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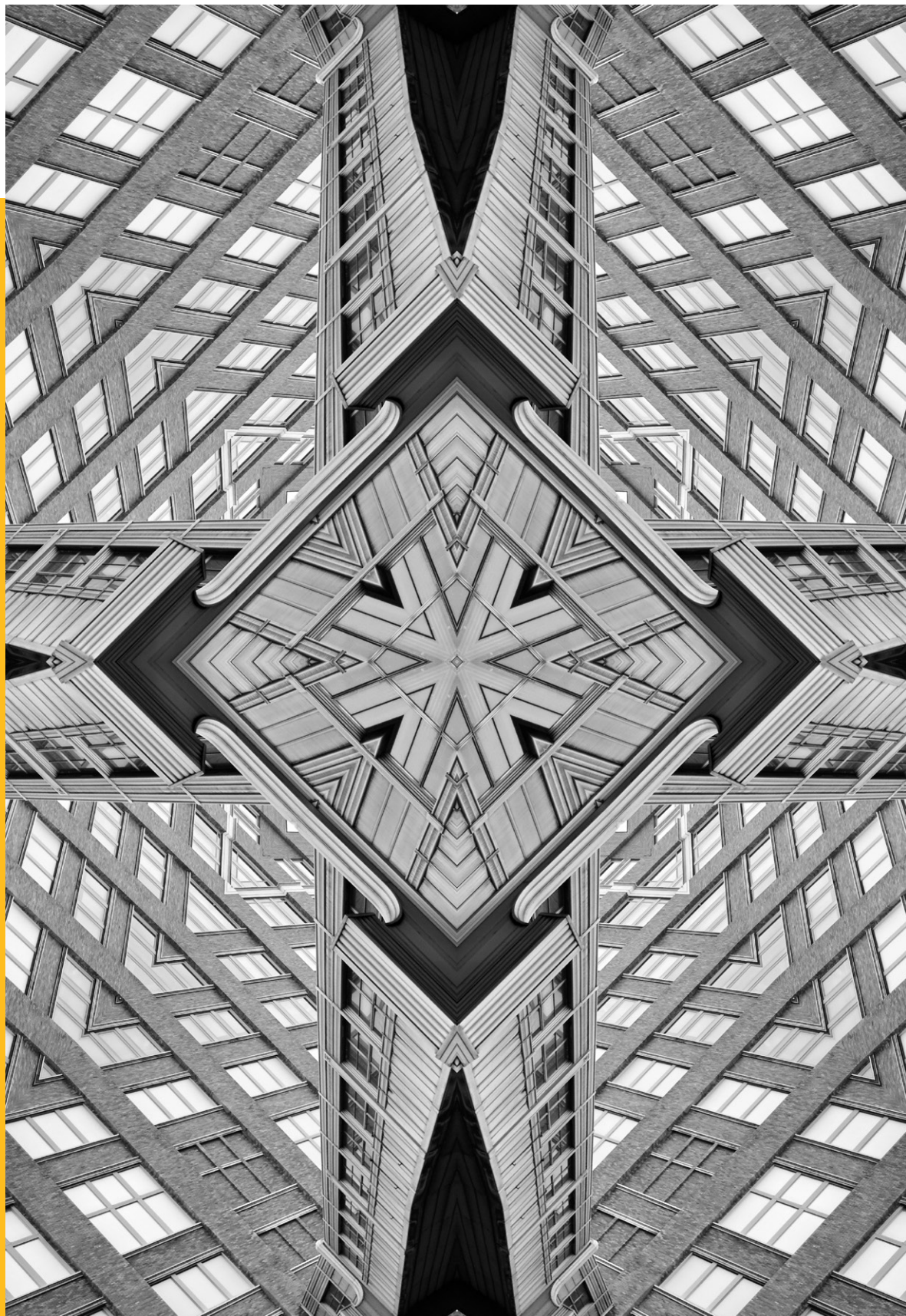
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Gendered Prevalence of Non-Communicable Diseases in India's Older Adults

Mona and Shoba Suri

Abstract

Rapid advancements in medicine and falling fertility rates have contributed to the rise in the population of India's older adults in recent decades. This demographic and epidemiological shift has a gendered impact: A higher proportion of women over the age of 60, compared to their male counterparts, suffer from Non-Communicable Diseases (NCDs) such as diabetes, hypertension, heart and bone diseases, cancers, cognitive decline, and depression. The current prevalence rate for older adult women is 62 per 1,000; for men, it is 36 per 1,000. This paper utilises a narrative literature review to explore the disparity, and finds among others that traditional gendered roles and socioeconomic inequities contribute to elderly women's higher predisposition to NCDs. The paper employs data from the first round of the Longitudinal Ageing Study India (2017-18) and makes a policy case for a gender- and age-responsive health system for older adult women.

The World Health Organization (WHO) defines non-communicable diseases (NCDs), or chronic diseases, as illnesses of long duration and the product of a combination of genetic, physiological, environmental, and behavioural factors.¹ The major types of NCDs are cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes. This paper focuses on the NCDs burden of India's older adult women, which is a result of multiple factors, including what experts refer to as "social determinants of health". These are "the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life."² They can include income and social protection, education, unemployment and job insecurity, housing, basic amenities, and the environment.

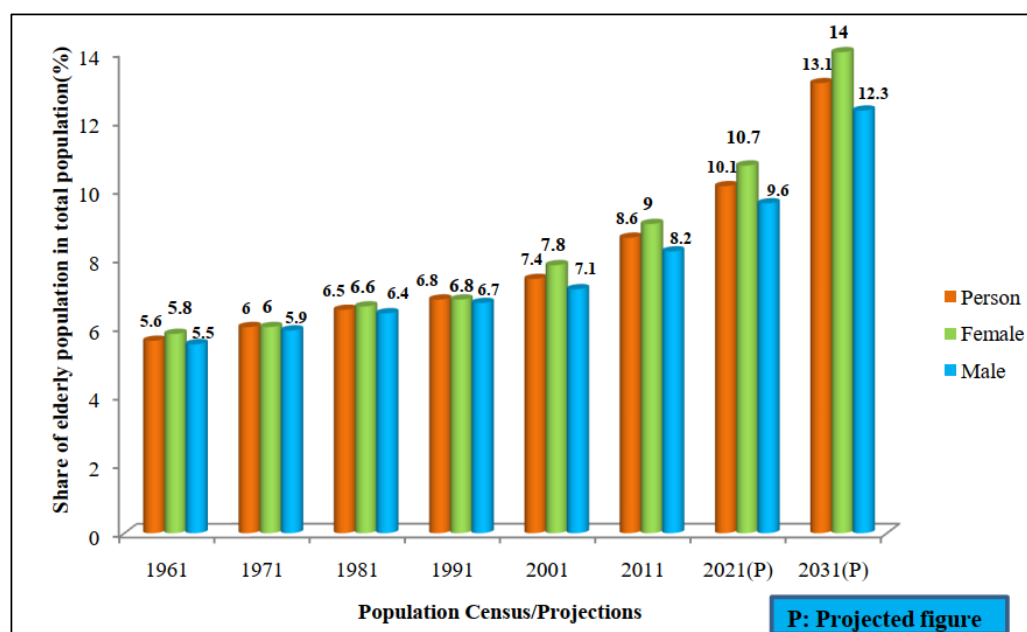
Women's health has been historically under-prioritised and under-funded, especially beyond reproductive and maternal health. Later in their life, women bear an uneven and disproportionate share of the elderly illiterate, financially uninsured, and progressively diseased population. This phenomenon can be partly explained by the impact of social biases and gendered roles. For example, older adult women bear a disproportionate amount of unpaid care work (245 minutes a day for elderly women; 112 minutes for elderly men); they are often segregated in poorly paid labour-intensive work; and they have poor access to digital tools and technology. They also face the risk of gender-based violence. Nutritional deficiencies and morbidities like anaemia (5.9 percent women compared to 3.1 percent men) and obesity (10.2 percent of women compared to 3.4 percent of men) further exacerbate with age.

The population of India's elderly^a was at 138 million in 2021, of which 71 million were females.³ Further, the share of the country's overall population comprising the elderly has been steadily rising since 1961: the elderly males, from 5.5 percent (1961) to 9.6 percent (2021); and elderly females, from 5.8 percent (1961) to 10.7 percent (2021) (see Figure 1).

“Women's health has been historically under-prioritised and under-funded.”

^a The National Policy on Senior Citizens (2011) defines a person 60 years and above as elderly.

Figure 1
India's Elderly Population as % of Total



Source: *Elderly in India 2021*, Ministry of Statistics & Programme Implementation⁴

As the proportion of the elderly has been increasing in recent years, little attention is being paid to their specific health challenges. While the National Sample Surveys (NSS) and Census regularly take stock of their numbers, there is a lack of understanding of the unique challenges that they face, because of their age, with regard to the prevalence of NCDs. Filling this gap in the literature should help India make appropriate elderly-related policies towards the fulfilment of targets encoded in SDGs 3 and 5. In particular, addressing the challenges facing older adults are related to the following goals:

- 3.4 (To reduce by one-third pre-mature mortality from NCDs through prevention and treatment and promote mental health and well-being);
- 3.8 (To achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all); and

- 5.4 (To recognise and value unpaid care and domestic work through the provision of public services, infrastructure, and social protection policies, and the promotion of shared responsibility within the household and the family as nationally appropriate by 2030).

Furthermore, in line with the United Nations Decade of Healthy Ageing (2021–2030), this paper recommends the implementation of person-centred integrated care and long-term health services that will be more responsive to older people.

“Addressing the challenges facing older adults will help achieve a number of SDG targets.”

Global Literature

Research from both developed and developing countries have captured the gender gap in self-rated health among the elderly. For instance, Le, Quashie and Prachuabmoh (2018) found, in their study of older adults in Vietnam, that the proportion of elderly women rating their health poorly was higher than that of elderly men.⁵ A similar study of older adults in Singapore showed the gender differences in self-reported health and prevalence of chronic diseases and functional disability, which had reduced significantly when demographic, socio-economic, health risk behaviours, and social support factors were controlled for.⁶ Meanwhile, a cross-city analysis in Latin America and the Caribbean suggests that women displayed worse health outcomes, of which self-rated health was a part, than men in all seven cities covered by the study.⁷ In Taiwan, the gender gap in self-perceived health is considerable despite controlling for various health factors.⁸ Evidence from Mexico also suggests that older women rate their health poorer than their male counterparts.⁹

The prevalence of multi-morbidity is higher among women compared to men, not only for chronic ailments but also for other diseases. The reasons are many, and they encompass biological, sociocultural, and economic causes. Existing studies also focus on the prevalence of NCDs, in particular, among women across different age groups.

In Nepal, females were found to be more often affected by cancer than males.¹⁰ While breast cancer is more prevalent among younger women, cervical cancer is more common in middle-aged women, and lung cancer among the elderly women.¹¹ The prevalence of diabetes and impaired fasting glucose in the country was observed to increase with age for both men and women.^{12,13} Meanwhile, a study based on the elderly in Uganda observed that the reporting behaviour of NCDs was generally higher in the 60-69 years and 70-79 years age groups, and within these age groups, the likelihood was higher among older women.¹⁴ In China, diabetes, hypertension, and dyslipidaemia were more prevalent among men, and osteoporosis was more common among women.¹⁵ While the prevalence of diabetes, osteoporosis, and hypertension increased with age among both men and women, this was the case with obesity and dyslipidaemia only among women.

A study of employees in a large company in Iran suggests that the prevalence of diabetes, cardiovascular diseases, osteoporosis, and cancer increased with age among both men and women.¹⁶ Similar results were found in a study in Qatar, where prevalence increased with age, and this rise was highest in

the 30 to 49 age group.¹⁷ Another study, this time of Canadian adults, found that women's poorer health (measured in part by the presence of chronic illnesses like arthritis and high blood pressure) is partially attributable to their reduced access to social and material conditions that enable good health, and to the everyday stressors associated with women's social roles.¹⁸

Women are more likely to have lower incomes, be single parents, carry a "double day" (working full- or part-time and carrying out household duties for their family), and work in lower-status occupations. A cross-country analysis of the elderly in the United States, the United Kingdom, Italy, Germany, and Spain, found that time allocated to paid work, household work, and active leisure activities was associated with favourable health among both women and men; the gender gap, however, was higher in Germany, Italy, and Spain.¹⁹

The link between NCDs and health risk behaviours, and the gendered prevalence of the latter, is well-documented. A study conducted among the poor elderly in rural Brazil found that among both men and women, consumption of alcohol with smoking, and physical inactivity with smoking, were the most prevalent cluster of risk factors.²⁰ They also concluded that men were more physically inactive than women. Another study of the elderly in Brazil revealed that the most frequent health risk cluster among women and men was physical inactivity and excess weight.²¹ A community-based study in Ethiopia noted that the co-occurrence of multiple behavioural risk factors like harmful drinking, physical inactivity, and poor fruit and vegetable intake was more prevalent among women than men.²²

It is observed that while pension coverage for those aged over 50 years was 51 percent, it was 79 percent among those aged above 65 in South Africa.²³ Research further notes that pension status was associated with a higher frequency of outpatient visits and treatment of hypertensive status; however, it was not associated with self-reported health. A study of Vietnamese households suggests that individuals who had reported NCDs as well as health insurance were twice as likely to utilise outpatient care compared to their counterparts without insurance. However, no significant association was found between having health insurance and the status of household members with reported NCDs.²⁴

Similar trends are occurring in India. The prevalence of NCDs among women is 62 per 1,000, as compared to 36 per 1,000 men.²⁵ Hypertension, depression, gastrointestinal illness, and diabetes are the most common NCD morbidities in the country. A 2012 study examining the health status of elderly women in rural India showed that hypertension is the most common NCD (78 percent of respondents were reported to have the disease), followed by osteoarthritis (73 percent), diabetes (66 percent), and bronchial asthma (77 percent).²⁶

Data from the first Longitudinal Ageing Study in India (LASI), released in 2017, reveal sex differences in the prevalence, and socio-demographic and risk factors for NCDs among older adults in India.²⁷ Studies have established the gender gap in self-rated health outcomes among the elderly.^{28,29,30,31} The same LASI report shows that poor self-rated health is twice as common among adults aged 60 years and above as compared to those between 45 and 59.³² Elderly women are also more likely to report poor self-rated health.

A study of elderly Indian women categorised into three age groups—60-69, 70-79, and above 80—found that the prevalence of diabetes and cancer increases with age.³³ In a study of the health of women in eastern Indian states, mild anaemia was found to be most prevalent among the adolescents ever-married and least among the younger never-married; moderate anaemia was highest among the younger never-married and adolescent ever-married; severe anaemia was most prevalent among the older never-married; and least so among younger ever-married women.³⁴

Overweight/obesity is another health concern and is associated with a number of NCDs,³⁵ as it increases the risk of morbidity, disability, and death. Although measures such as waist circumference and waist-to-hip ratio are significantly associated with a higher prevalence of multi-morbidities among both the elderly men and women, a higher proportion of older women were found to be at high-risk waist-hip ratio (78.5 percent of women vs 75.4 percent of men) and waist circumference (37.1 percent of women vs 8.9 percent of men).³⁶ Increased cardiovascular occurrences, such as coronary heart disease, hypertension, stroke, type 2 diabetes, and several cancers, including breast cancer in postmenopausal women, endometrial cancer, and colon and kidney cancer, are major risk factors for mortality.³⁷ Women had, on average, more NCD risk factors than males did, due to risk factors like obesity and inactivity, which have been shown to be more common in women than in men.^{38,39}

The LASI data reveals a higher prevalence of tobacco use among the northeastern and eastern regions. The prevalence of obesity was found to be higher among urban men and women of all age groups as compared to their rural counterparts; the prevalence of both obesity and behavioural risk factors was found to increase with age in both areas.⁴⁰ A study by the World Health Organization (WHO) found that the percentage of adult women with inadequate physical activity is higher than in adult men; this is reversed in the case of smoking and alcohol consumption, in which the gender gap is also far more significant.⁴¹ People in the highest wealth group, those aged above 70 years, women, and tobacco users had a higher likelihood of reporting NCD multimorbidity.⁴²

Kundu et al. (2022) also found that, regardless of region, the spending incurred by the elderly on private health facilities was nearly five times the expenditure incurred on public ones.⁴³ Analyses of the LASI numbers reveal that the elderly with health insurance were more likely to have a higher uptake of public healthcare services and increased with age for outpatient consultations. For inpatient consultations, the preference for public health facilities declined with age, for both men and women. However, females use less inpatient and more outpatient services compared to men; this is because women are observed to report fewer health concerns compared to men.⁴⁴

Furthermore, NSSO data from 1995-96 and 2014 suggests that first, while the proportion of men engaged in paid work and unpaid work/not working is equal, among older women, 90 percent of them fell into the latter category and second, poor self-rated health was associated with involvement in unpaid work, and not working.⁴⁵ The study notes that perceived bad health and immobility among the elderly increased from paid workers to unpaid workers and the non-working population.⁴⁶ The prevalence of household work and lesser paid or unpaid work among women thus exacerbates the burden of NCDs in their old age.

An equally vital role is played by the presence, or absence, of social protection measures. Across countries in the Global South, there is insufficient access to pension and insurance among the older populations.^{47,48,49} Even as women, in particular, live longer than men, the former is less likely to have access to retirement, pension, or salaried employment.⁵⁰

The above review of literature underlined the different social factors that affect the prevalence of NCDs among elderly women in India: income, social protection, and behavioural patterns. However, much of existing literature focus on self-rated health among the older adults, rather than the incidence and burden of specific NCDs, as found in official government statistics.

Gender becomes a key social determinant in an individual's health quality of life in old age. Research shows that despite women having higher life expectancy, they are also more prone to experiencing poor health in their older age and are living more years with morbidities, compared to men.⁵¹ Cancers, diabetes, cardiovascular diseases, chronic respiratory illnesses, and other non-communicable diseases are on the rise in low-income countries because of the increased prevalence of key modifiable behavioural risks, such as unhealthy diets and tobacco use, and reductions in infectious diseases.⁵² At the same time, population ageing and growth are amplifying the speed of the shift from communicable, maternal, neonatal, and nutritional diseases to non-communicable diseases. More than three-quarters of all NCD fatalities worldwide (31.4 million) occur in low- and middle-income countries, where they affect people disproportionately.⁵³

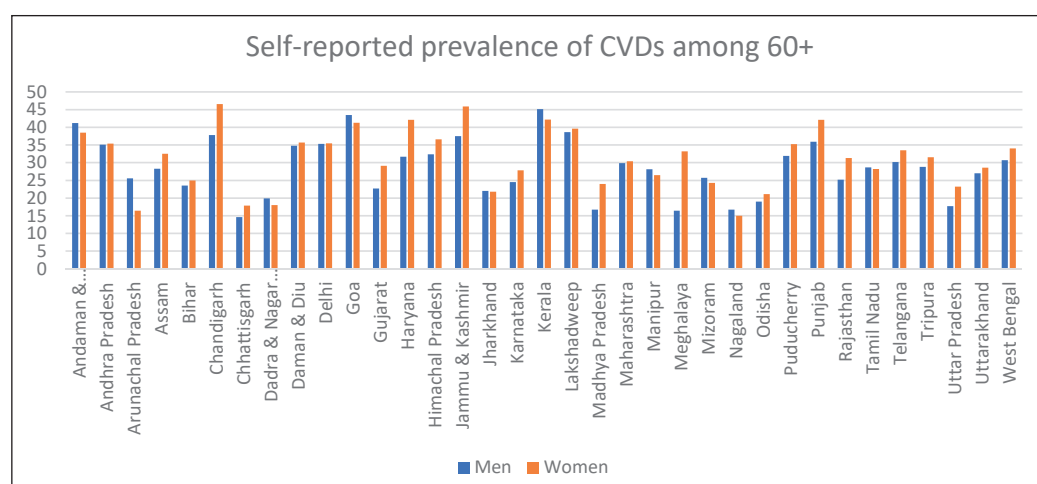
a. Cardiovascular Diseases

The age-associated increase in the prevalence of chronic diseases is very evident for cardiovascular and lung diseases. The LASI report (Wave I) notes increasing prevalence of cardiovascular diseases (CVDs) along the age groups: 22 percent in 45 to 59 years; 34.6 percent in the 60-74 group; and 37 percent among those above 75.⁵⁴ Diagnosed prevalence of cardiovascular diseases is also higher among the elderly women and men in urban regions, and among elderly women, overall. Of the elderly women, according to a 2014 United Nations Population Fund report, the prevalence of NCDs was considerably lower in the 60-69 cohort (60.7 percent) than the older group of 70 and above (74.1 percent).⁵⁵

“Women may have higher life expectancy but they are also more prone to poor health in their older age.”

Figure 2 illustrates a consistent pattern of high self-reported rates of cardiovascular disease among elderly women, with a few exceptions in the northeastern states and union territories.

Figure 2
Self-reported Prevalence of CVDs, 60+ years



Source: LASI 2017-18⁵⁶

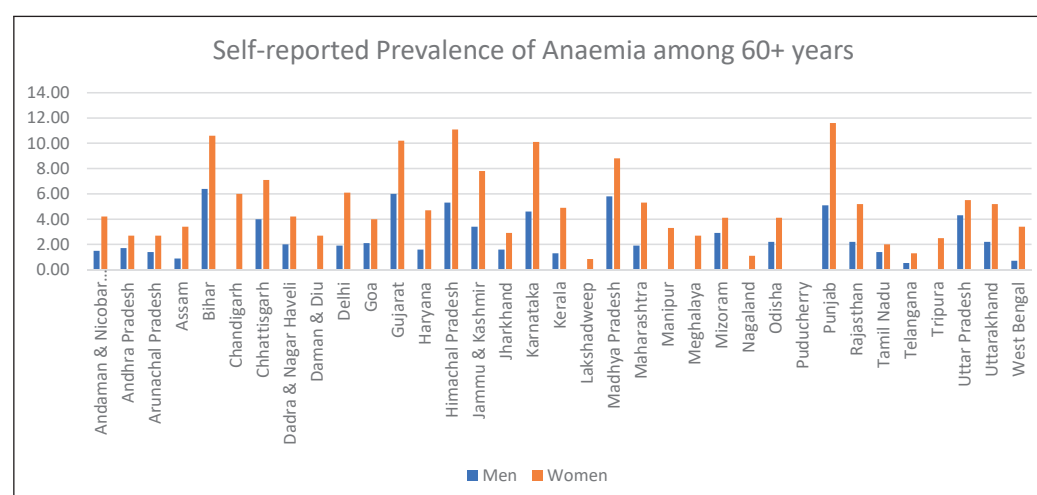
In India, a third of elderly people have hypertension, 5.2 percent suffer from chronic heart disease, and 2.7 percent have ever experienced a stroke.⁵⁷ Nearly 24.8 percent of all deaths in India, according to the Global Burden of Disease (2019),⁵⁸ are caused by CVDs. Data from Medical Certification of Cause of Death (2020)⁵⁹ also shows a significant rise in the percentage of deaths attributable to diseases of the circulatory system, which include diseases of pulmonary circulation, ischaemic heart diseases, cerebrovascular diseases, and hypertensive diseases. This increases notably for women 60 years and older.

Men's CVD rates were higher in states like Kerala (45.1 percent of men compared to 42.2 percent of women), Goa (43.5 percent of men; 41.3 percent of women), and Andaman and Nicobar (41.2 percent of men; 38.5 percent of women) than in Chhattisgarh (17.9 percent of women; 14.6 percent of men) and Meghalaya (33.2 percent of women; 16.2 percent of men). The gender distribution was near-equal in states like Andhra Pradesh, Delhi, Jharkhand, and Tamil Nadu. The prevalence of CVD in women (33.2 percent) in Meghalaya was double that of men (16.4 percent).

b. Anaemia

Anaemia is a prevalent medical condition among women of reproductive age.^b Elderly women (aged 60 years or above) are more susceptible to the severe long-term impacts of anaemia compared to the younger demographic; these conditions can significantly lower their quality of life.⁶⁰ A study⁶¹ among elderly women (60-92 years) in Delhi found almost 80 percent of them having anaemia. Studies also indicate a high prevalence of anaemia in both elderly men and women living in old-age homes in the national capital region,⁶² and those in high-altitude regions.⁶³

Figure 3
Self-reported Prevalence of Anaemia, 60+ years



Source: LASI 2017-18

As the figure indicates, a larger proportion of elderly women than men reported being diagnosed with anaemia. The proportion of anaemic elderly women is almost double that of elderly men aged 60 and older in Bihar, Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, and Punjab. In Chandigarh, Daman & Diu, Lakshadweep, and the northeastern states

^b 'Anaemia' is defined by WHO as having haemoglobin levels of 12 g/dl.

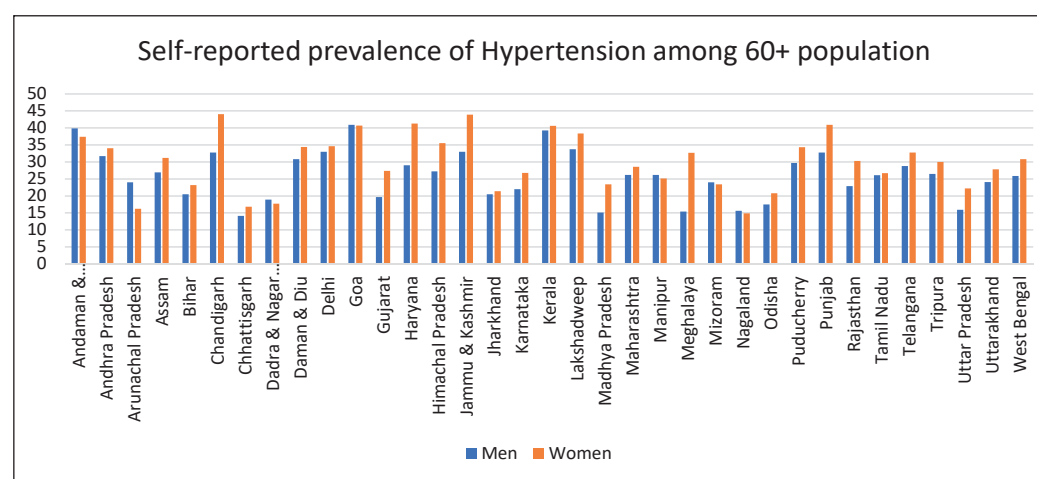
of Manipur, Meghalaya, Nagaland, and Tripura, anaemia were prevalent in elderly women. Overall, 5.9 percent of women compared to 3.1 percent of men among the elderly in India are anaemic.

The prevention of low birth weight, perinatal and maternal mortality, as well as susceptibility to disease later in life, depends on the treatment of anaemia in women of reproductive age. The NFHS-5 results show worrying trends with an increase in anaemia among women and children: 57 percent of women in reproductive age (15–49 years) and 60 percent of adolescent girls (15–19 years old).⁶⁴ This brings to focus the urgent need to tackle anaemia early on in women's lives.

c. Hypertension

In a study of 80-year-olds and above in the urban districts of India's southern states, there was an 83.5 percent prevalence of hypertension—81.6 percent among men and 84.7 percent among women, of which 64.5 percent was self-reported for both elderly men and women.⁶⁵

Figure 4
Self-reported Prevalence of Hypertension, 60+ years



Source: LASI 2017-18

One in every three senior citizens in India has been diagnosed with hypertension.⁶⁶ Among older citizens, the prevalence was higher in women at 27.8 percent than in men (22.9 percent). Chandigarh had the highest percentage of women 60 years and older with the condition (44.1 percent) followed by Jammu & Kashmir, Haryana, Punjab, Kerala, and Goa. The lowest prevalence was found in Nagaland, at 14.9 percent.

A health ministry report, quoted in a 2021 issue of *Down to Earth*, noted an income factor in the prevalence of hypertension: in the highest quintile, 42 percent of senior people had been diagnosed with hypertension; the proportion was 25 percent of those in the poorest quintile.⁶⁷ In Mizoram and Bihar, where only around 50 percent of people received treatment, the hypertension rate was lower. Only one-fourth of the elderly population in Arunachal Pradesh who had been diagnosed with hypertension was receiving treatment. In Goa, Andhra Pradesh, Puducherry, and Kerala, more than 90 percent of the elderly were receiving treatment for hypertension. In Arunachal Pradesh, less than 10 percent were receiving the treatment.

d. Diabetes

India is sometimes referred to as the “diabetes capital” of the world for the high prevalence rates of the disease, particularly in the metropolitan areas. The LASI estimates that the prevalence is higher among the older adults at 14.2 percent, than in people between the ages of 45 and 59 (9.2 percent).

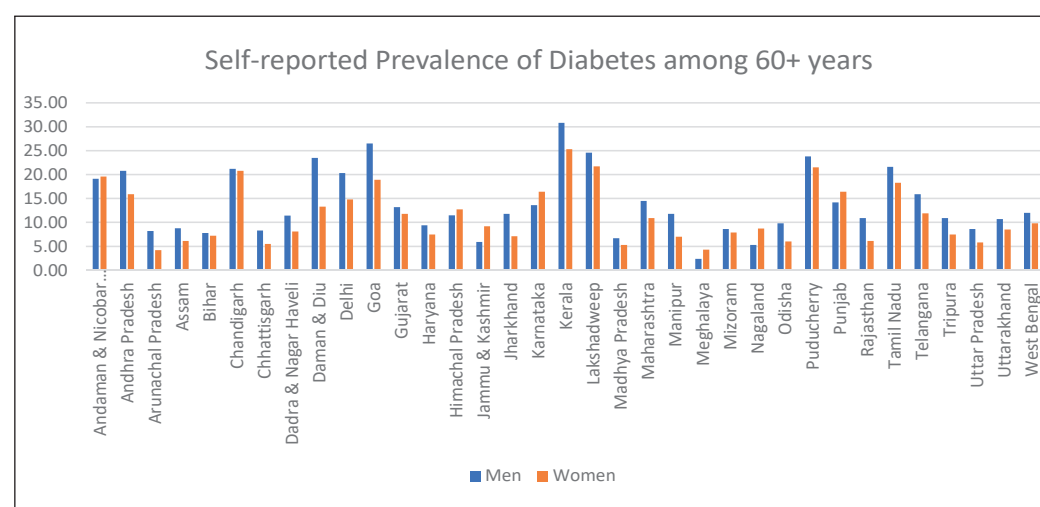
While the prevalence of diabetes among elderly persons is not distinctly gendered, global research points that diabetes results in women being at a four times higher risk of heart disease (two times higher than in men) and more prone to worse outcomes in case of a heart attack.⁶⁸ Moreover, the relative risk of CVD mortality emerging from diabetes thus is 4.9 in women compared to 2.1 in men. While CVD usually presents approximately 10 years later in women than in men, the presence of diabetes almost fully offsets this gap. This also holds true for myocardial infarctions wherein they occur much earlier in women with diabetes.⁶⁹

Further, a known high-risk factor for diabetes, overweight/obesity/higher BMI, despite decreasing from middle-age to old-age, is a more prevalent condition among elderly women than in men.⁷⁰ While it can be attributed to sex-related differences in risk factors and lifestyles, it puts women at an increasingly higher risk of developing diabetes and impaired fasting glucose

levels.⁷¹ Another risk factor—psychosocial stress and depression—was also notably higher among elderly women than men (26.2 percent of men vs 31.4 percent of women). Therefore, while diabetes does not, *prima facie*, appear gendered, it causes far more adverse outcomes among elderly women.⁷²

As per LASI, 10.8 percent of older women have self-reported prevalence of diabetes mellitus compared to 12.4 percent of men. Sub-nationally, self-reported prevalence among women is higher in the states of Kerala, Chandigarh, and Tamil Nadu and the union territories of Andaman & Nicobar and Lakshadweep islands.

Figure 5
Self-reported Prevalence of Diabetes, 60+ years



Source: LASI 2017-18

e. Bone and Joint Diseases

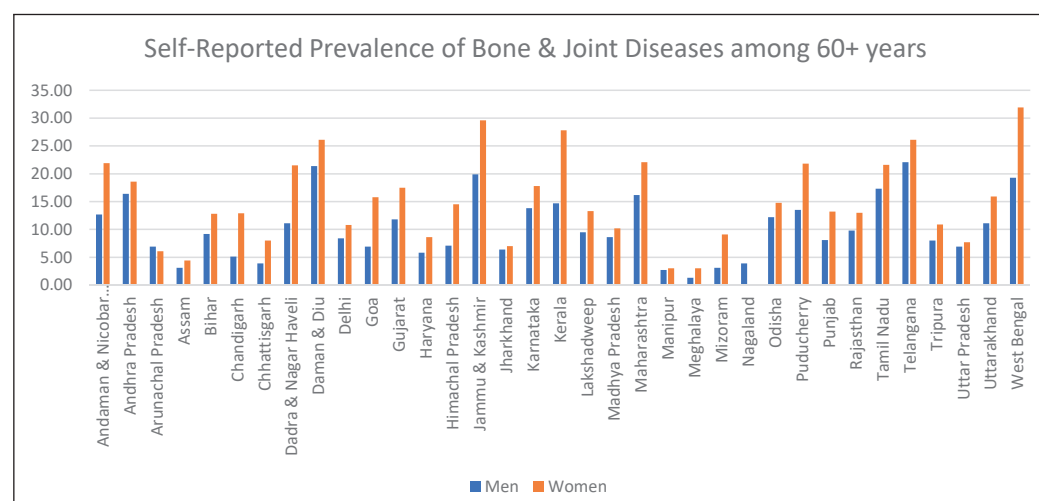
With a prevalence of 22-39 percent, osteoarthritis (OA) is among the most prevalent joint diseases and the second most prevalent rheumatologic condition in India.⁷³ While 70 percent of people over 65 display radiological signs of OA, a significant 45 percent of women experience symptoms. This is

a major contributor to impairment in mobility, subsequently also increasing the risk of obesity due to sedentary lifestyles.⁷⁴ These conditions are likely to be caused by vitamin D deficiency, swelling in joints, bone degeneration, and tumours.

LASI reports gender-disaggregated data for osteoporosis (0.9 percent for men; 1 percent for women), arthritis (9.9 percent for women; 7.1 percent for men), and bone and joint diseases (16.9 percent for women; 12.3 percent for men). Moreover, the prevalence of chronic pains was higher among women (nearly 33 percent) compared to men (almost 25 percent).

Social, demographic, environmental, lifestyle and health-related variables influence the occurrence of disorders of the bones and joints. For instance, older adults are more likely to die or suffer major injuries as a result of physical, sensory, and cognitive changes brought on by ageing.⁷⁵ Older women also reported a higher incidence of injuries and falls compared to their male counterparts. At the same time, as shown in NSS data, hospitalisation due to injuries is higher among elderly males compared to females.⁷⁶ Indeed, the difference in health treatment-seeking behaviour between men and women needs exploration.

Figure 6
Self-reported Prevalence of Bone & Joint Diseases, 60+ years



Source: LASI 2017-18

Bone or joint diseases appear to be more prevalent in elderly women than in elderly men. The highest prevalence was seen in West Bengal at 31.9 percent of older women, followed by Jammu & Kashmir, Kerala, Daman & Diu, and Telangana. The lowest was in Manipur and Meghalaya at 3 percent of older women. The biggest gaps in the prevalence rates of bone and joint diseases between elderly males and their female counterparts were recorded in Kerala (27.8 percent in elderly women; 14.7 percent in elderly men), and West Bengal (31.9 percent in elderly women; 19.3 percent for elderly men).

The Role of Social Determinants

Social determinants shape the distribution of the four main behavioural risk factors of NCDs—i.e., unhealthy diet, physical inactivity, tobacco use, and excess alcohol consumption—and three physical conditions that are risks for NCDs—raised blood pressure, obesity, and diabetes. Other social determinants of health include job environment, family and social support, and educational attainment.

This section uses sub-national data from LASI 2017-18 to examine the role of socio-demographic variables in influencing one's health.

Smoking, Tobacco Use, and Heavy Drinking

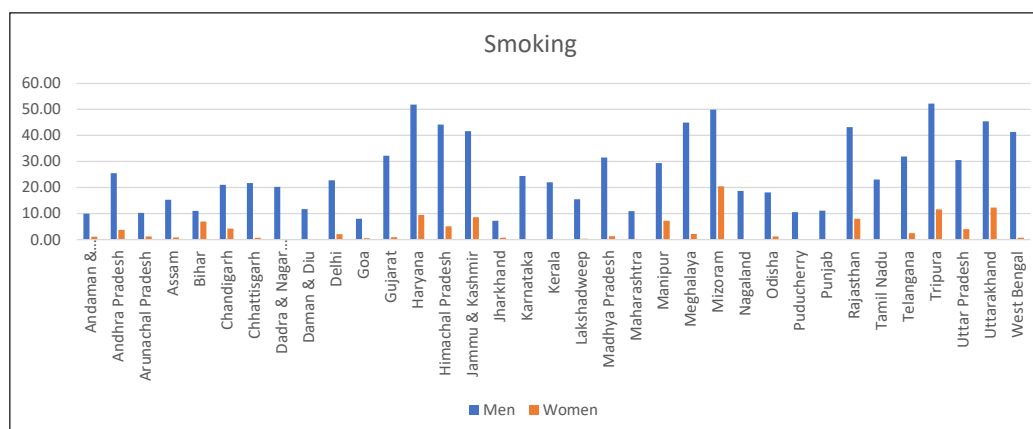
Most non-communicable diseases are caused by four specific lifestyle-related risk factors: tobacco use, physical inactivity, poor diet, and alcohol abuse. These result in four crucial metabolic and physiological changes: elevated blood pressure, overweight/obesity, elevated blood glucose, and elevated cholesterol,⁷⁷ all of which enable pathways for more adverse outcomes from NCDs. A 2016 study of the urban population in Indonesia found that women's progression towards old age resulted in a greater risk of high blood pressure, obesity, and elevated cholesterol levels, while men were more likely to be current smokers and have a propensity to have high blood pressure at a younger age.⁷⁸ A 2019 study from Thailand shows that among women, the risk of high blood pressure and high triglyceride levels are linked to a higher likelihood of heavy alcohol consumption.⁷⁹

In 2017, the Lancet Global Health reported that in low-income and lower-middle-income countries, women were more likely to chew, and men smoke.⁸⁰ While there has been a decrease in the prevalence of smokeless tobacco^c among women in India from 2009 to 2016, tobacco control efforts need to be sustained.⁸¹

A study on older adults from select Indian states found older age, women, higher socioeconomic status, tobacco and alcohol users more likely to have multimorbidity compared to those with no NCD.^{82,83} In the most visible forms, gender gap in risk factors like smoking, tobacco consumption, and heavy drinking continue to remain significantly skewed towards men, even in old age. The data further shows that gender gap in tobacco consumption trend in the north-eastern region remains minimal, almost equal, in contrast to the rest of the country.

c Smokeless tobacco includes chewing, sniffing, placing the product between the teeth and gums, or application of smokeless tobacco such as *pan*, *gutkha*, or *khaini*.

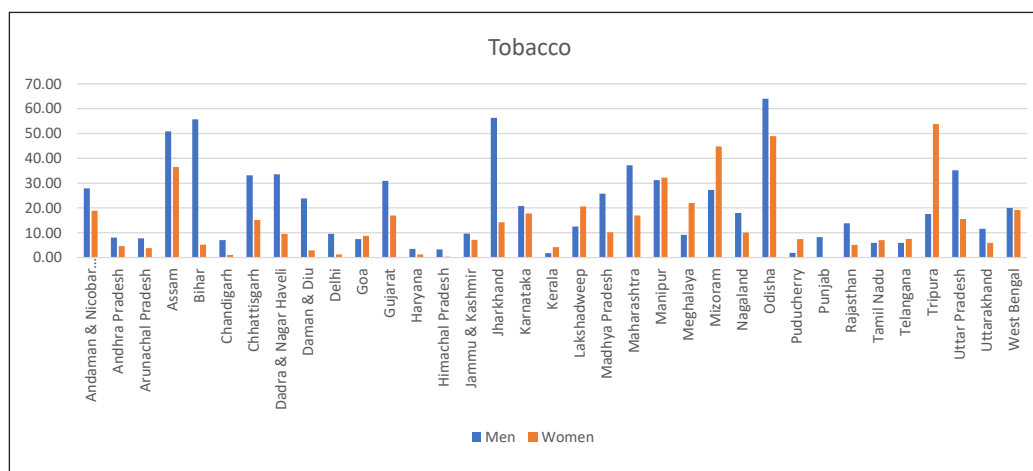
Figure 7
Prevalence of Smoking, 60+ years



Source: LASI 2017-18

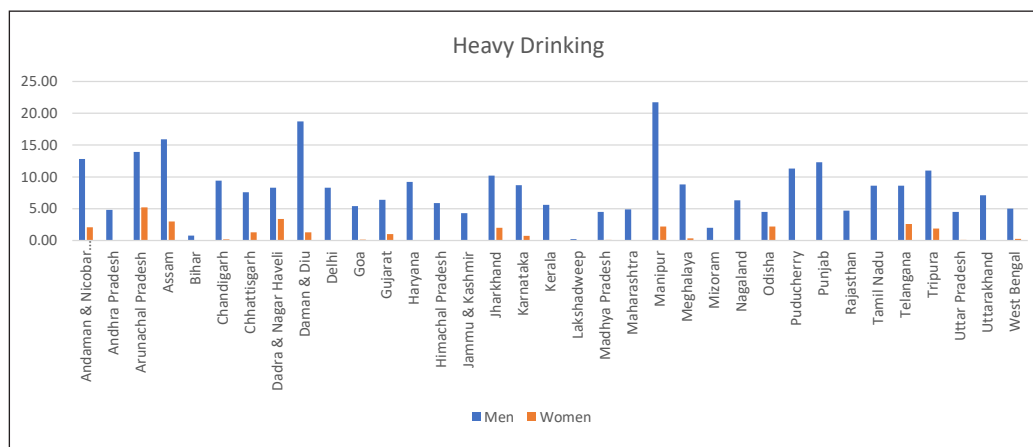
Among older adults, 25.8 percent of men smoke, compared to 2.4 percent of women. Smoking was high in the hilly and northeastern states like Mizoram, Tripura, Jammu & Kashmir, Uttarakhand, and neighbouring states of Haryana and Rajasthan. Similarly, only 0.5 percent of elderly women in India report engaging in heavy drinking, against 6.2 percent of men. Sub-nationally, no state had a higher percentage of elderly women involved in heavy drinking compared to men, but it was notably higher in the northeastern region including in the states of Arunachal Pradesh and Manipur, and the south-eastern region of Jharkhand, Telangana, and Odisha (Figure 9). Tobacco consumption was at 27.9 percent of elderly men and 13.9 percent of elderly women.

Figure 8
Prevalence of Tobacco Consumption, 60+ years



Source: LASI 2017-18

Figure 9
Prevalence of Heavy Drinking, 60+ years



Source: LASI 2017-18

The Role of Social Determinants

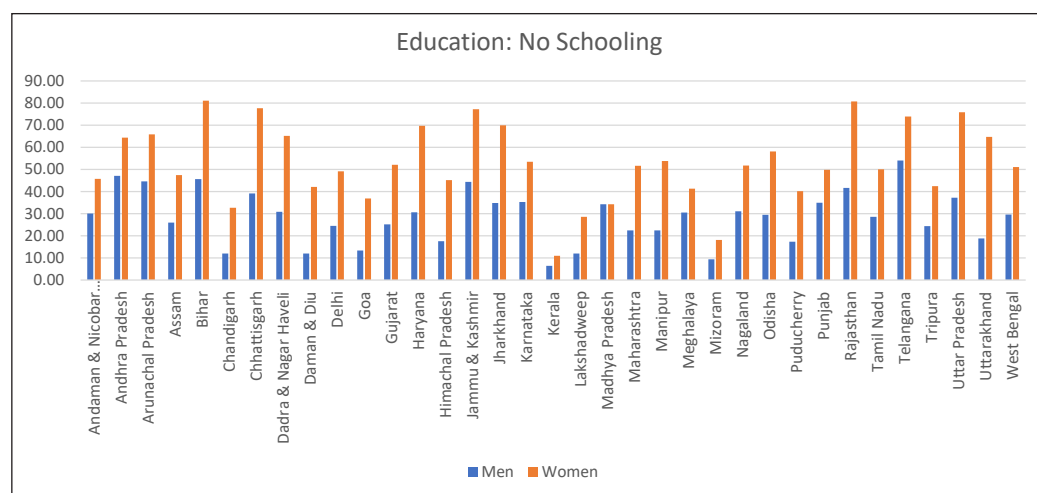
Education level

Studies among the older adults in varied countries including Sweden, India, China, and Canada have found that men are more likely to report better self-rated health compared to women.^{84,85,86,87} Meanwhile, a 2017 analysis of European countries suggested that gender differences in health status among the elderly can also be attributed to varying levels of educational attainment, among other factors.⁸⁸ In India, LASI further revealed that, among elderly women, higher levels of education are associated with lower prevalence rates of NCDs owing to greater awareness about preventive measures.

A 2011 study in Germany said that the relative risk of diabetes among women decreased with education.⁸⁹ This continues to hold true in India as well, as studies have found a correlation between lower educational levels and lack of awareness of dietary risks or requirements, and then translating to a higher prevalence of diabetes.⁹⁰ In Japan, a 2019 study of middle-aged men and women observed that, in women, the prevalence of diabetes, heart disease, stroke, hypertension, and cancer decreases with higher educational levels.⁹¹

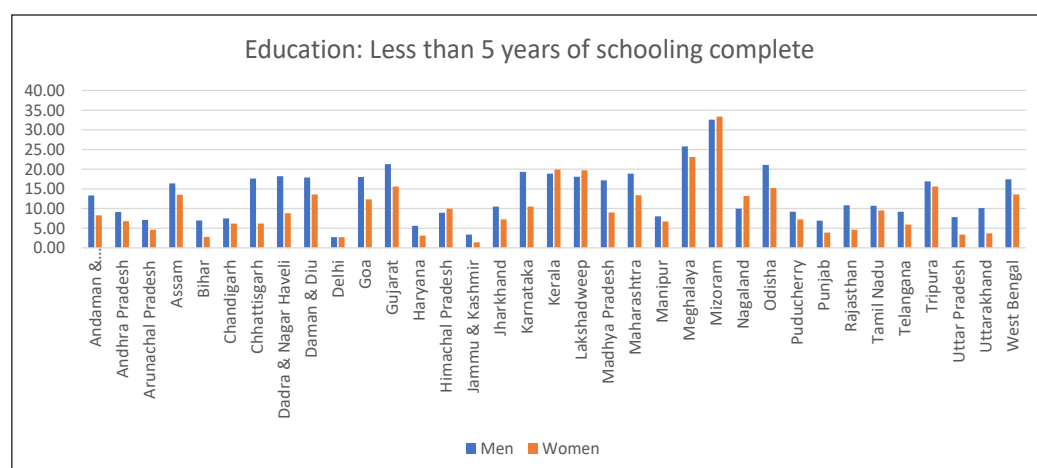
In low- and middle-income countries, there is evidence that socioeconomic circumstances have an impact on behavioural risk factors for NCDs. In India, poor overall literacy may correlate to lower health literacy. At the same time, among older adults, those in the higher-income brackets had a higher risk of hypertension and twice the risk of heart problems.⁹²

Figure 10
Education Level, 60+ years, by
Gender: No Schooling



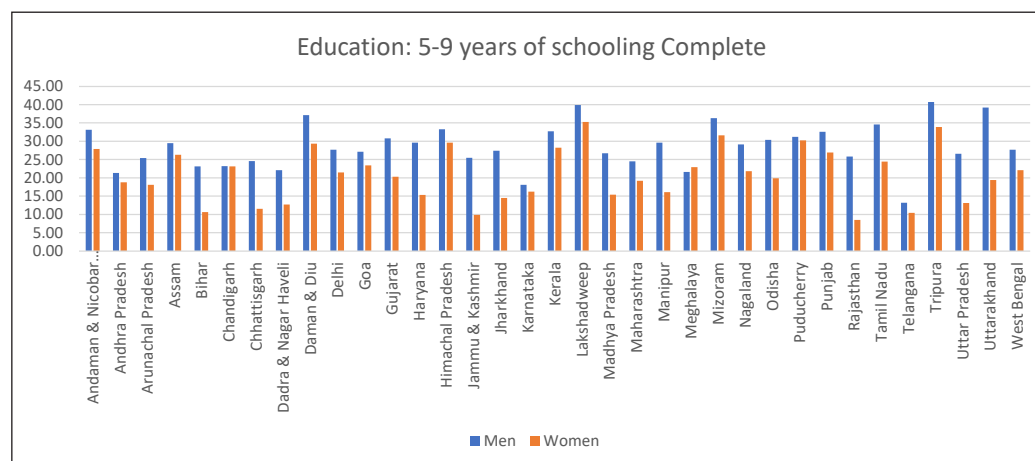
Source: LASI 2017-18

Figure 11
Education Level, 60+ years, by
Gender: Schooling < 5 Years



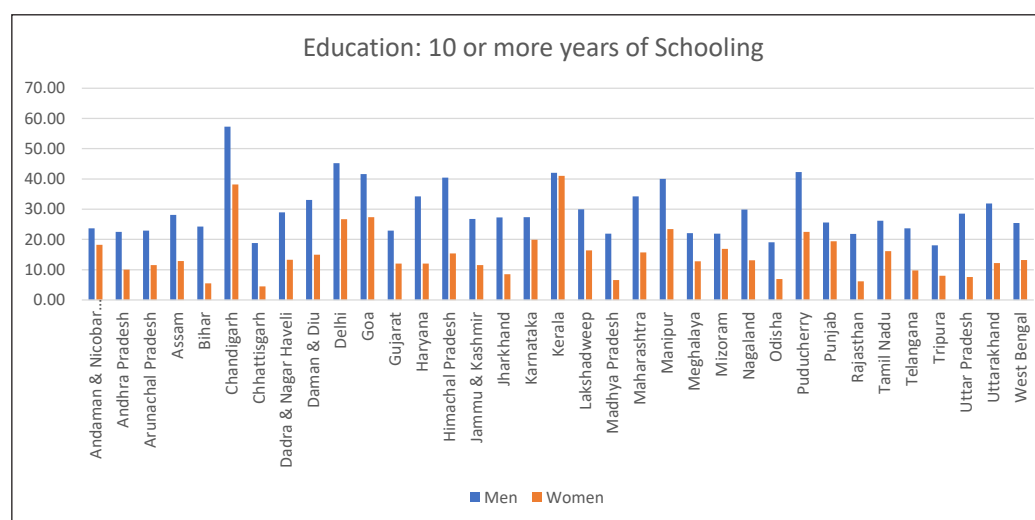
Source: LASI 2017-18

Figure 12
Education Level, 60+ years, by
Gender: 5-9 Years of Schooling



Source: LASI 2017-18

Figure 13
Education Level, 60+ years, by
Gender: 10 or More Years of Schooling



Source: LASI 2017-18

The Role of Social Determinants

Following the overall population-level trend, women have a lower education level compared to men sub-nationally. This is evident in the categories of less than 5 years, 5-9 years (Figure 12), and more than 10 years of schooling (Figure 13). The proportion of elderly women without any schooling is notably higher compared to men.

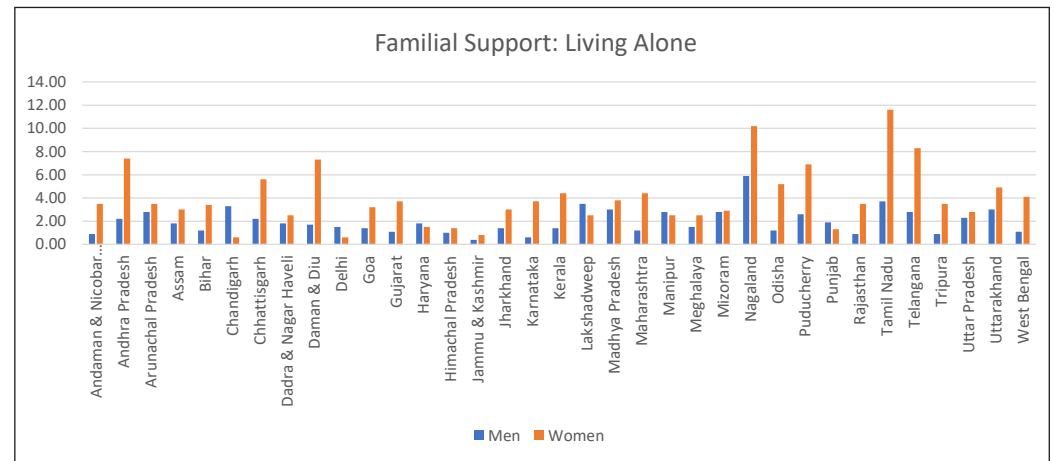
Familial Support

Social networks and families play a significant role in managing care for chronic and lifestyle diseases. Studies from China establish that self-rated health and economic status are key to the perceptions of life satisfaction among the elderly.⁹³ Sense of companionship, a good relationship with the spouse, perceived safety at home, and a supportive social network were noted to be vital in enhancing life satisfaction.⁹⁴ Older Hispanic immigrants in the United States, too, were more likely to have better self-health ratings when they were experiencing lesser functional limitations.⁹⁵ Further, support from family members, especially for diabetes, hypertension, and other NCDs, has been known to ensure adherence to medication, better detection of undiagnosed conditions, and behaviour management, which lead to better health outcomes.⁹⁶ This support also increases primary prevention of NCDs early on.

In India, families similarly remain the central unit for providing economic and caregiving support to older people. Analysis from the LASI data reveals that living with a spouse and children not only improves life satisfaction but also enables better management of existing morbidities. According to available data, 4.5 percent of elderly women live alone; the proportion for elderly men is 1.8 percent. The LASI report shows that approximately 30 percent of women above the age of 60 are widowed, compared to 10 percent of their male counterparts. This can be potentially explained by the lower life expectancy of males and the typical practice of women marrying men older than them. Widows, compared to widowers (48.5 percent vs 44.8 percent) have a higher prevalence of non-communicable multi-morbidities. This gender disparity in widowhood among the older adult population renders women particularly vulnerable as it can lead to limited inheritance rights and access to property, restrictions, and stigma in social interactions, which may consequently lead to depleted incomes and economic vulnerabilities.

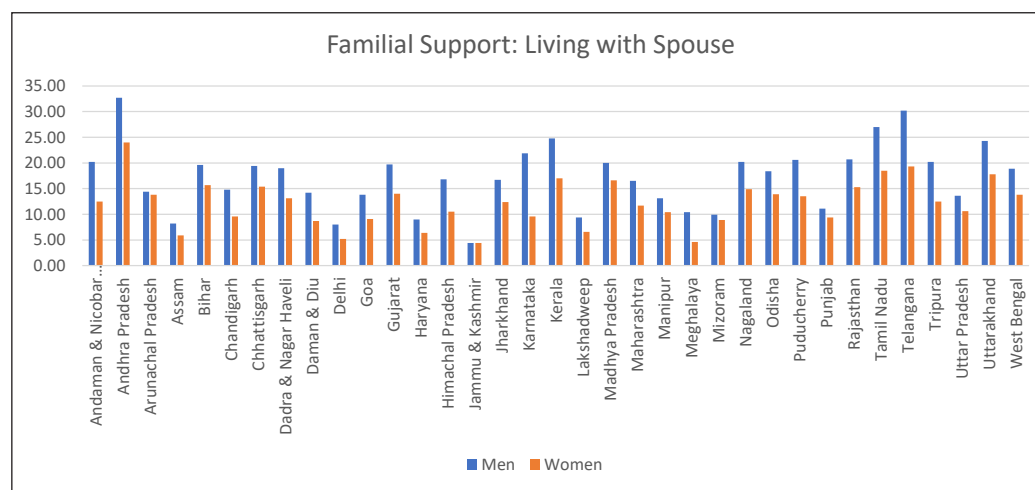
Further analyses of the LASI datasets also reported that older adults are less likely to have close friends compared to their younger counterparts. Elderly women are even less likely to report having close friendships.⁹⁷ Moreover, the dependency on children for living arrangements was significantly higher for women at 24.4 percent, compared to only 8.6 percent for men. This can be potentially explained by the lower economic status and lower wealth accumulated by women in their lifetime. Men, across all states in India, live with support from spouses and children, compared to women.

Figure 14
Living Arrangement, 60+ years, by Gender: Living Alone



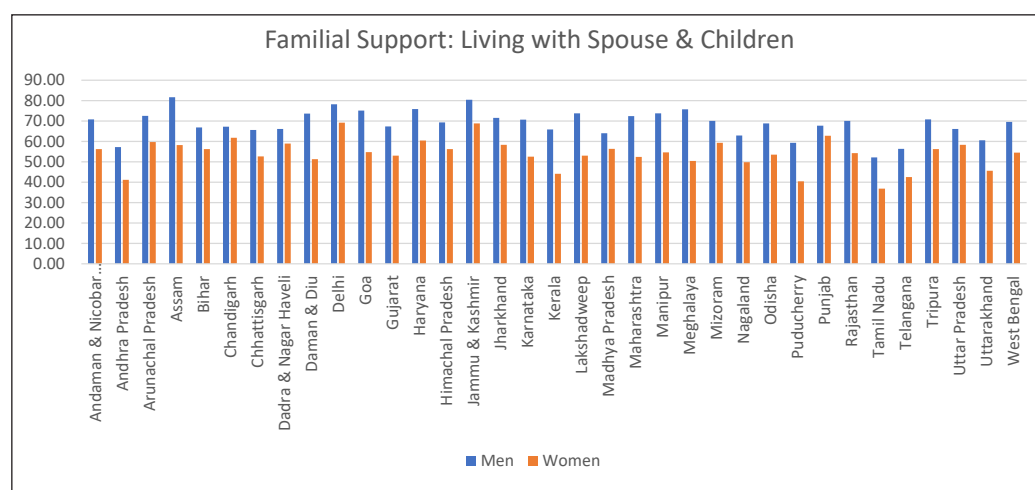
Source: LASI 2017-18

Figure 15
Living Arrangement, 60+ years, by Gender: Living with Spouse



Source: LASI 2017-18

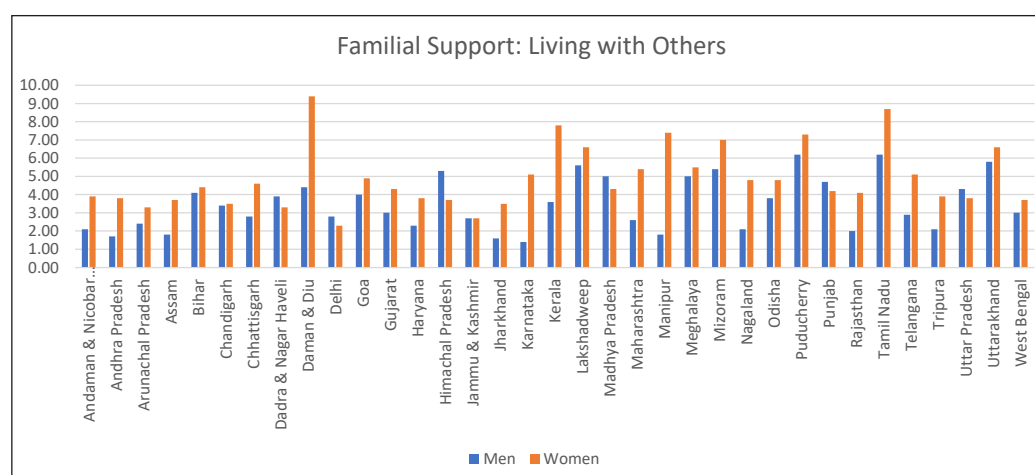
Figure 16
Living Arrangement, 60+ years, by Gender: Living with Spouse and Children



Source: LASI 2017-18

A higher percentage of elderly men than women in all states and UTs live with either their spouse or children.

Figure 17
Living Arrangement, 60+ years, by Gender: Living with Others



Source: LASI 2017-18

Figures 15, 16, and 17 show clear sub-national patterns where a higher proportion of elderly women compared to elderly men, in most states, live with others not their spouse or children. The northern states of Uttar Pradesh, Himachal Pradesh, and Punjab, Delhi, and the UT of Dadra and Nagar Haveli are the only exceptions to this trend.

Similarly, with the exception of Haryana and the neighbouring UT of Chandigarh, nowhere in India is there a higher percentage of men above 60 years living alone.

The Role of Social Determinants

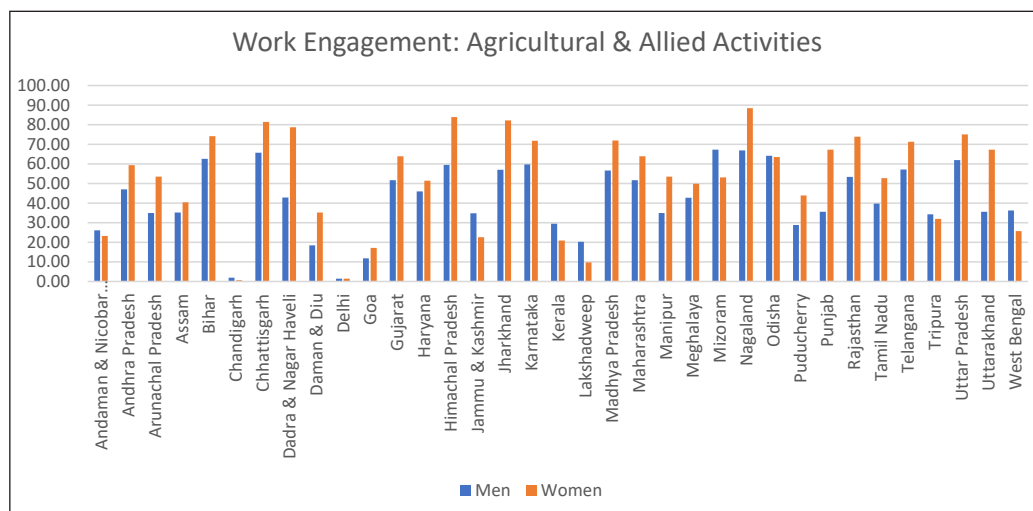
Work Engagement and Social Protection

Engagement in economic activities is known to positively impact economic and social well-being for the elderly. Not only do elderly women suffer from poorer health conditions than their male counterparts, they also have less access to healthcare services. Roy and Chaudhari (2008) in their study showed that the probability of hospitalisation is considerably lower in elderly Indian women than in men.⁹⁸ They further contend that poorer health, as well as poorer access to healthcare among elderly women as opposed to men, can be explained by gendered differences in socio-economic status; elderly women tend to have less financial independence than men. Their study also indicates that empowering the elderly in India financially would reflect equal or better health outcomes among women. Another study in a rural setting found that diabetes and hypertension were much higher in elderly women who were unemployed.⁹⁹

To the extent that the space of employment and labour is highly gendered, there exists a linkage between the nature of occupation and the burden of NCDs among elderly women. Certain arenas of work like agricultural activities are dominated by women, whereas businesses, markets, and organised sector employment has historically been dominated by men.¹⁰⁰

The national level data shows that 62.6 percent of women compared to 51.7 percent of men are engaged in agricultural and allied activities. The mean monthly individual income generated by men is INR 6,157, compared to a far lower INR 3,840 for women. This significant parity is visible for the categories of non-agricultural business activities (INR 10,513 for men vs INR 5,225 for women) and wage and salary workers (INR 13,338 for men vs INR 7,514 for women) as well.

Figure 18
Work Engagement, 60+ years,
by Gender: Agriculture & Allied
Activities

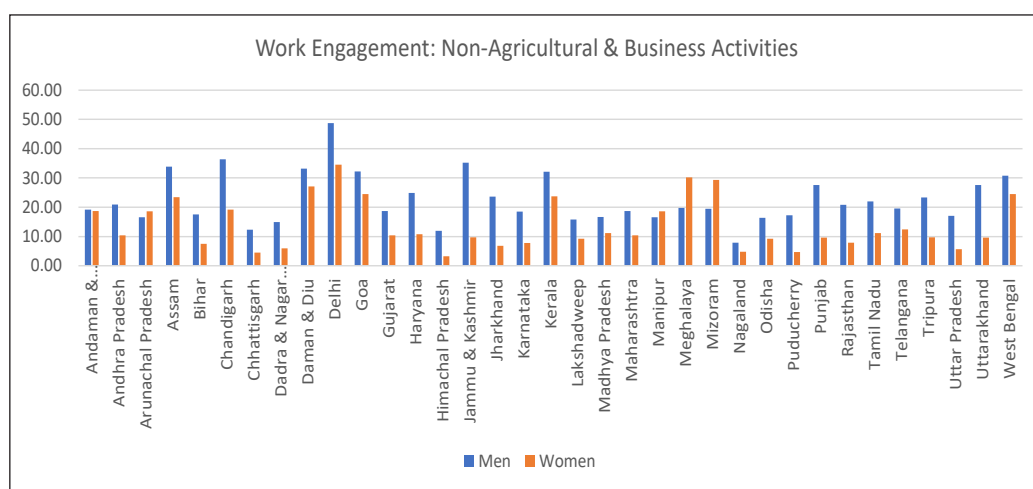


Note: Agricultural work includes cropping, forestry, livestock & fishery, working for own or family's or for other people's farm/ fishery/ forestry.

Source: LASI 2017-18

As seen in Figure 18, in a general trend across the country, women are more represented in unorganised sectors, especially in agricultural and allied activities which are considered an extension of their domestic duties. The exceptions are Kerala, West Bengal, and Mizoram, along with the islands of Andamans and Lakshadweep, and hyper-urban geographies of Delhi and Chandigarh. This sporadic distribution needs further investigation.

Figure 19
Work Engagement, 60+ years, by Gender: Non-agriculture & Business Activities



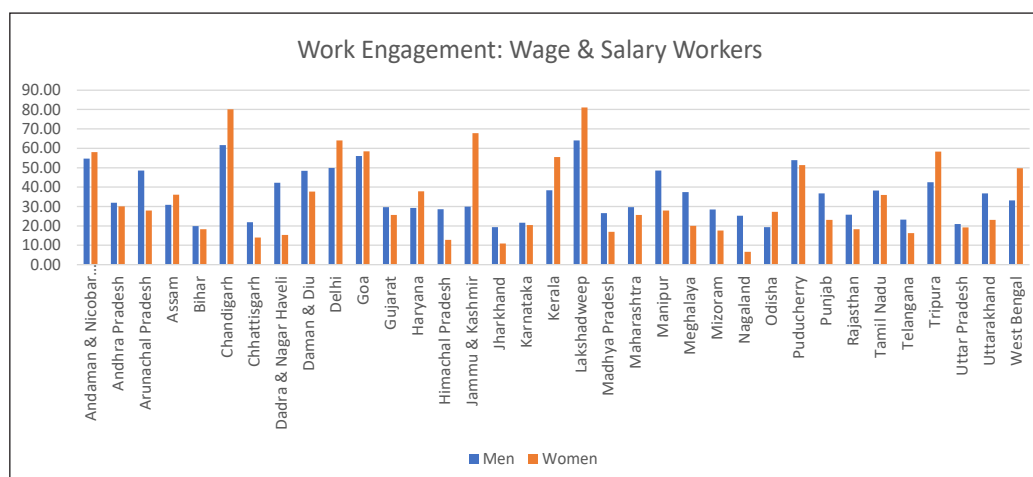
Note: Non-agricultural business activities include own account worker, i.e., self-employed without employees or non-agricultural business owners.

Source: LASI 2017-18

In contrast to agricultural activities, business-related work (Figure 19) is dominated by men in almost all states. Historical under-representation, lower market penetration, and poor financial literacy are some of the key reasons that prevent women from participating in business activities. The northeastern states of Meghalaya, Mizoram, Manipur, and Arunachal Pradesh are the only states exhibiting contrary trends in economic engagements for elderly women.

Among the elderly in India, access to employer insurance and pension schemes is available to a mere 9 percent of rural males and 41.9 percent of males in the formal sector in urban areas. It is still lower among females—3.9 percent in rural areas and 38.5 percent in urban areas. The remainder of the workforce comprise casual or self-employed workers, who have no access to retirement or healthcare benefits.¹⁰¹

Figure 20
Work Engagement, 60+ years, by Gender: Wage & Salary workers



Note: Wage & salary work includes full-time, part-time, contract-based, temporary, or seasonal employment

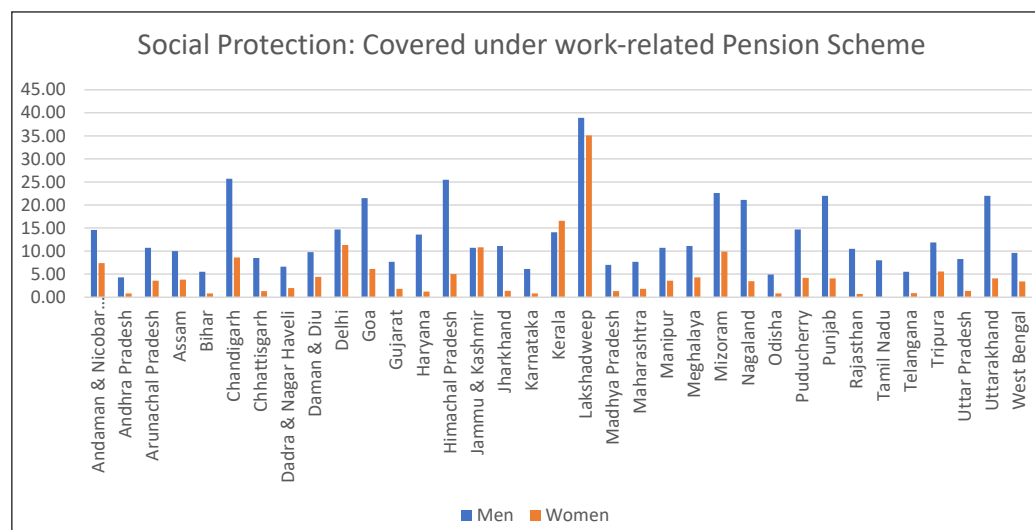
Source: LASI 2017-18

LASI data indicates that only 1.9 percent of elderly women, compared to 8.4 percent of elderly men were covered by work-related pension schemes. Apart from Kerala, all states have a significantly lower proportion of women retiring out of the organised sector (Figure 21). The provident fund coverage, too, is 2.8 percent for women compared to 7.3 percent for men at the national level.¹⁰²

Social protection mechanisms play a significant role in preventing catastrophic health outcomes as a consequence of high out-of-pocket expenditures or lack of welfare or monetary protection such as health insurance. Data from LASI points out that only 3.2 percent of elderly women used health insurance to finance their latest hospitalisation, compared to nearly double of elderly men despite near equal insurance coverage. While this can be potentially explained by poor financial literacy and lower organised sector jobs among women, it will need further exploration. Further, statistical analysis of LASI data found that individuals with health insurance were also at a higher risk of multi-morbidities. With each additional morbidity, out-of-pocket expenditure also increased.¹⁰³

Figure 21

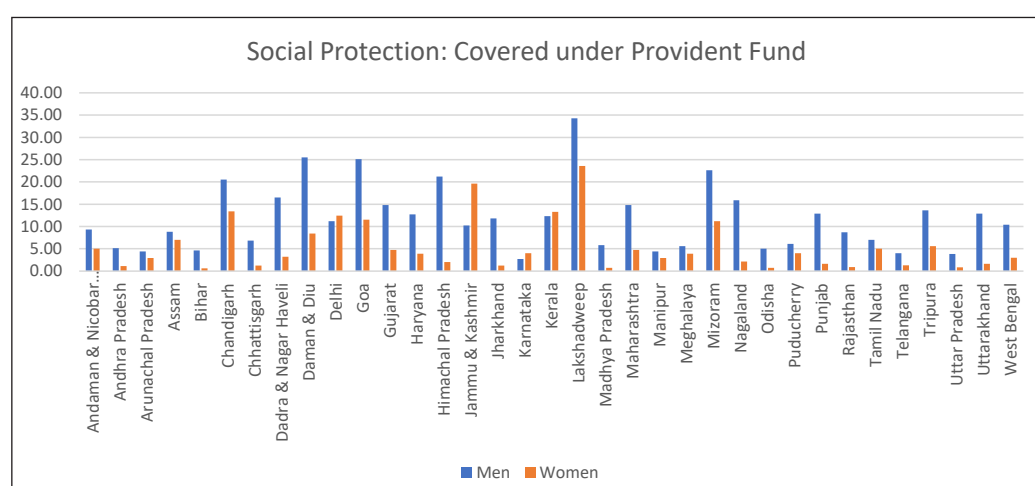
Social Protection Coverage, 60+ years, by Gender: Work-related Pension Scheme



Source: LASI 2017-18

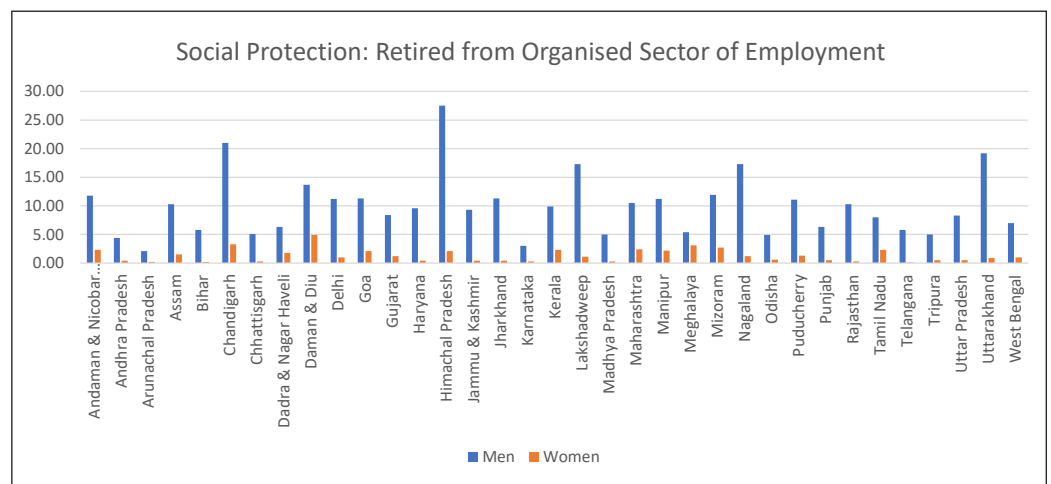
Figure 22

Social Protection Coverage, 60+ years, by Gender: Provident Fund



Source: LASI 2017-18

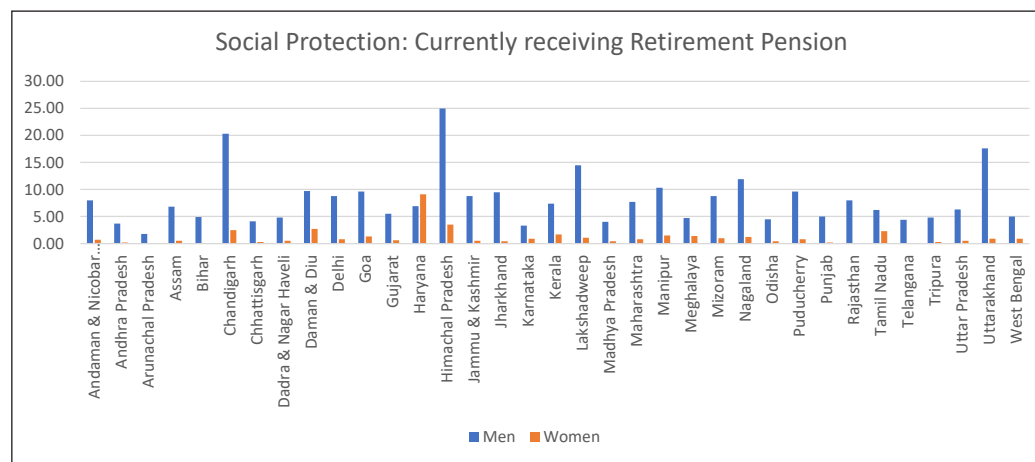
Figure 23
Social Protection Coverage, 60+ years, by Gender: Retired from Organised Sector



Source: LASI 2017-18

As seen in Figure 23, the representation of women in the workforce remains dismal at the age of retirement. The data indicates that except for Haryana (Figure 24), elderly women are barely receiving any retirement pension.

Figure 24
Social Protection Coverage, 60+ years, by Gender: Currently Receiving Retirement Pension



Source: LASI 2017-18

Overall, it can be seen that social protection is notably higher in smaller states and UTs. The northern, eastern, and central Indian states have performed poorly in this criterion.

The Impact of COVID-19

The first wave of the COVID-19 outbreak in India saw a higher mortality risk amongst the older population, especially in those with pre-existing comorbidities and requiring special care in case of infections.¹⁰⁴ Evidence from 2020 indicated that elderly males had a higher overall burden, but elderly females had a higher relative risk of COVID-19 mortality.¹⁰⁵

Studies from 16 countries revealed that persons aged 65 or older had remarkably higher mortality rates from COVID-19 compared to younger individuals.¹⁰⁶ Further, men had a higher risk of COVID-19 death than women. Countries like Colombia and Chile had as high as 86 percent of all deaths amongst the elderly.¹⁰⁷ Seventy percent of Peru's deaths are accounted for by the older adult population 60 and above.

While the proportion of elderly in India is comparatively lower than in other developed nations, structural flaws and poor social protection leave them vulnerable. There is relatively lesser financial aid allotted to their care, limited geriatric health infrastructure, and scarcity of outreach activities. Nearly 70 percent of the elderly population depend on others for their day-to-day needs as per the NSS analysis from 2017–18.¹⁰⁸ In crises like the COVID-19 pandemic, they are bereft of social connections and care. Their stresses are amplified by their limited fluency in digital tools, which are being utilised in response measures to health emergencies.

Another concern was the far-reaching vaccine hesitancy among the elderly in India. In Tamil Nadu, for instance, 27.6 percent of the older adult population were not willing to be vaccinated against COVID-19.^{109,110} The hesitancy was found to be higher amongst the elderly men. Nagaland, another state that grappled with hesitancy and misinformation, had the country's lowest first-dose coverage of the vaccine in 2021. The poor acceptance of vaccines is more pronounced in the 45+ years age bracket and in districts of high illiteracy.¹¹¹

A critical public health concern among the older population is NCDs with comorbid mental disorders.¹¹² Available evidence indicates that mental disorders pose a risk for the emergence of other NCDs.^{113,114} In addition to alcohol and tobacco use, patients with mental disorders frequently have poor eating habits and low levels of physical activity, all of which increase their risk of developing medical comorbidities, including coronary artery disease, stroke, and cancer, as well as obesity, hypertension, and metabolic syndrome.¹¹⁵

Recommendations and Conclusion

This paper attempted to present a holistic and in-depth literature review on the incidence and risk of NCDs among the elderly. It sought to highlight the gendered impact of ageing in biological, sociological, and economic terms. This necessitates that policies push gender to the mainstream of health systems response to combatting NCDs in the country. Further, age remains a key hindrance to the accessibility of health services. To promote healthy ageing, it is vital to concentrate on preventive strategies that postpone the onset and stop the progression of NCDs. It is crucial that geriatric and long-term care is incorporated into the health system to ensure continuity of care and necessary gender-budgetary considerations be integrated into national plans.

Recommendations

- Targeted interventions are needed to tackle gender inequalities within healthcare systems and create gender- and age-sensitive policies with a special focus on the needs and use-trends of the elderly.
- Taking cognisance of the population-level trends of non-communicable diseases in the elderly, there should be renewed attention to improving health education and awareness along with preventive regular health checkups and screenings. Creating awareness of physical and mental well-being and regular screenings for these diseases can enable early prevention and detection, and better management.
- As the elderly population is growing, there is a need for workforce capacity building for healthcare professionals in dealing with the needs of the elderly.
- Collaboration and partnership between government agencies, non-government organisations, healthcare providers, and community-based organisations should be prioritised to create a holistic approach to addressing gendered NCD prevalence among the elderly. 

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