's total working population.

**REFRACTIVE ERROR:** A refractive error is a very common eye disorder. It occurs when the eye cannot clearly focus the images from the outside world. The result of refractive errors is blurred vision, which is sometimes so severe that it causes visual impairment.

**RHEUMATOID ARTHRITIS (RA):** It is an autoimmune inflammatory disease that usually involves various joints in the fingers, thumbs, wrists, elbows, shoulders, knees, feet, and ankles. In RA, the synovial membrane that protects and lubricates joints becomes inflamed, causing pain and swelling. Joint erosion may follow pain, swelling, stiffness, malformation, and reduced movement and function. Joint erosion may follow

**SCHIZOPHRENIA:** Schizophrenia is a severe mental disorder, characterized by profound disruptions in thinking, affecting language, perception, and the sense of self. It often includes psychotic experiences, such as hearing voices or delusions.

**Self-care:** Self-care is about caring for oneself, washing and drying oneself, caring for one's body and body parts, dressing, eating and drinking, and looking after one's health.

**SELF-EMPLOYED:** Self-employed includes two categories of workers: own account worker and non-agricultural business owner. Own account worker refers to an individual who works for him/herself, without employees. Non-agricultural business owner includes entities with one or more employees, wherein the business entity is owned by the respondent.

**SELF-RATED HEALTH:** SRH is a subjective reflection of health status, called "perceived" or "subjective" health. Self-rated health (SRH) (also known as self-assessed health or self-perceived health) refers to a single-item health measure in which individuals rate the current status of their own health on a five-point scale from very good to very poor.

**SIDE JOB:** Side job is defined as any job other than the respondent's main job.

**SKIN DISEASE:** Conditions that irritate, clog, dry or inflame your skin can cause symptoms such as redness, swelling, burning, and itching. Allergies, irritants, your genetic makeup, and certain diseases and immune system problems can cause dermatitis, hives, skin cancer and other skin conditions.

Speech impairment refers to inability of an individual to speak properly. The impairment may influence speech in a general way, or only certain aspects of it, such as fluency or voice volume.

**STROKE:** Stroke are caused by disruption of the blood supply to the brain. This may result from either blockage (ischemic stroke) or rupture of a blood vessel (hemorrhagic stroke). It can cause permanent or temporary paralysis (inability to move, usually lower part of the body) and loss of speech.

**THYROID DISORDER** is a common problem that can cause symptoms because of over- or under function of the thyroid gland. The thyroid gland is an essential organ for producing thyroid hormones, which maintain our body metabolism.

**UNIPOLAR/BIPOLAR DISORDER:** A disorder associated with mood swings ranging from depressive lows to manic highs.

**UROGENITAL CONDITION:** Urogenital diseases are disorders that affect the urinary tract (kidneys, ureters, bladder, urethra) or reproductive organs (genitals).

**UTERINE FIBROID/ CYST:** Fibroids are abnormal growths that develop in or on a woman's uterus. Sometimes these tumors become quite large and cause severe abdominal pain and heavy periods. In other cases, they cause no signs or symptoms at all. The growths are typically benign, or noncancerous. The cause of fibroids is unknown.

**UTERINE PROLAPSE** occurs when the uterus sags or slips from its normal position and into the vagina (birth canal).

**VECTOR-BORNE DISEASES:** Vector-borne diseases are illness that are transmitted by vectors, like mosquitoes, ticks, and fleas, etc.

**VISUAL IMPAIRMENT:** also known as vision impairment or vision loss, is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses or surgery.

**WAGE/SALARIED WORKERS:** Wage/salaried workers are persons working on another's non-agricultural farm or non-farm enterprise (both household and non-household and in the public or private sector) who receive salary or wages.

**WATER-BORNE DISEASES:** Waterborne diseases are caused by drinking contaminated or dirty water. Contaminated water can cause many types of diarrheal diseases, including Cholera, and other serious illnesses such as Guinea worm disease, Typhoid, and Dysentery.

**WORK:** Work refers to participation in any economically productive activity with or without compensation, wages, or profit. Unpaid helpers who assist in the operation of an economic activity on the household farm or in non-farm activities are also considered as workers.

**WORK-RELATED PENSION:** Pension is a fixed sum paid regularly to a retired person in connection to his/her work once the person retires. There are different types of pensions, including defined benefit plans and defined contribution plans.



## APPENDIX - 1

State-wise number of districts, Talukas, villages, households, total population and 60+Population of India, State & UTs, Census 2011

**Table A1 State-wise number of districts, Talukas, villages, households, total population and 60+ Population, Census of India, 2011**

| Region            | State / UT                | Number of    |         |          |             | Total Population | 60+ Population |
|-------------------|---------------------------|--------------|---------|----------|-------------|------------------|----------------|
|                   |                           | Districts    | Talukas | Villages | Households  |                  |                |
| India             |                           | 640          | 5924    | 640867   | 249,501,663 | 1,210,854,977    | 103,849,040    |
| North             | Delhi                     | 9            | 27      | 112      | 3,435,999   | 16,787,941       | 1,147,445      |
|                   | Haryana                   | 21           | 74      | 6,841    | 4,857,524   | 25,351,462       | 2,193,755      |
|                   | Himachal Pradesh          | 12           | 117     | 20,690   | 1,483,280   | 6,864,602        | 703,009        |
|                   | Jammu & Kashmir           | 22           | 82      | 6,551    | 2,119,718   | 12,541,302       | 922,656        |
|                   | Punjab                    | 20           | 77      | 12,581   | 5,513,071   | 27,743,338       | 2,865,817      |
|                   | Rajasthan                 | 33           | 244     | 44,672   | 12,711,146  | 68,548,437       | 5,112,138      |
|                   | Uttarakhand               | 13           | 78      | 16,793   | 2,056,975   | 10,086,292       | 900,809        |
|                   | Central                   | Chhattisgarh | 18      | 149      | 20,126      | 5,650,724        | 25,545,198     |
| Madhya Pradesh    |                           | 50           | 342     | 54,903   | 15,093,256  | 72,626,809       | 5,713,316      |
| Uttar Pradesh     |                           | 71           | 312     | 106,704  | 33,448,035  | 199,812,341      | 15,439,904     |
| East              | Bihar                     | 38           | 534     | 44,874   | 18,913,565  | 104,099,452      | 7,707,145      |
|                   | Jharkhand                 | 24           | 260     | 32,394   | 6,254,781   | 32,988,134       | 2,356,678      |
|                   | Orissa                    | 30           | 476     | 51,313   | 9,637,820   | 41,974,218       | 3,984,448      |
|                   | West Bengal               | 19           | 341     | 40,203   | 20,380,315  | 91,276,115       | 7,742,382      |
| West              | Goa                       | 2            | 11      | 334      | 343,611     | 1,458,545        | 163,495        |
|                   | Gujarat                   | 26           | 225     | 18,225   | 12,248,428  | 60,439,692       | 4,786,559      |
|                   | Maharashtra               | 35           | 355     | 43,663   | 24,421,519  | 112,374,333      | 11,106,935     |
| South             | Andhra Pradesh            | 13           | 664     | 17,366   | 12,664,762  | 49,386,799       | 5,008,662      |
|                   | Telangana                 | 10           | 464     | 10434    | 8,357,826   | 35,193,978       | 3,269,579      |
|                   | Karnataka                 | 30           | 176     | 29,340   | 13,357,027  | 61,095,297       | 5,791,032      |
|                   | Kerala                    | 14           | 63      | 1,018    | 7,853,754   | 33,406,061       | 4,193,393      |
|                   | Tamil Nadu                | 32           | 215     | 15,979   | 18,524,982  | 72,147,030       | 7,509,758      |
| Northeast         | Arunachal Pradesh         | 16           | 188     | 5,589    | 270,577     | 1,383,727        | 63,639         |
|                   | Assam                     | 27           | 153     | 26,395   | 6,406,471   | 31,205,576       | 2,078,544      |
|                   | Manipur                   | 9            | 38      | 2,515    | 557,859     | 2,855,794        | 200,020        |
|                   | Meghalaya                 | 7            | 39      | 6,839    | 548,059     | 2,966,889        | 138,902        |
|                   | Mizoram                   | 8            | 26      | 830      | 222,853     | 1,097,206        | 68,628         |
|                   | Nagaland                  | 11           | 114     | 1,428    | 396,002     | 1,978,502        | 102,726        |
|                   | Sikkim                    | 4            | 9       | 452      | 129,006     | 610,577          | 40,752         |
|                   | Tripura                   | 4            | 40      | 875      | 855,556     | 3,673,917        | 289,544        |
| Union Territories | Andaman & Nicobar Islands | 2            | 9       | 555      | 94,551      | 380,581          | 25,424         |
|                   | Chandigarh                | 1            | 1       | 5        | 241,173     | 1,055,450        | 67,078         |
|                   | Dadra & Nagar Haveli      | 1            | 1       | 65       | 76,458      | 343,709          | 13,892         |
|                   | Daman & Diu               | 2            | 2       | 19       | 60,956      | 243,247          | 11,361         |
|                   | Lakshadweep               | 1            | 10      | 21       | 11,574      | 64,473           | 5,270          |
|                   | Puducherry                | 4            | 8       | 90       | 302,450     | 1,247,953        | 120,436        |

Source: Census of India, 2011

**Table A2 Sub-state regional classification of districts.**

| State                 | Region | LASI-Wave 1 (2011 Census Districts)                                                                                                                                                                                                                                                                                |
|-----------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.Jammu & Kashmir     | I      | Leh(Ladakh), Kargil                                                                                                                                                                                                                                                                                                |
|                       | II     | Badgam, Baramula, Bandipore, Srinagar, Ganderbal, Pulwama, Shupiyan, Anantnag, Kulgam                                                                                                                                                                                                                              |
|                       | III    | Kupwara, Punch, Rajouri                                                                                                                                                                                                                                                                                            |
|                       | IV     | Kathua, Doda, Ramban, Kishtwar, Udhampur, Reasi, Jammu, Samba                                                                                                                                                                                                                                                      |
| 2.Himachal Pradesh    | I      | Chamba, Lahul-Spiti, Kinnaur                                                                                                                                                                                                                                                                                       |
|                       | II     | Kangara, Kullu, Mandi, Hamirpur, Una                                                                                                                                                                                                                                                                               |
|                       | III    | Bilaspur, Solan, Sirmaur, Shimla                                                                                                                                                                                                                                                                                   |
| 3. Punjab             | I      | Gurdaspur, Firozpur, Amritsar, Tarn Taran                                                                                                                                                                                                                                                                          |
|                       | II     | Kapurthala, Jalandhar, Hoshiarpur, Shahid Bhagat Singh Nagar, Rupnagar                                                                                                                                                                                                                                             |
|                       | III    | Fatehgarh Sahib, Ludhiana, Patiala, Sahibzada Ajit Singh Nagar, Sangrur, Barnala                                                                                                                                                                                                                                   |
|                       | IV     | Moga, Muktsar, Faridkot, Bathinda, Mansa                                                                                                                                                                                                                                                                           |
| 4.Chandigarh          | I      | Chandigarh                                                                                                                                                                                                                                                                                                         |
| 5. Uttarakhand        | I      | Dehradun, Udham Singh Nagar, Hardwar                                                                                                                                                                                                                                                                               |
|                       | II     | Uttarkashi, Rudraprayag, Tehri Garhwal, Garhwal                                                                                                                                                                                                                                                                    |
|                       | III    | Chamoli, Pithoragarh, Bageshwar, Almora, Champawat, Nainital                                                                                                                                                                                                                                                       |
| 6.Haryana             | I      | Sonapat, Gurgaon, Mewat, Faridabad, Palwal                                                                                                                                                                                                                                                                         |
|                       | II     | Panchkula, Ambala, Yamunanagar, Kurukshetra, Kaithal, Karnal, Panipat                                                                                                                                                                                                                                              |
|                       | III    | Sirsa, Bhiwani, Mahendragarh, Rewari                                                                                                                                                                                                                                                                               |
|                       | IV     | Jind, Fatehbad, Hisar, Rohtak, Jhajjar                                                                                                                                                                                                                                                                             |
| 8.Rajasthan           | I      | Ganganagar, Hanumangarh, Bikaner, Churu, Nagaur, Jodhpur, Jaisalmer, Barmer, Jalor, Sirohi, Pali                                                                                                                                                                                                                   |
|                       | II     | Jhunjhunum, Alwar, Bharatpur, Dhaulpur, Karauli, Sawai Madhopur, Dausa, Jaipur, Sikar, Ajmer, Tonk, Bhilwara                                                                                                                                                                                                       |
|                       | III    | Rajsamand, Dungarpur, Banswara, Udaipur, Pratapgarh                                                                                                                                                                                                                                                                |
|                       | IV     | Bundi, Chittaurgarh, Kota, Baran, Jhalawar                                                                                                                                                                                                                                                                         |
| 9. Uttar Pradesh      | I      | Shaharanpur, Muzaffarnagar, Bijnor, Moradabad, Rampur, Jyotiba Phule Nagar, Meerut, Baghpat, Ghaziabad, Gautam Buddha Nagar, Bulandshahr, Aligarh, Mahamaya Nagar, Mathura, Agra, Firazabad, Mainpuri, Budaun, Bareilly, Philibhit, Shahjahanpur, Farrukhabad, Kannauj, Etawah, Auraiya, Etah, Kanshiram Nagar     |
|                       | II     | Kheri, Sitapur, Hardoi, Unnao, Lucknow, Rae Bareili, Kanpur Dehat, Kanpur Nagar, Fatehpur, Bara Banki                                                                                                                                                                                                              |
|                       | III    | Pratapgarh, Kaushambi, Allahabad, Faizabad, Ambedkar Nagar, Sultanpur, Bahraich, Shrawasti, Balrampur, Gonda, Siddharthnagar, Basti, Sant Kabir Nagar, Mahrajganj, Gorakhpur, Kushinagar, Deoria, Azamgarh, Mau, Ballia, Jaunpur, Gazipur, Chandauli, Varanasi, Sant Ravidas Nagar (Bhadohi), Mirzapur, Sonbhandra |
|                       | IV     | Jalaun, Jhansi, Lalitpur, Hamirpur, Mahoba, Banda, Chitrakoot                                                                                                                                                                                                                                                      |
| 10.Bihar              | I      | Paschim Champaran, Purba Champaran, Gopalganj, Siwan, Saran                                                                                                                                                                                                                                                        |
|                       | II     | Sheohar, Sitamarhi, Madhubani, Supaul, Saharsa, Darbhanga, Muzaffarpur, Vaishali, Samastipur                                                                                                                                                                                                                       |
|                       | III    | Araria, Kishanganj, Purnia, Katihar, Madhepura                                                                                                                                                                                                                                                                     |
|                       | IV     | Patna, Bhojpur, Buxar, Kaimur (Bhabua), Rohtas                                                                                                                                                                                                                                                                     |
|                       | V      | Khagaria, Bhagalpur, Banka, Munger, Lakhisarai, Sheikhpura, Jamui                                                                                                                                                                                                                                                  |
|                       | VI     | Begusarai, Nalanda, Aurangabad, Gaya, Nawada, Jehanabad, Arwal                                                                                                                                                                                                                                                     |
| 11.Sikkim             | I      | North District                                                                                                                                                                                                                                                                                                     |
|                       | II     | West District                                                                                                                                                                                                                                                                                                      |
|                       | III    | South District                                                                                                                                                                                                                                                                                                     |
|                       | IV     | East District                                                                                                                                                                                                                                                                                                      |
| 12. Arunachal Pradesh | I      | Tawang, West Kameng, East Kameng                                                                                                                                                                                                                                                                                   |
|                       | II     | Papumpare, Upper Subansiri, Lower Subansiri, Kurung Kumey                                                                                                                                                                                                                                                          |
|                       | III    | West Siang, East Siang, Upper Siang                                                                                                                                                                                                                                                                                |
|                       | IV     | Dibang valley, Lower dibang valley, Lohit, Anjaw                                                                                                                                                                                                                                                                   |
|                       | V      | Tirap, Changlang                                                                                                                                                                                                                                                                                                   |

| State              | Region | LASI-Wave 1 (2011 Census Districts)                                                                                           |
|--------------------|--------|-------------------------------------------------------------------------------------------------------------------------------|
| 13. Nagaland       | I      | Mon,Tuensang, Longleng, Kiphire                                                                                               |
|                    | II     | Mokakchung, Zunhebota                                                                                                         |
|                    | III    | Wokha , Dimapur                                                                                                               |
|                    | IV     | Kohima, Peren , Phek                                                                                                          |
| 14. Manipur        | I      | Senapati, Tamenglang, Ukhrul                                                                                                  |
|                    | II     | Churchandpur, Chandel                                                                                                         |
|                    | III    | Bishnupur, Imphal West, Imphal East, Thoubal                                                                                  |
| 15. Mizoram        | I      | Kolasib, Mamit, Aizwal, Champhal, Serchip                                                                                     |
|                    | II     | Lunglei                                                                                                                       |
|                    | III    | Lawangttai, Saita                                                                                                             |
| 16. Tripura        | I      | West Tripura                                                                                                                  |
|                    | II     | South Tripura                                                                                                                 |
|                    | III    | Dhalai                                                                                                                        |
|                    | IV     | North Tripura                                                                                                                 |
| 17. Meghalaya      | I      | West Garo Hills                                                                                                               |
|                    | II     | East Garo Hills, South Garo Hills                                                                                             |
|                    | III    | West Khasi Hills                                                                                                              |
|                    | IV     | Ribhoi, East Khasi Hills                                                                                                      |
|                    | V      | Jantia Hills                                                                                                                  |
| 18. Assam          | I      | Goalpara, Kamrup, Kamrup Metropolitan, Marigaon, Nagaon, Darrang, Udalguri                                                    |
|                    | II     | Kokrajhar, Dhubri, Bongaigaon, Barpeta, Nalbari, Sonitpur, Chirang, Baksa                                                     |
|                    | III    | Golaghat, Jorhat, Sibsagar, Dibrugarh, Tinsukia, Karimganj, Hailakandi, Cachar                                                |
|                    | IV     | Lakhimpur, Dhemaji                                                                                                            |
|                    | V      | Karbi Anglong, Dima Hasao                                                                                                     |
| 19. West Bengal    | I      | Jalpaiguri, Darjeeling                                                                                                        |
|                    | II     | Koch Bihar, West Dinajpur (Uttar Dinajpur and Dakshin Dinajpur), Maldah, Murshidabad                                          |
|                    | III    | Nadia, Haora, Hugli, North Twenty-Four Parganas, South Twenty-Four Parganas, Barddhaman                                       |
|                    | IV     | Purba Medinipur, Paschim Medinipur, Bankura, Birbhum                                                                          |
|                    | V      | Puruliya                                                                                                                      |
| 20. Jharkhand      | I      | Deogarh, Godda, sahibganj, Pakur, Dumka, Jamtara                                                                              |
|                    | II     | Chatra, Hazaribagh,Ramgarh Kodarma, Giridh, Bokaro, Dhanbad                                                                   |
|                    | III    | Garhwa, Palamu, Latehar, Lohardagga, Gumla, Simdega, Ranchi, Khunti, Pashchim Singhbhum, Saraikela-Kharswan, Purbi Singhbhum  |
| 21. Odisha         | I      | Sundargarh, Kendujhar, Mayurbhanj                                                                                             |
|                    | II     | Kandhamal, Koraput, Baudh, Malkangiri, Nabarangapur, Rayagada                                                                 |
|                    | III    | Sambalpur, Balangir, Kalahandi, Bargarh, Debagarh, Jharsuguda, Nuapada, Subarnapur                                            |
|                    | IV     | Baleswar, Cuttack, Ganjam, Puri, Dhenkanal, Anugul, Bhadrak, Gajapati, Jagatsinghapur, Jajapur, Kendrapara, Khordha, Nayagarh |
| 22.Chhatisgarh     | I      | Koriya, Surguja, Bilaspur, Korba, Janjgir-champa, Jashpur, Raigarh                                                            |
|                    | II     | Kabeerdham, rajnandgao, Durg, Raipur, Mahasamund, Dhamtari                                                                    |
|                    | III    | Kanker, Bastar, Narayanpur, Dakshin Bastar Dantewada, Bijapur                                                                 |
| 23. Madhya Pradesh | I      | Panna, Rewa, Satna, Sidhi, Singrauli, Shahdol, Anuppur, Chhatarpur, Tikamgarh, Umaria                                         |
|                    | II     | Raisen, Sagar, Damoh, Vidisha, Bhopal, Sehore                                                                                 |
|                    | III    | Dewas, Dhar, Indore, Jhabua, Alirajpur Ujjain, Rajgarh, Ratlam, Mandsaur, Shajapur, Neemuch                                   |
|                    | IV     | Mandla, Jabalpur, Seoni, Narsimhapur, Chhindwara, Balaghat, Dindori, Katni                                                    |
|                    | V      | Betul, Hoshangabad, East Nimar, Burhanpur, West Nimar, Barwani, Harda                                                         |
|                    | VI     | Gwalior, Bhind, Morena, Datia, Guna, Ashoknagar, Shivpuri, Sheopur                                                            |
| 24.Gujarat         | I      | Jamnagar, Rajkot                                                                                                              |
|                    | II     | Surendranagar, Bhavnagar, Amreli                                                                                              |
|                    | III    | Junagadh, Porbandar                                                                                                           |
|                    | IV     | Kachchh, Banaskantha                                                                                                          |

| State                           | Region | LASI-Wave 1 (2011 Census Districts)                                                                                                                                                |
|---------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | V      | Sabarkantha, Mahesana, Patan                                                                                                                                                       |
|                                 | VI     | Gandhinagar, Ahmedabad                                                                                                                                                             |
|                                 | VII    | Kheda, Anand                                                                                                                                                                       |
|                                 | VIII   | Panch Mahals, Vadodara, Dohad                                                                                                                                                      |
|                                 | IX     | Bharuch, Surat, Tapi, Valsad, The Dangs, Narmada, Navsari                                                                                                                          |
| 25. Daman Diu                   | I      | Diu                                                                                                                                                                                |
|                                 | II     | Daman                                                                                                                                                                              |
| 26. Dadra & Nagar Haveli        | I      | Dadra & Nagar Haveli                                                                                                                                                               |
| 27. Maharashtra                 | I      | Thane, Raigad, Ratnagiri, Sindhudurg                                                                                                                                               |
|                                 | II     | Nasik, Dhule, Jalgaon, Nandurbar                                                                                                                                                   |
|                                 | III    | Ahmednagar, Pune, Satara, Sangli, Solapur, Kolhapur                                                                                                                                |
|                                 | IV     | Aurangabad, Jalna, Parbhani, Bid, Latur, Osmanabad, Buldhana, Akola, Amaravati, Washim, Hingoli                                                                                    |
|                                 | V      | Yavatmal, Wardha, Nagpur, Nanded                                                                                                                                                   |
|                                 | VI     | Bhandara, Chandrapur, Gadchiroli, Gondiya                                                                                                                                          |
| 28. Karnataka                   | I      | Bidar, Bijapur, Gulbarga, Yadgir, Raichur, Bagalkot, Koppal                                                                                                                        |
|                                 | II     | Belgaum, Dharwad, Gadag, Haveri                                                                                                                                                    |
|                                 | III    | Dakshina Kannada, Kodagu, Uttara Kannada, Udupi                                                                                                                                    |
|                                 | IV     | Chikmagalur, Shimoga                                                                                                                                                               |
|                                 | V      | Bangalore, Bangalore rural, Ramanagara, Bellary, Chitradurga, Kolar, Chikballapura, Tumkur, Davangere                                                                              |
|                                 | VI     | Hassan, Mandya, Mysore, Chamrajnagar                                                                                                                                               |
| 36. Telangana                   | I      | Mahbubnagar, Rangareddy, Hyderabad, Medak, Nizamabad, Adilabad, Nalgonda                                                                                                           |
|                                 | II     | Karimnagar, Warangal, Khammam                                                                                                                                                      |
| 29. Andhra Pradesh              | I      | Srikakulam, Vizianagaram, Visakhapatnam                                                                                                                                            |
|                                 | II     | East Godavari, West Godavari, Krishna, Guntur                                                                                                                                      |
|                                 | III    | Prakasam, Nellore                                                                                                                                                                  |
|                                 | IV     | Chittoor, Y.S.R, Anantapur, Kurnool                                                                                                                                                |
| 30. Goa                         | I      | North Goa                                                                                                                                                                          |
|                                 | II     | South goa                                                                                                                                                                          |
| 31. Lakshadweep                 | I      | Lakshadweep                                                                                                                                                                        |
| 32. Kerala                      | I      | Kasargod, Kannur, Wayanad, Kozhikode, Malappuram                                                                                                                                   |
|                                 | II     | Palakkad, Thrissur, Ernakulam                                                                                                                                                      |
|                                 | III    | Idukki, Kottayam, Alappuzha, Pathanamthitta, Kollam, Thiruvananthapuram                                                                                                            |
| 33. Tamil Nadu                  | I      | Coimbatore, Tiruppur, Dindigul Anna (Dindigul), Madurai (Madura and Theni), Periyar (Erode), Nilgiri                                                                               |
|                                 | II     | North Arcot-Ambedkar (Vellore), Dharmapuri, Krishnagiri, Tiruvannamalai-Sambuvarayan, Salem (Salem and Namakal), Tiruchirappalli (Tiruchirappalli, Karur and Perambalur), Ariyalur |
|                                 | III    | Kanniyakumari                                                                                                                                                                      |
|                                 | IV     | Chengalpattu-MGR (Kanchipuram and Tiruvallur), South Arcot (Cuddalore and Villupuram), Thanjavur, (Thanjavur, Nagappattinam and Tiruvarur)                                         |
|                                 | V      | Pudukkottai, Muthuramalinga Thevar (Sivaganga), Kamarajar (Virudhunagar), Ramanathapuram, Chidambaranar (Thoothukkudi), Tirunelveli Kattabomman (Tirunelveli)                      |
| 34. Puducherry                  | I      | Yanam                                                                                                                                                                              |
|                                 | II     | Puducherry                                                                                                                                                                         |
|                                 | III    | Mahe                                                                                                                                                                               |
|                                 | IV     | Karaikal                                                                                                                                                                           |
| 35. Andaman and Nicobar Islands | I      | Nicobars                                                                                                                                                                           |
|                                 | II     | North & Middle Andaman                                                                                                                                                             |
|                                 | III    | South Andaman                                                                                                                                                                      |

Standard Error and Confidence Interval

| Standard error and confidence interval - Household Sections          |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
|----------------------------------------------------------------------|--------|----------------|------------|------------|--------|--------|----------------|------------|------------|--------|----------|----------------|------------|------------|
| Indicators                                                           | Rural  |                |            |            | Urban  |        |                |            | Total      |        |          |                |            |            |
|                                                                      | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean     | Std. Err. (SE) | Mean - 2SE | Mean + 2SE |
| 3: Household Population characteristics, and Housing and Environment |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Housing and Environment                                              |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Proportion                                                           |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Households with electricity                                          | 0.8864 | 0.0019         | 0.8826     | 0.8901     | 27,465 | 0.9824 | 0.0011         | 0.9803     | 0.9845     | 15,273 | 0.9166   | 0.0013         | 0.9140     | 0.9192     |
| Households with improved source of drinking water                    | 0.9480 | 0.0013         | 0.9454     | 0.9507     | 27,465 | 0.9217 | 0.0022         | 0.9175     | 0.9260     | 15,273 | 0.9397   | 0.0012         | 0.9375     | 0.9420     |
| Households with water facility inside dwelling/ own yard             | 0.5855 | 0.0030         | 0.5796     | 0.5913     | 27,465 | 0.8072 | 0.0032         | 0.8010     | 0.8135     | 15,273 | 0.6553   | 0.0023         | 0.6508     | 0.6598     |
| Households with improved sanitation facility                         | 0.6215 | 0.0029         | 0.6157     | 0.6272     | 27,462 | 0.9444 | 0.0019         | 0.9408     | 0.9481     | 15,271 | 0.7232   | 0.0022         | 0.7190     | 0.7275     |
| Households using clean cooking fuel                                  | 0.3557 | 0.0029         | 0.3500     | 0.3614     | 27,464 | 0.8895 | 0.0025         | 0.8845     | 0.8944     | 15,272 | 0.5239   | 0.0024         | 0.5191     | 0.5286     |
| Household exposed to Indoor pollution                                | 0.1892 | 0.0024         | 0.1846     | 0.1938     | 27,465 | 0.0334 | 0.0015         | 0.0305     | 0.0362     | 15,273 | 0.1401   | 0.0017         | 0.1368     | 0.1434     |
| Living in pucca house                                                | 0.5498 | 0.0035         | 0.5429     | 0.5566     | 20,267 | 0.8359 | 0.0031         | 0.8298     | 0.8419     | 14,415 | 0.6540   | 0.0026         | 0.6490     | 0.6590     |
| 4: Economic well-being of older adults in India                      |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Mean                                                                 |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Monthly per capita consumption expenditure (MPCE)                    | 2543   | 22             | 2501       | 2586       | 27,576 | 3944   | 28             | 3889       | 4000       | 15,373 | 2967     | 18             | 2932       | 3001       |
| Monthly per capita health expenditure (Inpatient)                    | 81     | 3              | 74         | 88         | 27,576 | 137    | 5              | 126        | 147        | 15,373 | 98       | 3              | 92         | 103        |
| Monthly per capita health expenditure (outpatient)                   | 280    | 4              | 272        | 288        | 27,576 | 308    | 7              | 295        | 321        | 15,373 | 288      | 4              | 281        | 295        |
| Monthly per capita out-of-pocket expenditure                         | 361    | 6              | 350        | 372        | 27,576 | 444    | 9              | 426        | 463        | 15,373 | 386      | 5              | 376        | 396        |
| Household Health Insurance                                           |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Proportion                                                           |        |                |            |            |        |        |                |            |            |        |          |                |            |            |
| Central Government Health Scheme                                     | 0.0222 | 0.0008         | 0.0204     | 0.0239     | 27,208 | 0.0288 | 0.0013         | 0.0261     | 0.0315     | 14,987 | 0.0243   | 0.00075        | 0.0228     | 0.0257     |
| Employees State Insurance Scheme                                     | 0.0074 | 0.0005         | 0.0064     | 0.0084     | 27,207 | 0.0524 | 0.0018         | 0.0489     | 0.0560     | 14,987 | 0.021433 | 0.0007         | 0.0200     | 0.0228     |
| Rashtriya Swasthya Bima Yojana & Allied Schemes                      | 0.2351 | 0.0025         | 0.2301     | 0.2401     | 27,203 | 0.1442 | 0.0028         | 0.1386     | 0.1499     | 14,985 | 0.206916 | 0.0019         | 0.2030     | 0.2107     |
| Community Cooperative Health Insurance Scheme                        | 0.0021 | 0.0002         | 0.0015     | 0.0026     | 27,212 | 0.0010 | 0.0002         | 0.0005     | 0.0016     | 14,989 | 0.001788 | 0.0002         | 0.0013     | 0.0021     |
| Medical reimbursement / health insurance through an employer         | 0.0048 | 0.0004         | 0.0040     | 0.0056     | 27,209 | 0.0289 | 0.0013         | 0.0262     | 0.0316     | 14,990 | 0.012338 | 0.0005         | 0.0112     | 0.0133     |
| Privately Purchased Commercial Health Insurance                      | 0.0047 | 0.0004         | 0.0038     | 0.0055     | 27,212 | 0.0332 | 0.0014         | 0.0303     | 0.03611    | 14,989 | 0.013577 | 0.0005         | 0.0124     | 0.0146     |



| Standard error and confidence interval - Individual Sections           |            |                |            |            |          |        |                |            |            |        |        |                |
|------------------------------------------------------------------------|------------|----------------|------------|------------|----------|--------|----------------|------------|------------|--------|--------|----------------|
| Indicators                                                             | Age 45-59* |                |            |            | Age ≥ 60 |        |                |            | Total      |        |        |                |
|                                                                        | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number   | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean   | Std. Err. (SE) |
| <b>5: Demographics</b>                                                 |            |                |            |            |          |        |                |            |            |        |        |                |
| <b>Proportion</b>                                                      |            |                |            |            |          |        |                |            |            |        |        |                |
| Rural                                                                  | 0.6621     | 0.0023         | 0.6575     | 0.6667     | 40,786   | 0.7055 | 0.0026         | 0.7004     | 0.7105     | 31,464 | 0.6820 | 0.0017         |
| Widowed women                                                          | 0.0935     | 0.0014         | 0.0906     | 0.0963     | 40,786   | 0.3620 | 0.0027         | 0.3567     | 0.3673     | 31,464 | 0.2166 | 0.0015         |
| Hindu                                                                  | 0.8166     | 0.0019         | 0.8129     | 0.8204     | 40,786   | 0.8222 | 0.0022         | 0.8180     | 0.8265     | 31,464 | 0.8192 | 0.0014         |
| Muslim                                                                 | 0.1199     | 0.0016         | 0.1168     | 0.1231     | 40,786   | 0.1128 | 0.0018         | 0.1093     | 0.1163     | 31,464 | 0.1167 | 0.0012         |
| Scheduled tribe                                                        | 0.0888     | 0.0014         | 0.0861     | 0.0916     | 40,786   | 0.0812 | 0.0015         | 0.0782     | 0.0842     | 31,464 | 0.0853 | 0.0010         |
| Scheduled caste                                                        | 0.1935     | 0.0020         | 0.1896     | 0.1973     | 40,786   | 0.1891 | 0.0022         | 0.1847     | 0.1934     | 31,464 | 0.1915 | 0.0015         |
| Other backward class                                                   | 0.4572     | 0.0025         | 0.4524     | 0.4620     | 40,786   | 0.4523 | 0.0028         | 0.4468     | 0.4578     | 31,464 | 0.4550 | 0.0019         |
| None of them                                                           | 0.2605     | 0.0022         | 0.2562     | 0.2647     | 40,786   | 0.2774 | 0.0025         | 0.2725     | 0.2824     | 31,464 | 0.2882 | 0.0016         |
| No schooling                                                           | 0.4356     | 0.0025         | 0.4307     | 0.4404     | 40,786   | 0.5652 | 0.0028         | 0.5597     | 0.5707     | 31,464 | 0.4950 | 0.0019         |
| Staying since birth in the current place of residence                  | 0.3793     | 0.0024         | 0.3746     | 0.3840     | 40,786   | 0.4347 | 0.0028         | 0.4292     | 0.4402     | 31,464 | 0.4047 | 0.0018         |
| <b>6: Work, Retirement, and Pension</b>                                |            |                |            |            |          |        |                |            |            |        |        |                |
| <b>Proportion</b>                                                      |            |                |            |            |          |        |                |            |            |        |        |                |
| Ever worked                                                            | 0.7144     | 0.0022         | 0.7101     | 0.7188     | 40,786   | 0.7357 | 0.0024         | 0.7308     | 0.7406     | 31,464 | 0.7242 | 0.0016         |
| Currently working                                                      | 0.6185     | 0.0024         | 0.6138     | 0.6232     | 40,786   | 0.6371 | 0.0027         | 0.6318     | 0.6424     | 31,464 | 0.6496 | 0.0018         |
| Agricultural and allied activities                                     | 0.5191     | 0.0032         | 0.5128     | 0.5254     | 24,318   | 0.6480 | 0.0046         | 0.6390     | 0.6571     | 10,638 | 0.5613 | 0.0026         |
| Self employed                                                          | 0.1761     | 0.0024         | 0.1713     | 0.1809     | 24,318   | 0.1662 | 0.0036         | 0.1592     | 0.1733     | 10,638 | 0.1729 | 0.0020         |
| Wages/salary                                                           | 0.3046     | 0.0029         | 0.2989     | 0.3104     | 24,318   | 0.1856 | 0.0037         | 0.1782     | 0.1930     | 10,638 | 0.2657 | 0.0023         |
| Officially retired                                                     |            |                |            |            |          | 0.0725 | 0.0015         | 0.0697     | 0.0754     | 31,464 |        |                |
| Work related pension                                                   | 0.0202     | 0.0007         | 0.0188     | 0.0216     | 40,786   | 0.063  | 0.0014         | 0.0603     | 0.0657     | 31,464 | 0.0398 | 0.0007         |
| Receiving pension                                                      |            |                |            |            |          | 0.0567 | 0.0013         | 0.0541     | 0.0592     | 31,464 |        |                |
| Individual earnings from agricultural and allied activities in (₹)     | 5275       | 55             | 5167       | 5383       | 11,571   | 4856   | 78             | 4704       | 5009       | 6,235  | 5117   | 45             |
| Individual earnings from self-employed in (₹)                          | 9568       | 142            | 9289       | 9847       | 4,356    | 8142   | 234            | 7684       | 8600       | 1,913  | 9119   | 122            |
| Individual earnings from wage/salaried workers in (₹)                  | 12178      | 154            | 11877      | 12480      | 7,769    | 7012   | 196            | 6627       | 7397       | 2,121  | 10996  | 129            |
| <b>7. Chronic Health Conditions</b>                                    |            |                |            |            |          |        |                |            |            |        |        |                |
| <b>Proportion</b>                                                      |            |                |            |            |          |        |                |            |            |        |        |                |
| Poor Self Rated Health                                                 | 0.1205     | 0.0016         | 0.1173     | 0.1237     | 40,513   | 0.2421 | 0.0024         | 0.2373     | 0.2469     | 30,798 | 0.1757 | 0.0014         |
| <b>Self-Reported Prevalence of Diagnosed Chronic Health Conditions</b> |            |                |            |            |          |        |                |            |            |        |        |                |
| <b>Prevalence</b>                                                      |            |                |            |            |          |        |                |            |            |        |        |                |
| Cardiovascular diseases                                                | 0.2187     | 0.0021         | 0.2147     | 0.2227     | 40,661   | 0.3464 | 0.0027         | 0.3412     | 0.3517     | 31,365 | 0.2772 | 0.0017         |
| Hypertension                                                           | 0.2049     | 0.0020         | 0.2010     | 0.2088     | 40,663   | 0.3204 | 0.0026         | 0.3152     | 0.3256     | 31,367 | 0.2578 | 0.0016         |
| Heart disease                                                          | 0.0222     | 0.0007         | 0.0207     | 0.0236     | 40,679   | 0.0516 | 0.0012         | 0.0491     | 0.0540     | 31,381 | 0.0356 | 0.0007         |
| Stroke                                                                 | 0.0101     | 0.0005         | 0.0092     | 0.0111     | 40,681   | 0.0268 | 0.0009         | 0.0250     | 0.0286     | 31,382 | 0.0178 | 0.0005         |
| Diabetes Mellitus                                                      | 0.0923     | 0.0014         | 0.0894     | 0.0951     | 40,670   | 0.1416 | 0.0020         | 0.1378     | 0.1455     | 31,376 | 0.1149 | 0.0012         |
| High Cholesterol                                                       | 0.0187     | 0.0007         | 0.0174     | 0.0200     | 40,678   | 0.0248 | 0.0009         | 0.0231     | 0.0265     | 31,383 | 0.0215 | 0.0005         |
| Anaemia                                                                | 0.0474     | 0.0011         | 0.0454     | 0.0495     | 40,656   | 0.0473 | 0.0012         | 0.0449     | 0.0496     | 31,360 | 0.0474 | 0.0008         |
| Asthma                                                                 | 0.0442     | 0.0011         | 0.0422     | 0.0462     | 40,682   | 0.0827 | 0.0016         | 0.0797     | 0.0858     | 31,383 | 0.0619 | 0.0009         |
| Bronchitis                                                             | 0.0314     | 0.0009         | 0.0297     | 0.0331     | 40,682   | 0.0589 | 0.0013         | 0.0563     | 0.0615     | 31,383 | 0.0440 | 0.0008         |
| COPD                                                                   | 0.0074     | 0.0004         | 0.0066     | 0.0082     | 40,682   | 0.0159 | 0.0007         | 0.0145     | 0.0173     | 31,383 | 0.0113 | 0.0004         |
| Any Neurological/psychiatric problems                                  | 0.0157     | 0.0006         | 0.0145     | 0.0169     | 40,682   | 0.0283 | 0.0009         | 0.0265     | 0.0301     | 31,383 | 0.0214 | 0.0005         |
| Depression                                                             | 0.0192     | 0.0007         | 0.0179     | 0.0205     | 40,675   | 0.0259 | 0.0009         | 0.0241     | 0.0276     | 31,381 | 0.0223 | 0.0005         |
| Other psychiatric problems                                             | 0.0047     | 0.0003         | 0.0040     | 0.0053     | 40,675   | 0.0080 | 0.0005         | 0.0070     | 0.0090     | 31,381 | 0.0062 | 0.0003         |
| Alzheimer's diseases and dementia                                      | 0.0038     | 0.0003         | 0.0032     | 0.0044     | 40,675   | 0.0036 | 0.0003         | 0.0029     | 0.0043     | 31,381 | 0.0037 | 0.0002         |
|                                                                        | 0.0041     | 0.0003         | 0.0035     | 0.0047     | 40,675   | 0.0095 | 0.0005         | 0.0084     | 0.0106     | 31,381 | 0.0066 | 0.0003         |

| Standard error and confidence interval - Individual Sections   |            |                |            |            |        |          |                |            |            |        |        |            |
|----------------------------------------------------------------|------------|----------------|------------|------------|--------|----------|----------------|------------|------------|--------|--------|------------|
| Indicators                                                     | Age 45-59* |                |            |            |        | Age ≥ 60 |                |            |            |        | Total  |            |
|                                                                | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean     | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean   | Mean + 2SE |
| Other neurological problems                                    | 0.0132     | 0.0006         | 0.0121     | 0.0143     | 40,675 | 0.0158   | 0.0007         | 0.0144     | 0.0171     | 31,381 | 0.0144 | 0.0152     |
| Any bone/joint diseases                                        | 0.1173     | 0.0016         | 0.1142     | 0.1205     | 40,682 | 0.1882   | 0.0022         | 0.1839     | 0.1925     | 31,384 | 0.1498 | 0.1524     |
| Arthritis                                                      | 0.0699     | 0.0013         | 0.0674     | 0.0724     | 40,682 | 0.1075   | 0.0017         | 0.1041     | 0.1109     | 31,384 | 0.0871 | 0.0892     |
| Rheumatism                                                     | 0.0468     | 0.0010         | 0.0448     | 0.0489     | 40,682 | 0.0756   | 0.0015         | 0.0726     | 0.0785     | 31,384 | 0.0600 | 0.0617     |
| Osteoporosis                                                   | 0.0062     | 0.0004         | 0.0054     | 0.0069     | 40,682 | 0.0131   | 0.0006         | 0.0118     | 0.0143     | 31,384 | 0.0093 | 0.0100     |
| Cancer or malignant tumour                                     | 0.0055     | 0.0004         | 0.0048     | 0.0062     | 40,679 | 0.0070   | 0.0005         | 0.0061     | 0.0079     | 31,382 | 0.0062 | 0.0068     |
| Thyroid disorder                                               | 0.0376     | 0.0009         | 0.0358     | 0.0395     | 40,666 | 0.0225   | 0.0008         | 0.0209     | 0.0241     | 31,371 | 0.0307 | 0.0319     |
| Gastrointestinal problem                                       | 0.1675     | 0.0019         | 0.1639     | 0.1711     | 40,666 | 0.1910   | 0.0022         | 0.1866     | 0.1953     | 31,371 | 0.1783 | 0.1811     |
| Skin diseases                                                  | 0.0512     | 0.0011         | 0.0491     | 0.0533     | 40,666 | 0.0524   | 0.0013         | 0.0499     | 0.0548     | 31,371 | 0.0517 | 0.0534     |
| Self-reported prevalence of diagnosed organ related conditions |            |                |            |            |        |          |                |            |            |        |        |            |
| Prevalence                                                     |            |                |            |            |        |          |                |            |            |        |        |            |
| Any urogenital condition                                       | 0.0548     | 0.0011         | 0.0526     | 0.0570     | 40,666 | 0.0770   | 0.0015         | 0.0740     | 0.0799     | 31,375 | 0.0650 | 0.0668     |
| Chronic renal failure                                          | 0.0044     | 0.0003         | 0.0038     | 0.0051     | 40,666 | 0.0084   | 0.0005         | 0.0074     | 0.0094     | 31,376 | 0.0062 | 0.0068     |
| Incontinence                                                   | 0.0223     | 0.0007         | 0.0209     | 0.0237     | 40,666 | 0.0409   | 0.0011         | 0.0387     | 0.0431     | 31,376 | 0.0308 | 0.0321     |
| Kidney stone                                                   | 0.0270     | 0.0008         | 0.0254     | 0.0286     | 40,666 | 0.0243   | 0.0009         | 0.0226     | 0.0260     | 31,376 | 0.0257 | 0.0269     |
| Any eye problem                                                | 0.3874     | 0.0024         | 0.3827     | 0.3921     | 40,672 | 0.5533   | 0.0028         | 0.5478     | 0.5588     | 31,378 | 0.4634 | 0.4597     |
| Cataract                                                       | 0.0459     | 0.0010         | 0.0439     | 0.0479     | 40,672 | 0.2324   | 0.0024         | 0.2277     | 0.2371     | 31,378 | 0.1313 | 0.1288     |
| Glaucoma                                                       | 0.0127     | 0.0006         | 0.0116     | 0.0138     | 40,672 | 0.0245   | 0.0009         | 0.0228     | 0.0262     | 31,378 | 0.0181 | 0.0191     |
| Refractive errors                                              | 0.3394     | 0.0023         | 0.3348     | 0.3440     | 40,672 | 0.3539   | 0.0027         | 0.3486     | 0.3592     | 31,378 | 0.3460 | 0.3495     |
| Any hearing/ ear related problem                               | 0.0413     | 0.0010         | 0.0394     | 0.0432     | 40,665 | 0.0961   | 0.0017         | 0.0928     | 0.0993     | 31,376 | 0.0664 | 0.0682     |
| Common oral health problems                                    | 0.4418     | 0.0025         | 0.4370     | 0.4467     | 40,665 | 0.5128   | 0.0028         | 0.5073     | 0.5184     | 31,374 | 0.4744 | 0.4707     |
| Dental caries                                                  | 0.1815     | 0.0019         | 0.1777     | 0.1852     | 40,665 | 0.1955   | 0.0022         | 0.1911     | 0.1999     | 31,374 | 0.1879 | 0.1908     |
| Periodontal diseases                                           | 0.1545     | 0.0018         | 0.1510     | 0.1580     | 40,665 | 0.1596   | 0.0021         | 0.1555     | 0.1636     | 31,374 | 0.1568 | 0.1595     |
| Partial edentulism                                             | 0.4878     | 0.0025         | 0.4829     | 0.4926     | 40,661 | 0.7197   | 0.0025         | 0.7148     | 0.7247     | 31,370 | 0.5940 | 0.5976     |
| Complete edentulism                                            | 0.0305     | 0.0009         | 0.0288     | 0.0322     | 40,661 | 0.1120   | 0.0018         | 0.1085     | 0.1154     | 31,370 | 0.0678 | 0.0696     |
| No morbidity                                                   | 0.6308     | 0.0024         | 0.6261     | 0.6355     | 40,682 | 0.4787   | 0.0028         | 0.4732     | 0.4843     | 31,386 | 0.5612 | 0.5648     |
| Single health condition                                        | 0.2426     | 0.0021         | 0.2384     | 0.2468     | 40,682 | 0.2879   | 0.0026         | 0.2829     | 0.2929     | 31,386 | 0.2634 | 0.2666     |
| Two or more health conditions                                  | 0.1266     | 0.0016         | 0.1234     | 0.1298     | 40,682 | 0.2333   | 0.0024         | 0.2286     | 0.2380     | 31,386 | 0.1755 | 0.1782     |
| 8. Symptoms, Injuries, Endemic Diseases and Women's Health     |            |                |            |            |        |          |                |            |            |        |        |            |
| Prevalence                                                     |            |                |            |            |        |          |                |            |            |        |        |            |
| Angina pectoris                                                | 0.0541     | 0.0011         | 0.0519     | 0.0563     | 40,649 | 0.0625   | 0.0014         | 0.0598     | 0.0651     | 31,356 | .05792 | .05962     |
| Pain                                                           | 0.2332     | 0.0021         | 0.2291     | 0.2373     | 40,642 | 0.2932   | 0.0026         | 0.2881     | 0.2982     | 31,355 | 0.2606 | 0.2638     |
| Sleep problem                                                  | 0.1089     | 0.0015         | 0.1059     | 0.1120     | 40,648 | 0.1477   | 0.0020         | 0.1437     | 0.1516     | 31,358 | 0.1267 | 0.1291     |
| Self-Reported Prevalence (%) Of Injury and Falls               |            |                |            |            |        |          |                |            |            |        |        |            |
| Injury                                                         | 0.1395     | 0.0017         | 0.1361     | 0.1428     | 40,662 | 0.1876   | 0.0022         | 0.1833     | 0.1919     | 31,368 | 0.1615 | 0.1642     |
| Fall                                                           | 0.1651     | 0.0018         | 0.1614     | 0.1687     | 40,662 | 0.2289   | 0.0024         | 0.2242     | 0.2335     | 31,368 | 0.1943 | 0.1972     |
| Any Injury or Fall                                             | 0.1838     | 0.0019         | 0.1801     | 0.1876     | 40,662 | 0.2448   | 0.0024         | 0.2400     | 0.2495     | 31,368 | 0.2117 | 0.2147     |
| Health Conditions Due to Natural and Man-Made Disasters        |            |                |            |            |        |          |                |            |            |        |        |            |
| Health problems                                                | 0.0353     | 0.0009         | 0.0335     | 0.0371     | 40,655 | 0.0357   | 0.0010         | 0.0336     | 0.0377     | 31,367 | 0.0355 | 0.0368     |
| Permanent physical disability                                  | 0.0027     | 0.0003         | 0.0022     | 0.0032     | 40,655 | 0.0038   | 0.0003         | 0.0031     | 0.0045     | 31,367 | 0.0032 | 0.0036     |
| Psychological problems                                         | 0.0230     | 0.0007         | 0.0215     | 0.0244     | 40,655 | 0.0227   | 0.0008         | 0.0210     | 0.0243     | 31,367 | 0.0228 | 0.0239     |
| Chronic illness                                                | 0.0065     | 0.0004         | 0.0058     | 0.0073     | 40,655 | 0.0064   | 0.0004         | 0.0055     | 0.0073     | 31,367 | 0.0065 | 0.0071     |
| Self-Reported Diagnosed Endemic Diseases                       |            |                |            |            |        |          |                |            |            |        |        |            |
| Water-borne disease                                            | 0.1800     | 0.0019         | 0.1763     | 0.1837     | 40,659 | 0.1958   | 0.0022         | 0.1914     | 0.2002     | 31,360 | 0.1872 | 0.1901     |
| Vector-borne disease                                           | 0.1041     | 0.0015         | 0.1012     | 0.1071     | 40,659 | 0.1085   | 0.0018         | 0.1050     | 0.1119     | 31,360 | 0.1061 | 0.1084     |
| Other infectious disease                                       | 0.0273     | 0.0008         | 0.0257     | 0.0289     | 40,659 | 0.0346   | 0.0010         | 0.0326     | 0.0366     | 31,360 | 0.0306 | 0.0319     |

| Standard error and confidence interval - Individual Sections                  |            |                |            |            |          |          |                |            |            |        |          |                |
|-------------------------------------------------------------------------------|------------|----------------|------------|------------|----------|----------|----------------|------------|------------|--------|----------|----------------|
| Indicators                                                                    | Age 45-59* |                |            |            | Age ≥ 60 |          |                |            | Total      |        |          |                |
|                                                                               | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number   | Mean     | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean     | Std. Err. (SE) |
| Any endemic disease                                                           | 0.2550     | 0.0022         | 0.2507     | 0.2592     | 40,659   | 0.2714   | 0.0025         | 0.2665     | 0.2763     | 31,360 | 0.2625   | 0.0016         |
| <b>Self-Reported Prevalence (%) of Diagnosed Water-Borne Diseases</b>         |            |                |            |            |          |          |                |            |            |        |          |                |
| Jaundice/hepatitis                                                            | 0.0310     | 0.0009         | 0.0293     | 0.0327     | 40,659   | 0.0250   | 0.0009         | 0.0233     | 0.0267     | 31,360 | 0.0282   | 0.0006         |
| Diarrhea                                                                      | 0.1199     | 0.0016         | 0.1167     | 0.1230     | 40,659   | 0.1482   | 0.0020         | 0.1443     | 0.1521     | 31,360 | 0.1328   | 0.0013         |
| Typhoid                                                                       | 0.0606     | 0.0012         | 0.0583     | 0.0629     | 40,659   | 0.0550   | 0.0013         | 0.0525     | 0.0576     | 31,360 | 0.0581   | 0.0009         |
| <b>Self-Reported Prevalence (%) of Diagnosed Vector-Borne Diseases</b>        |            |                |            |            |          |          |                |            |            |        |          |                |
| Malaria                                                                       | 0.0768     | 0.0013         | 0.0742     | 0.0794     | 40,659   | 0.0863   | 0.0016         | 0.0832     | 0.0895     | 31,360 | 0.0812   | 0.0010         |
| Dengue                                                                        | 0.0106     | 0.0005         | 0.0096     | 0.0116     | 40,659   | 0.0104   | 0.0006         | 0.0093     | 0.0116     | 31,360 | 0.0106   | 0.0004         |
| Chickungunya                                                                  | 0.0269     | 0.0008         | 0.0253     | 0.0284     | 40,659   | 0.0216   | 0.0008         | 0.0200     | 0.0232     | 31,360 | 0.0245   | 0.0006         |
| <b>Self-Reported Prevalence (%) of Diagnosed Other Infectious Diseases</b>    |            |                |            |            |          |          |                |            |            |        |          |                |
| Tuberculosis                                                                  | 0.0087     | 0.0005         | 0.0078     | 0.0096     | 40,659   | 0.0109   | 0.0006         | 0.0097     | 0.0120     | 31,360 | 0.0097   | 0.0004         |
| Urinary tract infection                                                       | 0.0205     | 0.0007         | 0.0191     | 0.0219     | 40,659   | 0.0255   | 0.0009         | 0.0237     | 0.0272     | 31,360 | 0.0228   | 0.0006         |
| <b>Self-Reported Prevalence (%) of Diagnosed Reproductive Health Problems</b> |            |                |            |            |          |          |                |            |            |        |          |                |
| Genital prolapse                                                              | 0.0269     | 0.0010         | 0.0249     | 0.0289     | 25,136   |          |                |            |            |        |          |                |
| Uterine fibroid/ cyst                                                         | 0.0132     | 0.0007         | 0.0118     | 0.0146     | 25,136   |          |                |            |            |        |          |                |
| Any reproductive health problem                                               | 0.1584     | 0.0023         | 0.1539     | 0.1629     | 25,136   |          |                |            |            |        |          |                |
| Percentage of older adult women undergone Hysterectomy                        | 0.1253     | 0.0021         | 0.1212     | 0.1294     | 25,198   | 0.0986   | 0.0023         | 0.0940     | 0.1031     | 16,296 | 0.1142   | 0.001561       |
| <b>9. Direct Health Examinations: Biomarkers</b>                              |            |                |            |            |          |          |                |            |            |        |          |                |
| <b>Mean</b>                                                                   |            |                |            |            |          |          |                |            |            |        |          |                |
| Systolic blood pressure (Mean)                                                | 123.2140   | 0.0918         | 123.0340   | 123.3939   | 37,256   | 131.7286 | 0.1162         | 131.5009   | 131.9564   | 28,495 | 127.1118 | 0.0744         |
| Diastolic blood pressure (Mean)                                               | 81.6221    | 0.0530         | 81.5182    | 81.7259    | 37,256   | 80.3357  | 0.0631         | 80.2119    | 80.4595    | 28,495 | 81.0332  | 0.0407         |
| Pulse rate (Mean)                                                             | 81.6997    | 0.0591         | 81.5839    | 81.8156    | 37,256   | 80.3571  | 0.0711         | 80.2176    | 80.4965    | 28,495 | 81.0851  | 0.0457         |
| <b>Prevalence of Measured Blood Pressure</b>                                  |            |                |            |            |          |          |                |            |            |        |          |                |
| <b>Prevalence</b>                                                             |            |                |            |            |          |          |                |            |            |        |          |                |
| Normal                                                                        | 0.3505     | 0.0025         | 0.3456     | 0.3553     | 37,256   | 0.2460   | 0.0026         | 0.2410     | 0.2510     | 28,495 | 0.3026   | 0.0018         |
| Prehypertension                                                               | 0.3974     | 0.0025         | 0.3924     | 0.4024     | 37,256   | 0.3926   | 0.0029         | 0.3869     | 0.3983     | 28,495 | 0.3952   | 0.0019         |
| High BP                                                                       | 0.2521     | 0.0022         | 0.2477     | 0.2565     | 37,256   | 0.3615   | 0.0028         | 0.3559     | 0.3670     | 28,495 | 0.3022   | 0.0018         |
| Mild hypertension                                                             | 0.1824     | 0.0020         | 0.1785     | 0.1863     | 37,256   | 0.2531   | 0.0026         | 0.2481     | 0.2582     | 28,495 | 0.2148   | 0.0016         |
| Moderate hypertension                                                         | 0.0581     | 0.0012         | 0.0557     | 0.0605     | 37,256   | 0.0978   | 0.0018         | 0.0943     | 0.1012     | 28,495 | 0.0763   | 0.0010         |
| Severe hypertension                                                           | 0.0116     | 0.0006         | 0.0105     | 0.0127     | 37,256   | 0.0105   | 0.0006         | 0.0094     | 0.0117     | 28,495 | 0.0111   | 0.0004         |
| No hypertension                                                               | 0.6242     | 0.0025         | 0.6192     | 0.6291     | 37,236   | 0.4651   | 0.0030         | 0.4593     | 0.4709     | 28,471 | 0.5513   | 0.00194        |
| Undiagnosed hypertension                                                      | 0.1768     | 0.0020         | 0.1730     | 0.1807     | 37,236   | 0.2159   | 0.0024         | 0.2111     | 0.2206     | 28,471 | 0.1946   | 0.0015         |
| Controlled hypertension                                                       | 0.1236     | 0.0017         | 0.1203     | 0.1270     | 37,236   | 0.1731   | 0.0022         | 0.1687     | 0.1775     | 28,471 | 0.1463   | 0.0014         |
| Uncontrolled hypertension                                                     | 0.0754     | 0.0014         | 0.0727     | 0.0781     | 37,236   | 0.1459   | 0.0021         | 0.1418     | 0.1500     | 28,471 | 0.1077   | 0.0012         |
| Untreated hypertension                                                        | 0.1071     | 0.0035         | 0.1003     | 0.1139     | 7,938    | 0.1002   | 0.0030         | 0.0942     | 0.1061     | 9,697  | 0.1031   | 0.0023         |
| Adequately treated hypertension                                               | 0.2716     | 0.0050         | 0.2618     | 0.2814     | 7,938    | 0.3575   | 0.0049         | 0.3480     | 0.3671     | 9,697  | 0.3210   | 0.0035         |
| Prevalence of Lung function test                                              | 0.3577     | 0.0054         | 0.3472     | 0.3683     | 7,938    | 0.4229   | 0.0050         | 0.4130     | 0.4327     | 9,697  | 0.3952   | 0.0037         |
| <b>Mean % predicted FEV1 (male)</b>                                           |            |                |            |            |          |          |                |            |            |        |          |                |
| Mean absolute PEFR (male)                                                     | 76.5873    | 0.1675         | 76.2589    | 76.9156    | 10,300   | 75.9161  | 0.2249         | 75.4752    | 76.3570    | 8,296  | 76.2687  | 0.1374         |
| Mean % predicted FEV1 (female)                                                | 5.8414     | 0.0173         | 5.8076     | 5.8753     | 10,297   | 4.8117   | 0.0185         | 4.7754     | 4.8480     | 8,294  | 5.3526   | 0.0132         |
| Mean absolute PEFR (female)                                                   | 80.5667    | 0.1621         | 80.2490    | 80.8845    | 15,673   | 82.9100  | 0.4666         | 81.9953    | 83.8247    | 6,949  | 81.3571  | 0.1862         |
| Mean % predicted FVC (male)                                                   | 4.3527     | 0.0107         | 4.3316     | 4.3737     | 15,665   | 3.5790   | 0.0160         | 3.5476     | 3.6105     | 6,944  | 4.0917   | 0.0092         |
| Mean % predicted FVC (female)                                                 | 81.0254    | 0.1688         | 80.6945    | 81.3563    | 8,721    | 80.9007  | 0.2161         | 80.4771    | 81.3244    | 6,828  | 80.9671  | 0.1345         |
| Mean % predicted FEF25-75 (male)                                              | 74.9810    | 0.3104         | 74.3726    | 75.5894    | 8,721    | 78.5620  | 0.4598         | 77.6606    | 79.4633    | 6,828  | 76.6556  | 0.2690         |
| Mean absolute FEV1/FVC (%) (male)                                             | 78.9530    | 0.0842         | 78.7879    | 79.1181    | 8,721    | 75.8081  | 0.1225         | 75.5679    | 76.0483    | 6,828  | 77.4823  | 0.0732         |
| Mean absolute FEV1/FVC (%) (female)                                           |            |                |            |            |          |          |                |            |            |        |          |                |

| Standard error and confidence interval - Individual Sections |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
|--------------------------------------------------------------|------------|----------------|------------|------------|--------|----------|----------------|------------|------------|--------|----------|----------------|------------|------------|
| Indicators                                                   | Age 45-59* |                |            |            |        | Age ≥ 60 |                |            |            |        | Total    |                |            |            |
|                                                              | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean     | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean     | Std. Err. (SE) | Mean - 2SE | Mean + 2SE |
| Mean % predicted FVC (female)                                | 84.1782    | 0.1588         | 83.8670    | 84.4894    | 13,092 | 85.6664  | 0.2880         | 85.1019    | 86.2309    | 5,532  | 84.6481  | 0.1412         | 84.3714    | 84.9248    |
| Mean % predicted FEF25-75 (female)                           | 76.3994    | 0.2673         | 75.8755    | 76.9233    | 13,092 | 84.0525  | 0.5502         | 82.9739    | 85.1312    | 5,532  | 78.8159  | 0.2519         | 78.3223    | 79.3096    |
| Mean absolute FEV1/FVC (%) (female)                          | 81.0475    | 0.0635         | 80.9231    | 81.1720    | 13,092 | 78.9885  | 0.1146         | 78.7638    | 79.2131    | 5,532  | 80.3974  | 0.0567         | 80.2861    | 80.5086    |
| Normal PFT                                                   | 0.5185     | 0.0034         | 0.5118     | 0.5251     | 21,813 | 0.5061   | 0.0045         | 0.4973     | 0.5149     | 12,360 | 0.5137   | 0.0027         | 0.5084     | 0.5190     |
| Restrictive lung disease                                     | 0.3953     | 0.0033         | 0.3888     | 0.4018     | 21,813 | 0.3988   | 0.0044         | 0.3902     | 0.4074     | 12,360 | 0.3966   | 0.0026         | 0.3915     | 0.4018     |
| Mild obstructive lung disease                                | 0.0430     | 0.0014         | 0.0403     | 0.0457     | 21,813 | 0.0390   | 0.0017         | 0.0356     | 0.0424     | 12,360 | 0.0415   | 0.0011         | 0.0393     | 0.0436     |
| Moderate-severe obstructive lung disease                     | 0.0432     | 0.0014         | 0.0405     | 0.0459     | 21,813 | 0.0561   | 0.0021         | 0.0520     | 0.0602     | 12,360 | 0.0482   | 0.0012         | 0.0459     | 0.0505     |
| Prevalence of Measured Vision                                |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Prevalence                                                   |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Low near vision                                              | 0.2387     | 0.0022         | 0.2343     | 0.2430     | 37,252 | 0.3222   | 0.0028         | 0.3168     | 0.3277     | 28,478 | 0.2769   | 0.0017         | 0.2735     | 0.2803     |
| Low distance vision                                          | 0.0395     | 0.0010         | 0.0375     | 0.0414     | 37,252 | 0.1468   | 0.0021         | 0.1427     | 0.1509     | 28,478 | 0.0886   | 0.0011         | 0.0864     | 0.0908     |
| Low vision                                                   | 0.2569     | 0.0023         | 0.2524     | 0.2613     | 37,252 | 0.3706   | 0.0029         | 0.3650     | 0.3762     | 28,478 | 0.3089   | 0.0018         | 0.3054     | 0.3125     |
| Blindness                                                    | 0.0060     | 0.0004         | 0.0052     | 0.0068     | 37,252 | 0.0383   | 0.0011         | 0.0361     | 0.0406     | 28,478 | 0.0208   | 0.0006         | 0.0197     | 0.0219     |
| Anthropometry                                                |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean and proportion                                          |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean height (male)                                           | 163.3347   | 0.0571         | 163.2228   | 163.4467   | 13,911 | 161.3570 | 0.0596         | 161.2403   | 161.4738   | 13,509 | 162.3132 | 0.0417         | 162.2314   | 162.3949   |
| Mean weight (male)                                           | 60.1284    | 0.1047         | 59.9231    | 60.3337    | 13,911 | 55.3434  | 0.1039         | 55.1398    | 55.5470    | 13,509 | 57.6567  | 0.0751         | 57.5095    | 57.8040    |
| Mean BMI (male)                                              | 22.478     | 0.035          | 22.409     | 22.546     | 13,911 | 21.1913  | 0.0353         | 21.1220    | 21.2605    | 13,509 | 21.8133  | 0.0251         | 21.7640    | 21.8626    |
| Mean height (female)                                         | 151.3246   | 0.0393         | 151.2475   | 151.4018   | 23,222 | 148.3516 | 0.0555         | 148.2428   | 148.4603   | 14,541 | 150.1026 | 0.0332         | 150.0375   | 150.1678   |
| Mean weight (female)                                         | 54.5457    | 0.0835         | 54.3820    | 54.7095    | 23,222 | 49.2249  | 0.1067         | 49.0157    | 49.4341    | 14,541 | 52.3587  | 0.0672         | 52.2271    | 52.4904    |
| Mean BMI (female)                                            | 23.7476    | 0.0332         | 23.6826    | 23.8126    | 23,222 | 22.7585  | 0.0433         | 22.1737    | 22.3434    | 14,541 | 23.1356  | 0.0266         | 23.0834    | 23.1878    |
| Underweight                                                  | 0.1560     | 0.0019         | 0.1523     | 0.1597     | 37,133 | 0.2668   | 0.0026         | 0.2616     | 0.2719     | 28,050 | 0.2064   | 0.0016         | 0.2033     | 0.2095     |
| Overweight                                                   | 0.2398     | 0.0022         | 0.2355     | 0.2442     | 37,133 | 0.1666   | 0.0022         | 0.1623     | 0.1710     | 28,050 | 0.2065   | 0.0016         | 0.2034     | 0.2096     |
| Obesity                                                      | 0.0897     | 0.0015         | 0.0868     | 0.0926     | 37,133 | 0.0548   | 0.0014         | 0.0522     | 0.0575     | 28,050 | 0.0738   | 0.0010         | 0.0718     | 0.0758     |
| Mean waist circumference (male)                              | 86.2468    | 0.1001         | 86.0506    | 86.4431    | 13,908 | 84.4041  | 0.1072         | 84.1939    | 84.6142    | 13,502 | 85.2951  | 0.0736         | 85.1509    | 85.4393    |
| Mean hip circumference (male)                                | 90.5698    | 0.0736         | 90.4254    | 90.7142    | 13,908 | 88.3918  | 0.07531        | 88.2441    | 88.5394    | 13,502 | 89.4449  | 0.0531         | 89.3409    | 89.5490    |
| Mean waist to hip ratio (male)                               | 0.95044    | 0.0006         | 0.9492     | 0.9516     | 13,908 | 0.9525   | 0.0006         | 0.9511     | 0.95388    | 13,502 | 0.9515   | 0.0005         | 0.9506     | 0.9524     |
| Mean waist circumference (female)                            | 85.1128    | 0.0880         | 84.9401    | 85.2855    | 23,216 | 83.6655  | 0.1179         | 83.4342    | 83.8968    | 14,525 | 84.5183  | 0.0709         | 84.3794    | 84.6573    |
| Mean hip circumference (female)                              | 94.0937    | 0.0749         | 93.9468    | 94.2406    | 23,216 | 91.3378  | 0.1012         | 91.1393    | 91.53624   | 14,525 | 92.9617  | 0.0609         | 92.8424    | 93.0810    |
| Mean waist to hip ratio (female)                             | 0.90313    | 0.0005         | 0.9021     | 0.9041     | 23,216 | 0.9147   | 0.0007         | 0.9133     | 0.91613    | 14,525 | 0.9079   | 0.0004         | 0.9071     | 0.9087     |
| High risk waist circumference (male)                         | 0.09374    | 0.0024         | 0.0889     | 0.0985     | 13,908 | 0.0889   | 0.0024         | 0.0841     | 0.0937     | 13,502 | 0.0912   | 0.0017         | 0.0878     | 0.0947     |
| High risk waist circumference (female)                       | 0.41177    | 0.0032         | 0.4054     | 0.4181     | 23,216 | 0.3696   | 0.0040         | 0.3618     | 0.3775     | 14,525 | 0.3945   | 0.0025         | 0.3895     | 0.3994     |
| Low risk (normal) WHR                                        | 0.26033    | 0.0022         | 0.2558     | 0.2647     | 37,124 | 0.2469   | 0.0025         | 0.24188    | 0.2519     | 28,027 | 0.2542   | 0.0017         | 0.2509     | 0.2576     |
| High-risk WHR                                                | 0.7396     | 0.0022         | 0.7352     | 0.7441     | 37,124 | 0.7530   | 0.0025         | 0.74801    | 0.7581     | 28,027 | 0.7458   | 0.0017         | 0.7424     | 0.7491     |
| Grip Strength                                                |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean                                                         |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean grip strength (dominant hand-male)                      | 30.4137    | 0.0611         | 30.2939    | 30.5335    | 13,830 | 23.856   | 0.0602         | 23.7387    | 23.97509   | 13,412 | 27.0317  | 0.0473         | 26.9391    | 27.1244    |
| Mean grip strength (non-dominant hand-male)                  | 27.9220    | 0.0596         | 27.8052    | 28.0389    | 13,501 | 21.5556  | 0.0584         | 21.4411    | 21.6702    | 13,041 | 24.6408  | 0.0461         | 24.5505    | 24.7311    |
| Mean grip strength (dominant hand-female)                    | 20.0710    | 0.0338         | 20.0047    | 20.1374    | 22,958 | 15.5892  | 0.0410         | 15.5087    | 15.6696    | 14,327 | 18.2309  | 0.0285         | 18.1751    | 18.2867    |
| Mean grip strength (non-dominant hand-female)                | 18.0047    | 0.0326         | 17.9408    | 18.0687    | 22,539 | 13.7606  | 0.0389         | 13.6842    | 13.8370    | 13,897 | 16.2760  | 0.0273         | 16.2224    | 16.3295    |
| Timed Walk                                                   |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean time for 4-meter walk                                   | 4.9020     | 0.0059         | 4.8904     | 4.9136     | 36,909 | 6.0324   | 0.0140         | 6.0049     | 6.0598     | 27,495 | 5.4126   | 0.0073         | 5.3982     | 5.4269     |
| 10. Mental Health: Cognition and Depression                  |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean and Proportion                                          |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Measured Cognition                                           |            |                |            |            |        |          |                |            |            |        |          |                |            |            |
| Mean total word recall                                       | 9.7850     | 0.0187         | 9.7484     | 9.8216     | 36,521 | 8.1003   | 0.0213         | 8.0585     | 8.1422     | 26,947 | 9.0347   | 0.0144         | 9.0064     | 9.0630     |

| Standard error and confidence interval - Individual Sections                                        |            |                |            |            |          |         |                |            |            |        |         |                |
|-----------------------------------------------------------------------------------------------------|------------|----------------|------------|------------|----------|---------|----------------|------------|------------|--------|---------|----------------|
| Indicators                                                                                          | Age 45-59* |                |            |            | Age ≥ 60 |         |                |            | Total      |        |         |                |
|                                                                                                     | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number   | Mean    | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean    | Std. Err. (SE) |
| Percentage of older adults in lowest 10th percentile of total word recall                           | 0.0652     | 0.0013         | 0.0627     | 0.0678     | 36,521   | 0.1587  | 0.0022         | 0.1544     | 0.1631     | 26,947 | 0.1069  | 0.0012         |
| Mean verbal fluency                                                                                 | 12.1165    | 0.0219         | 12.0736    | 12.1595    | 38,227   | 10.9969 | 0.0246         | 10.9487    | 11.0451    | 29,069 | 11.6088 | 0.0165         |
| Lowest 10th percentile of Verbal fluency                                                            | 0.0717     | 0.0013         | 0.0691     | 0.0742     | 38,227   | 0.1235  | 0.0019         | 0.1197     | 0.1273     | 29,069 | 0.0952  | 0.0011         |
| Mean Arithmetic function                                                                            | 5.0983     | 0.0149         | 5.0692     | 5.1275     | 38,223   | 4.1923  | 0.0177         | 4.1577     | 4.2269     | 29,065 | 4.6875  | 0.0115         |
| Lowest 10th percentile of Arithmetic function                                                       | 0.1323     | 0.0017         | 0.1289     | 0.1357     | 38,223   | 0.2364  | 0.0025         | 0.2315     | 0.2413     | 29,065 | 0.1795  | 0.0015         |
| Composite cognition                                                                                 | 26.4825    | 0.0352         | 26.4135    | 26.5515    | 36,504   | 23.1024 | 0.0432         | 23.0178    | 23.1870    | 26,935 | 24.9771 | 0.0282         |
| Lowest 10th percentile of Composite cognition                                                       | 0.0564     | 0.0012         | 0.0541     | 0.0588     | 36,504   | 0.1501  | 0.0022         | 0.1459     | 0.1544     | 26,935 | 0.0982  | 0.0012         |
| <b>Measured depression</b>                                                                          |            |                |            |            |          |         |                |            |            |        |         |                |
| Measured Depression (CID)                                                                           | 0.0718     | 0.0013         | 0.0693     | 0.0744     | 40,264   | 0.0827  | 0.0016         | 0.0797     | 0.0858     | 30,637 | 0.0768  | 0.0010         |
| <b>11. Functional Health</b>                                                                        |            |                |            |            |          |         |                |            |            |        |         |                |
| <b>Proportion</b>                                                                                   |            |                |            |            |          |         |                |            |            |        |         |                |
| <b>Physical and Mental Impairments</b>                                                              |            |                |            |            |          |         |                |            |            |        |         |                |
| Locomotor impairment                                                                                | 0.0355     | 0.0009         | 0.0337     | 0.0373     | 40,604   | 0.0588  | 0.0013         | 0.0562     | 0.0614     | 31,323 | 0.0462  | 0.0008         |
| Mental impairment                                                                                   | 0.0160     | 0.0006         | 0.0148     | 0.0173     | 40,604   | 0.0298  | 0.0010         | 0.0279     | 0.0317     | 31,323 | 0.0223  | 0.0006         |
| Visual impairment                                                                                   | 0.0175     | 0.0007         | 0.0163     | 0.0188     | 40,604   | 0.0408  | 0.0011         | 0.0386     | 0.0429     | 31,323 | 0.0282  | 0.0006         |
| Hearing impairment                                                                                  | 0.0057     | 0.0004         | 0.0049     | 0.0064     | 40,604   | 0.0260  | 0.0009         | 0.0242     | 0.0277     | 31,323 | 0.0150  | 0.0005         |
| Speech impairment                                                                                   | 0.0025     | 0.0002         | 0.0020     | 0.0030     | 40,604   | 0.0091  | 0.0005         | 0.0081     | 0.0102     | 31,323 | 0.0055  | 0.0003         |
| Any impairment                                                                                      | 0.0574     | 0.0012         | 0.0551     | 0.0597     | 40,604   | 0.1045  | 0.0017         | 0.1012     | 0.1079     | 31,323 | 0.0790  | 0.0010         |
| <b>Mobility Restrictions and Work Limiting Health Conditions</b>                                    |            |                |            |            |          |         |                |            |            |        |         |                |
| Any mobility restriction                                                                            | 0.5074     | 0.0025         | 0.5025     | 0.5123     | 40,611   | 0.7572  | 0.0024         | 0.7525     | 0.7620     | 31,336 | 0.6218  | 0.0018         |
| Work limiting health conditions                                                                     | 0.1949     | 0.0025         | 0.1899     | 0.1998     | 24,278   | 0.2934  | 0.0044         | 0.2848     | 0.3021     | 10,676 | 0.2270  | 0.0022         |
| <b>Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) And Helpers</b> |            |                |            |            |          |         |                |            |            |        |         |                |
| 1+ ADL limitations                                                                                  | 0.0928     | 0.0014         | 0.0900     | 0.0957     | 40,607   | 0.2377  | 0.0024         | 0.2330     | 0.2424     | 31,336 | 0.1592  | 0.0014         |
| 1+ IADL limitations                                                                                 | 0.2568     | 0.0022         | 0.2526     | 0.2611     | 40,786   | 0.4797  | 0.0028         | 0.4742     | 0.4852     | 31,464 | 0.3591  | 0.0018         |
| 2+ ADL limitations                                                                                  | 0.0446     | 0.0010         | 0.0425     | 0.0466     | 40,607   | 0.1416  | 0.0020         | 0.1378     | 0.1455     | 31,336 | 0.0890  | 0.0011         |
| 2+ IADL limitations                                                                                 | 0.1598     | 0.0018         | 0.1562     | 0.1633     | 40,786   | 0.3711  | 0.0027         | 0.3658     | 0.3765     | 31,464 | 0.2567  | 0.0016         |
| Helpers                                                                                             | 0.0389     | 0.0010         | 0.0370     | 0.0408     | 40,606   | 0.1292  | 0.0019         | 0.1255     | 0.1330     | 31,335 | 0.0803  | 0.0010         |
| <b>Difficulties in ADL</b>                                                                          |            |                |            |            |          |         |                |            |            |        |         |                |
| Dressing                                                                                            |            |                |            |            |          | 0.0715  | 0.0015         | 0.0686     | 0.0743     | 31,336 |         |                |
| Walking across room                                                                                 |            |                |            |            |          | .074907 | .001487        | .071992    | .077822    | 31,336 |         |                |
| Bathing                                                                                             |            |                |            |            |          | 0.0738  | 0.0015         | 0.0709     | 0.0767     | 31,336 |         |                |
| Eating difficulties                                                                                 |            |                |            |            |          | 0.0835  | 0.0016         | 0.0805     | 0.0866     | 31,336 |         |                |
| Getting in/out of bed                                                                               |            |                |            |            |          | 0.1209  | 0.0018         | 0.1172     | 0.1245     | 31,336 |         |                |
| Toilet use                                                                                          |            |                |            |            |          | 0.1753  | 0.0021         | 0.1711     | 0.1795     | 31,336 |         |                |
| <b>Difficulties in IADL</b>                                                                         |            |                |            |            |          |         |                |            |            |        |         |                |
| <b>Proportion</b>                                                                                   |            |                |            |            |          |         |                |            |            |        |         |                |
| Preparing hot meal                                                                                  |            |                |            |            |          | 0.1842  | 0.0022         | 0.1799     | 0.1885     | 31,336 |         |                |
| Shopping                                                                                            |            |                |            |            |          | 0.2367  | 0.0024         | 0.2319     | 0.2414     | 31,336 |         |                |
| Making telephone calls                                                                              |            |                |            |            |          | .2855   | .0025          | .2805      | .29057     | 31,336 |         |                |
| Taking medication                                                                                   |            |                |            |            |          | 0.1568  | 0.0021         | 0.1528     | 0.1608     | 31,336 |         |                |
| Gardening work                                                                                      |            |                |            |            |          | 0.2651  | 0.0025         | 0.2602     | 0.2700     | 31,336 |         |                |
| Managing money                                                                                      |            |                |            |            |          | 0.2765  | 0.0025         | 0.2716     | 0.2815     | 31,336 |         |                |
| Getting around in unfamiliar places                                                                 |            |                |            |            |          | 0.2979  | 0.0026         | 0.2928     | 0.3029     | 31,336 |         |                |

| Standard error and confidence interval - Individual Sections |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
|--------------------------------------------------------------|------------|----------------|------------|------------|----------|--------|----------------|------------|------------|--------|--------|----------------|------------|------------|
| Indicators                                                   | Age 45-59* |                |            |            | Age ≥ 60 |        |                |            | Total      |        |        |                |            |            |
|                                                              | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number   | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE |
| Aids or Supportive Devices                                   |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Proportion                                                   |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Hearing aid                                                  | 0.0028     | 0.0003         | 0.0022     | 0.0033     | 40,602   | 0.0072 | 0.0005         | 0.0062     | 0.0081     | 31,333 | 0.0048 | 0.0003         | 0.0043     | 0.0053     |
| Spectacles/ Contact lenses                                   | 0.2916     | 0.0023         | 0.2871     | 0.2960     | 40,602   | 0.3745 | 0.0027         | 0.3692     | 0.3799     | 31,333 | 0.3296 | 0.0018         | 0.3261     | 0.3330     |
| Denture                                                      | 0.0150     | 0.0006         | 0.0138     | 0.0162     | 40,602   | 0.0308 | 0.0010         | 0.0289     | 0.0327     | 31,333 | 0.0222 | 0.0005         | 0.0212     | 0.0233     |
| Aids used for physical disabilities                          | 0.0159     | 0.0006         | 0.0147     | 0.0171     | 40,602   | 0.1009 | 0.0017         | 0.0976     | 0.1042     | 31,333 | 0.0548 | 0.0008         | 0.0532     | 0.0565     |
| Any aid or supportive devices                                | 0.3032     | 0.0023         | 0.2988     | 0.3077     | 40,602   | 0.4325 | 0.0028         | 0.4270     | 0.4380     | 31,333 | 0.3624 | 0.0018         | 0.3589     | 0.3660     |
| 12. Health Behaviour and Risk Factors                        |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Proportion                                                   |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Tobacco Consumption (Smoking/Smokeless)                      |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Currently smoking (men)                                      | 0.2607     | 0.0035         | 0.2538     | 0.2677     | 15,302   | 0.2550 | 0.0036         | 0.2480     | 0.2620     | 14,942 | 0.2578 | 0.0025         | 0.2529     | 0.2627     |
| Currently smoking (women)                                    | 0.0172     | 0.0008         | 0.0156     | 0.0188     | 25,108   | 0.0339 | 0.0014         | 0.0311     | 0.0367     | 16,263 | 0.0241 | 0.0008         | 0.0227     | 0.0256     |
| Currently using smokeless tobacco (men)                      | 0.2830     | 0.0036         | 0.2758     | 0.2901     | 15,302   | 0.2749 | 0.0037         | 0.2677     | 0.2820     | 14,941 | 0.2788 | 0.0026         | 0.2737     | 0.2838     |
| Currently using smokeless tobacco (women)                    | 0.1237     | 0.0021         | 0.1196     | 0.1278     | 25,108   | 0.1616 | 0.0029         | 0.1559     | 0.1673     | 16,263 | 0.1395 | 0.0017         | 0.1361     | 0.1428     |
| Alcohol Consumption                                          |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Proportion                                                   |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| frequent non-heavy drinker (men)                             | 0.1723     | 0.0031         | 0.1663     | 0.1783     | 15,309   | 0.1785 | 0.0031         | 0.1723     | 0.1846     | 14,942 | 0.0567 | 0.0013         | 0.0541     | 0.0593     |
| frequent non-heavy drinker (women)                           | 0.0125     | 0.0007         | 0.0111     | 0.0139     | 25,112   | 0.0133 | 0.0009         | 0.0116     | 0.0151     | 16,268 | 0.0058 | 0.0004         | 0.0051     | 0.0066     |
| Frequent episodic drinker (men)                              | 0.0650     | 0.0020         | 0.0611     | 0.0689     | 15,309   | 0.0489 | 0.0018         | 0.0454     | 0.0523     | 14,942 | 0.0621 | 0.0014         | 0.0593     | 0.0648     |
| Frequent episodic drinker (Women)                            | 0.0054     | 0.0005         | 0.0044     | 0.0063     | 25,112   | 0.0065 | 0.0006         | 0.0053     | 0.0077     | 16,268 | 0.0051 | 0.0003         | 0.0044     | 0.0057     |
| Physical Activities and Yoga, Meditations, Asanas, Pranayama |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Physically active (Male)                                     |            |                |            |            |          |        |                |            |            |        | 0.5980 | 0.0028         | 0.5925     | 0.6035     |
| Physically active (Female)                                   |            |                |            |            |          |        |                |            |            |        | 0.6868 | 0.0023         | 0.6823     | 0.6912     |
| Physically inactive (Male)                                   |            |                |            |            |          |        |                |            |            |        | 0.4020 | 0.0028         | 0.3965     | 0.4075     |
| Physically inactive (Female)                                 |            |                |            |            |          |        |                |            |            |        | 0.3132 | 0.0023         | 0.3088     | 0.3177     |
| Daily-Yoga, meditation, asanas, pranayama etc                | 0.0885     | 0.0014         | 0.0857     | 0.0913     | 40,403   | 0.0947 | 0.0017         | 0.0915     | 0.0980     | 31,183 | 0.0914 | 0.0011         | 0.0892     | 0.0935     |
| Once a week- Yoga, meditation, asanas, pranayama etc         | 0.0298     | 0.0008         | 0.0281     | 0.0314     | 40,403   | 0.0286 | 0.0009         | 0.0268     | 0.0305     | 31,183 | 0.0292 | 0.0006         | 0.0280     | 0.0305     |
| Food Availability                                            |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Reduced the size of the meal                                 |            |                |            |            |          |        |                |            |            |        | 0.0597 | 0.0009         | 0.0580     | 0.0615     |
| Hungry but didn't eat                                        |            |                |            |            |          |        |                |            |            |        | 0.0531 | 0.0008         | 0.0515     | 0.0547     |
| Didn't eat for whole day                                     |            |                |            |            |          |        |                |            |            |        | 0.0376 | 0.0007         | 0.0362     | 0.0390     |
| Food security                                                |            |                |            |            |          |        |                |            |            |        | 0.0810 | 0.0010         | 0.0790     | 0.0830     |
| 13: Health Care, Utilization and Health Financing            |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Proportion and Mean                                          |            |                |            |            |          |        |                |            |            |        |        |                |            |            |
| Inpatient rate (Last year)                                   | 0.0631     | 0.0012         | 0.0607     | 0.0654     | 40,786   | 0.0794 | 0.0015         | 0.0764     | 0.0824     | 31,464 | 0.0706 | 0.0009         | 0.0687     | 0.0724     |
| Outpatient rate (Last month)                                 | 0.2391     | 0.0021         | 0.2350     | 0.2432     | 40,786   | 0.2855 | 0.0025         | 0.2805     | 0.2905     | 31,464 | 0.2604 | 0.0016         | 0.2572     | 0.2636     |
| Mean number of days hospitalised                             | 10         | 0.3608         | 10         | 11         | 2,264    | 6      | 0.1706         | 5          | 6          | 2,516  | 8      | 0.1973         | 8          | 8          |
| Public health facility - inpatient care                      | 0.3231     | 0.0098         | 0.3038     | 0.3424     | 2,266    | 0.3763 | 0.0096         | 0.3574     | 0.3953     | 2,517  | 0.3506 | 0.0069         | 0.3371     | 0.3641     |
| Private health facility - inpatient care                     | 0.6576     | 0.0099         | 0.6381     | 0.6772     | 2,266    | 0.5914 | 0.0098         | 0.5722     | 0.6106     | 2,517  | 0.6234 | 0.0070         | 0.6097     | 0.6372     |
| Public health facility - outpatient care                     | 0.2256     | 0.0029         | 0.2198     | 0.2313     | 20,393   | 0.2286 | 0.0031         | 0.2224     | 0.2348     | 17,516 | 0.2270 | 0.0021         | 0.2228     | 0.2312     |
| Private health facility - outpatient care                    | 0.6455     | 0.0033         | 0.6390     | 0.6521     | 20,393   | 0.6331 | 0.0036         | 0.6260     | 0.6402     | 17,516 | 0.6396 | 0.0024         | 0.6347     | 0.6444     |
| Mean OOPe - inpatient care (in ₹) (Public facility)          | 9929       | 1512           | 6961       | 12897      | 967      | 8028   | 682            | 6688       | 9367       | 1,058  | 8876   | 788            | 7329       | 10424      |
| Mean OOPe - inpatient care (in ₹) (Private facility)         | 71232      | 3472           | 64420      | 78044      | 1,242    | 31932  | 1661           | 28673      | 35192      | 1,373  | 52021  | 1944           | 48208      | 55834      |
| Mean OOPe - outpatient care (in ₹)                           | 976        | 25             | 927        | 1025       | 6,678    | 1148   | 61             | 1028       | 1269       | 6,108  | 1061   | 32             | 997        | 1124       |

| Standard error and confidence interval - Individual Sections            |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
|-------------------------------------------------------------------------|------------|----------------|------------|------------|----------|--------|----------------|------------|------------|--------|--------|----------------|------------|------------|--------|
| Indicators                                                              | Age 45-59* |                |            |            | Age ≥ 60 |        |                |            | Total      |        |        |                |            |            |        |
|                                                                         | Mean       | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number   | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number | Mean   | Std. Err. (SE) | Mean - 2SE | Mean + 2SE | Number |
| 14: Family and Social Network                                           |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
| Proportion                                                              |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
| Living alone                                                            | 0.0140     | 0.0006         | 0.0129     | 0.0152     | 40,786   | 0.0568 | 0.0013         | 0.0542     | 0.0594     | 31,464 | 0.0337 | 0.0007         | 0.0323     | 0.0350     | 72,250 |
| Satisfied with current living arrangement                               | 0.7969     | 0.0020         | 0.7929     | 0.8008     | 40,170   | 0.7484 | 0.0025         | 0.7435     | 0.7532     | 30,571 | 0.7748 | 0.0016         | 0.7717     | 0.7779     | 70,741 |
| Received financial support                                              | 0.1229     | 0.0016         | 0.1197     | 0.1261     | 40,158   | 0.1521 | 0.0020         | 0.1481     | 0.1561     | 30,979 | 0.1363 | 0.0013         | 0.1338     | 0.1388     | 71,137 |
| Provided financial support                                              | 0.0822     | 0.0014         | 0.0795     | 0.0849     | 40,165   | 0.0592 | 0.0013         | 0.0566     | 0.0618     | 30,973 | 0.0716 | 0.0010         | 0.0697     | 0.0735     | 71,138 |
| Any member unable to carry basic daily activities                       | 0.0291     | 0.0008         | 0.0275     | 0.0308     | 40,180   | 0.0237 | 0.0009         | 0.0220     | 0.0254     | 30,997 | 0.0266 | 0.0006         | 0.0254     | 0.0278     | 71,177 |
| Instrumental care given to family member/s                              | 0.7866     | 0.0122         | 0.7627     | 0.8106     | 1,129    | 0.6371 | 0.0174         | 0.6030     | 0.6712     | 766    | 0.7256 | 0.0103         | 0.7055     | 0.7457     | 1,895  |
| Instrumental care given to other than family member/s                   | 0.0346     | 0.0009         | 0.0328     | 0.0364     | 40,182   | 0.0170 | 0.0007         | 0.0156     | 0.0185     | 31,006 | 0.0265 | 0.0006         | 0.0254     | 0.0277     | 71,188 |
| Experienced ill treatment                                               |            |                |            |            |          | 0.0522 | 0.0013         | 0.0497     | 0.0547     | 30,427 |        |                |            |            |        |
| Experienced ill treatment by spouse                                     |            |                |            |            |          | 0.0671 | 0.0079         | 0.0516     | 0.0827     | 999    |        |                |            |            |        |
| 15: Decision-Making, Social Participation and Life Satisfaction         |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
| Proportion                                                              |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
| No role in the household in buying and selling of property              | 0.0425     | 0.0010         | 0.0404     | 0.0445     | 37,940   | 0.1000 | 0.0018         | 0.0965     | 0.1035     | 28,292 | 0.0684 | 0.0010         | 0.0664     | 0.0703     | 66,232 |
| Having membership in any organisation                                   | 0.0902     | 0.0014         | 0.0874     | 0.0930     | 40,190   | 0.0469 | 0.0012         | 0.0446     | 0.0493     | 31,013 | 0.0704 | 0.0010         | 0.0685     | 0.0722     | 71,203 |
| Senior citizen club member                                              | 0.0654     | 0.0037         | 0.0581     | 0.0727     | 4,410    | 0.1064 | 0.0067         | 0.0933     | 0.1195     | 2,126  | 0.0780 | 0.0033         | 0.0715     | 0.0845     | 6,536  |
| Low satisfaction with life                                              | 0.3240     | 0.0023         | 0.3194     | 0.3286     | 39,963   | 0.3214 | 0.0027         | 0.3162     | 0.3267     | 30,370 | 0.3229 | 0.0018         | 0.3194     | 0.3263     | 70,333 |
| No discrimination experienced                                           | 0.9244     | 0.0013         | 0.9219     | 0.9270     | 40,786   | 0.9263 | 0.0015         | 0.9234     | 0.9292     | 31,464 | 0.9253 | 0.0010         | 0.9234     | 0.9272     | 72,250 |
| 16: Social Security Schemes for The Elderly                             |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
| Proportion                                                              |            |                |            |            |          |        |                |            |            |        |        |                |            |            |        |
| Utilization of old age pension                                          |            |                |            |            |          | 0.2869 | 0.0035         | 0.2799     | 0.2939     | 16,083 |        |                |            |            |        |
| Utilization of widow pension                                            |            |                |            |            |          | 0.1876 | 0.0051         | 0.1776     | 0.1976     | 5,896  |        |                |            |            |        |
| Utilization of Annapurna scheme                                         |            |                |            |            |          | 0.0234 | 0.0012         | 0.0211     | 0.0257     | 16,083 |        |                |            |            |        |
| Received concessions- In Train travel                                   |            |                |            |            |          | 0.1481 | 0.0020         | 0.1442     | 0.1520     | 31,464 |        |                |            |            |        |
| Received concessions- In Bus travel                                     |            |                |            |            |          | 0.1467 | 0.0019         | 0.1428     | 0.1506     | 31,464 |        |                |            |            |        |
| Received concessions- In air travel                                     |            |                |            |            |          | 0.0212 | 0.0008         | 0.0196     | 0.0228     | 31,464 |        |                |            |            |        |
| Received concessions- In telecommunication services                     |            |                |            |            |          | 0.0099 | 0.0006         | 0.0088     | 0.0110     | 31,464 |        |                |            |            |        |
| Received concessions- In Special interest rates on bank account or loan |            |                |            |            |          | 0.0332 | 0.0010         | 0.0312     | 0.0352     | 31,464 |        |                |            |            |        |
| Received concessions- Income tax rebate                                 |            |                |            |            |          | 0.0140 | 0.0006         | 0.0127     | 0.0154     | 31,464 |        |                |            |            |        |



## APPENDIX – 3A

### Biomarker's measurement tools and protocols

| Test                                                                                 | Equipment                                                                                                                                   | Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Blood pressure (BP) and pulse rate</li> </ul> | <ul style="list-style-type: none"> <li>BP monitor (Omron HEM 7121)</li> <li>Soft measuring tape (Gulick Tape)</li> <li>Stopwatch</li> </ul> | <ul style="list-style-type: none"> <li>Respondent in sitting position with legs uncrossed and flat on the floor, left arm with single layer of clothing.</li> <li>Mid-arm circumference is measured to ensure use of appropriate cuff</li> <li>Arm held steadily on a flat surface with palm facing up and the centre of arm at the level of the heart.</li> <li>Cuff snugly placed approximately 1 cm (1/2") above the elbow.</li> <li>Three readings are taken with a 1-minute gap between each reading; the average of the last two readings is calculated.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Grip strength</li> </ul>                      | <ul style="list-style-type: none"> <li>Hand dynamometer (Smedley's dynamometer)</li> <li>Stopwatch</li> </ul>                               | <ul style="list-style-type: none"> <li>The dynamometer is adjusted to the respondent's dominant hand.</li> <li>Upper arm is held close to the body with forearm at right angle to the upper arm.</li> <li>Respondent is asked to squeeze the dynamometer with the left hand as hard as they can for a few seconds.</li> <li>Reading is taken at the eye level and grip strength was recorded in kilograms up to one decimal place.</li> <li>Test repeated with the right hand after a 30-second break.</li> <li>Total of four readings taken, two for each hand.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Balance test</li> </ul>                       | <ul style="list-style-type: none"> <li>Stopwatch</li> </ul>                                                                                 | <ul style="list-style-type: none"> <li>Mid-level balance test (semi-tandem) is conducted first, progressively testing either the full-tandem or the side-by-side stance depending on the performance in the semi-tandem test.</li> <li>Semi-tandem position - Respondent in standing position with the side of the heel of one foot touching the big toe of the other foot. The stopwatch is started immediately after the respondent begins to hold the semi-tandem position. The stopwatch is stopped after 10 seconds or when the respondent steps out of the position or grabs the supports. The time is recorded.</li> <li>Full-tandem position - Criteria: Respondent was able to complete the semi-tandem test for the full 10 seconds.</li> <li>Respondent stands with the heel of one foot in front and touching the toes of the other foot for 30 seconds (for elderly age over 70) or 60 seconds (for elderly age under 70). When the respondent steps out of position or grabs the supports, the time is recorded.</li> <li>Side-by-side position - Criteria: Respondent was not able to complete the semi-tandem for 10 seconds. Respondent stands with feet together, side-by-side, for 10 seconds. When the respondent steps out of position or take support, the time was is recorded.</li> </ul> |



| Test                                                                  | Equipment                                                                                                                                                                                                                                                         | Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Timed walk</li> </ul>          | <ul style="list-style-type: none"> <li>4-metre walk</li> <li>Steel tape</li> <li>Stopwatch</li> </ul>                                                                                                                                                             | <ul style="list-style-type: none"> <li>A 4-metre distance is marked with measuring tape.</li> <li>Time is recorded from the moment either foot crosses the start line until the moment when either foot touches or moves across the finish line.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Vision test</li> </ul>         | <ul style="list-style-type: none"> <li>Computer-assisted personal interviewing (CAPI) enables visual acuity test for near and distance vision (log mart vision chart)</li> <li>Steel measuring tape</li> <li>Soft measuring tape</li> <li>Masking tape</li> </ul> | <ul style="list-style-type: none"> <li>Initial vision assessment is performed by holding a hand with moving fingers at a 2-feet distance.</li> <li>Distance vision is measured at 3 metres by CAPI at the eye level of the respondent. Respondent should answer at least three E orientations correctly to determine visual acuity level. CAPI records the visual acuity level at which the respondent fails to answer at least three orientations correctly. The test is repeated for the other eye.</li> <li>Near vision is measured at the distance of 40 cm by CAPI at the eye level of the respondent. Respondent must answer at least three E orientations correctly to be categorised into any visual acuity level. CAPI records the visual acuity level at which the respondent fails to answer at least three orientations correctly. The test is repeated for the other eye.</li> </ul> |
| <ul style="list-style-type: none"> <li>Height measurement</li> </ul>  | <ul style="list-style-type: none"> <li>Height measuring board (pocket stadiometer with spirit level bubble)</li> </ul>                                                                                                                                            | <ul style="list-style-type: none"> <li>Respondent standing straight close to wall and stepping onto the base of the stadiometer with feet together maintaining Frankfort plane parallel to the floor.</li> <li>Foot plate is placed on the topmost point of the head ensuring the spirit bubble is level at the centre.</li> <li>The height is recorded in centimetres at the red line on the tape window.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Weight measurement</li> </ul>  | <ul style="list-style-type: none"> <li>Digital weight measuring scale (Seca 803)</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>The weighing scale is placed on the floor on a flat, firm surface.</li> <li>Respondent is asked to remove excess or heavy clothing, purse, and ornaments.</li> <li>Respondent is asked to step on the scale.</li> <li>The weight is recorded in kilograms.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>Waist circumference</li> </ul> | <ul style="list-style-type: none"> <li>Gulick's soft tape for waist measurement</li> </ul>                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Respondent in standing position with feet together.</li> <li>Gulick tape is placed around the waist at the navel parallel to the floor.</li> <li>Light pressure is applied until calibration point is visible on the tensioning device.</li> <li>Measurement is recorded in centimetres.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>Hip circumference</li> </ul>   | <ul style="list-style-type: none"> <li>Gulick's soft tape for waist measurement</li> </ul>                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Respondent in standing position with feet together.</li> <li>Gulick tape is placed around the highest part of the hip parallel to the floor.</li> <li>Light pressure is applied until calibration point is visible on the tensioning device.</li> <li>Measurement is recorded in centimetres.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Test                                                                 | Equipment                                                                                                                                                                                 | Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Lung function test</li> </ul> | <ul style="list-style-type: none"> <li>CAPI-enabled lung function test</li> <li>Spirometer</li> <li>Mouthpiece with filter</li> <li>Barcode scanner</li> <li>Thermo hygrometer</li> </ul> | <ul style="list-style-type: none"> <li>Respondent in upright sitting position.</li> <li>The spirometer, with mouthpiece with filter attached, is held between teeth and sealed with lips.</li> <li>Respondent takes deep and complete breaths and blows as hard, fast, and long as possible (minimum 6 seconds or until 1 second plateau is achieved).</li> <li>Three acceptable tests were performed, out of which two should be repeatable.</li> <li>The spirometry parameters (forced vital capacity, peak expiratory flow, and forced expired volume in 1 s) are generated.</li> </ul>       |
| Dried blood spot (DBS)                                               | <ul style="list-style-type: none"> <li>Whatman filter paper for DBS collection</li> <li>Barcode scanner</li> <li>Sterile consumables</li> </ul>                                           | <ul style="list-style-type: none"> <li>Written consent is obtained from respondent for DBS collection and storage.</li> <li>Respondents wash and air-dry hands.</li> <li>DBS is collected via aseptic method, from side prick of proximal phalanx of the middle or ring finger.</li> <li>DBS cards are dried overnight, packed, and sent to the ICMR-NARI with maintained humidity and temperature within 10 days of collection for storage and testing.</li> <li>All soiled consumables are disposed at nearby health centre or destroyed according to universal safety precautions.</li> </ul> |

## APPENDIX – 3B

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### **Acceptability criteria for spirometry test:**

The graph's Flow-Volume and Volume-Time should both start at the zero point.

- Respondent should inhale and then blow immediately, and as hard and as fast as possible, without delay.
- There should be a sharp peak.
- The respondent should exhale as long as he/she can without any breaks or stops.
- There should be no cough or abrupt stop.
- The respondent should exhale for minimum 3 seconds or until 1-second plateau is achieved.
- The second-deep inhalation should be within zero.

### **Repeatability criteria for spirometry test:**

The difference between the first and second highest values of FVC and FEV1 must be within 250 ml.

To calculate the mean values of lung function parameters, such as FEV1 and PEFR, acceptability criteria are modified so that the maximum number of spirometry tests can be used.

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| <b>Helping Organization for Poverty Alleviation and Rural Development (HOPARD),</b><br>Room No. 2, First floor, Meri Leirak Machin, Opp JNIMS's Boys Hostel,<br>Near Post office, Ayangpali Road, Porompat,<br>Imphal East, Manipur-795 005 | Nagaland<br>Manipur<br>Mizoram<br>Arunachal Pradesh<br>Meghalaya |
| <b>Indian Institute of Health Management Research, (IIHMR),</b><br>Plot No 3, Sector 18A, Mayapuri Industrial Area Phase II, Dwarka,<br>New Delhi-110 075                                                                                   | Punjab<br>Chandigarh                                             |

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| <b>Population Research Centre (PRC), Srinagar</b><br>University of Kashmir, Naseembagh, Hazratbal, Srinagar,<br>Kashmir-190 006        | Jammu & Kashmir                                           |

# Longitudinal Ageing Study in India (LASI)

## Wave-1



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