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Is Financial Dependency Shaping the Chronic Morbidities among the Elderly in India: Insights from Selected States?

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ABSTRACT

Using data from the Building Knowledge Base on Population Ageing in India (BKPAI), this paper tests the hypothesis whether financial accessibility improves the health of the elderly in India. Financial accessibility is measured using a source of income, while the health of the elderly is measured by chronic morbidity, financial access and utilization of health care among the elderly. This paper contributes to understanding the differential in financial accessibility by source of income. The results suggest that its level reduces the risk of ill health among the elderly. The old with disposable money in hand were less at risk. Underlying factors such as education, living arrangement and income were closely associated with shaping the level of chronic morbidity among the elderly in India. The risk of chronic morbidities increases with increase in age ($p<0.0001$). The type of residence (for instance, urban) was found to be reducing arthritis, while, it was a multiplying factor for hypertension among the grey population.

INTRODUCTION

Fertility transition and increase in longevity has been universal across countries and among regions within countries. While the gap in survival across countries has narrowed (leading to mortality convergence), the pace of fertility reduction varies to a large extent. By 2014, the gap in life expectancy at birth was 13 years (79 years in developed countries and 66 years in developing countries). The increase in longevity has been experienced across all age groups - 16 years at age 60 in developing countries and 20 years in developed countries (WHO, 2014). The reduction in fertility and increase in longevity has altered the age-structure of many developing countries significantly leading to increase in the size and share of the elderly population. The growth rate of the elderly population is more than twice that of the overall population. Recent demographic trends suggest that the older population will account for 21.1 percent (2 billion) of the population by 2050 (United Nations, 2013). The changing demographics have several implications on economy and society. Unlike that in developed countries, the social security system in many developing countries is in its infancy or non-existent on the one hand, and the health care system has not been tailored to meet the medical needs of the population on the other.

The elderly population in India in 2011 accounted for 103.9 million (total population being 1210.9 million) and was projected at 126 million by 2030 (MoSPI, 2016; UNFPA and International, 2012; United Nations, 2011). The annual growth of the elderly population (2001-11) was twice the rate of increase of the overall population (United Nations, 2001). India has a distinct family culture system. Such a distinct cultural system provides a strong family bond that creates an informal family-based old-age system, and, in turn, old-age economic support, which comes from family. However, this support is gradually diminishing (Lindqvist *et al.,* 2001; Sadhak, 2013). These changes have impacted the social security and pension reforms. However, with little or low income, only 11 percent of the labour force is covered under the formal pension system (Sadhak, 2013). The poverty level among the elderly living in the rural areas is the highest. The per capita health spending among elderly households is three times greater than that in households without the elderly (Mohanty *et al.,* 2014).

Non-Communicable Diseases (NCDs) are now the leading cause of death primarily affecting older adults in India (Salomon *et al.,* 2012) and the NCDs are highest in the 60-75 year age group. Studies suggest that the severe risk of chronic morbidity among the elderly is set to increase sharply (Sousa *et al.,* 2009). It has been projected that between 2010 and 2050, the elderly population aged 60 years and above will increase by 224 percent in developing regions (from 8.6% to 20.2% of the total population). In 2004, 68 percent of the 751 million worldwide lived with disability (YLD), which can be attributed to chronic non-communicable diseases, and it was found that the major proportion (84%) of such cases arose due to chronic diseases in countries with low and middle incomes. Although the level of most chronic diseases is reportedly age dependent, 23 percent of such disability caused among people aged 60 years and older was due to chronic illnesses (Sousa *et al.,* 2009). The prevalence of non-communicable chronic morbidities is high in the South Asian community (Mishra, 2003; Siegel *et al.,* 2014). Some studies report the high correlation between conventional living arrangements and economic vulnerability among the elderly (Lloyd-Sherlock, 2000; Mohanty and Sinha, 2010). In India, only in 20 percent of the households people live in joint or extended families (Lindqvist *et al.,* 2001), whereas, more than 40 percent of women, aged 65 and older, live alone in some European countries (Ytterstad, 1996). The culture of seniors living with children is becoming less common. Almost 15 million elderly Indian live alone and about three-fourths of them are women. According to the recent Census, out of the 250 million households in India, 31.3 percent (32.5% in rural and 29% in urban areas) have at least one elderly person (Nagarajan, 2014). Therefore, in such a condition when the growth rate of the elderly population is much higher (3 percent) than the rate of increase of the average population (1.8 percent), there is an urge to think about the financial needs of the grey population.

ELDER HEALTH

The changing age structure has several implications for elder health. Studies suggest a strong association between age structure and incidence of disease, with chronic disease as one of the primary threats in south-east Asia (Marianne *et al.,* 2010), especially to the elderly. Lubitz *et al.* have elaborated on the differences in health status between genders in some countries. The studies report that there was a significant difference in the health status of the elderly. The actual years in a functional state for the female elderly were significantly lower than those of their counterparts. The health situation in this context not only implies functional life expectancy but also health spending. Elderly men had higher health spending per year but lower total expenditure (Lubitz *et al.,* 2003). Additionally, women tend to live longer than men but spend more time in a disabled condition (Lubitz *et al.,* 2003; Schellhorn *et al.,* 2000; Senanayake, 2000; South-Paul, 2001; Strauss *et al.,* 1993). Ultimately, it causes women to have increased attention for morbidities. The present findings on health measures among the elderly in developing countries are limited when compared to those in developed countries. However, earlier studies reported that more than 50 percent of the elderly in India suffer from one or more chronic conditions (Agrawal, 2016; Ingle and Nath, 2008; Joshi *et al.,* 2003; Shah and Prabhakar, 1997).

ANALYTICAL FRAMEWORK

Socio-economic Status and Elderly Health

Chronic morbidity among the older elderly was variously influenced by demographic and economic factors (Albanese *et al.,* 2011; Grundy and Sloggett, 2003; Peltzer *et al.,* 2014; Redondo-Sendino *et al.,* 2006; Roy and Chaudhuri, 2008). Murphy and Martikainen have shown a significant association between cohabitation with the partner and its positive influence on health (Murphy and Martikainen, 2010), while educational attainment was negatively associated with health care needs (Karlsson *et al.,* 2009). The relative strength of factors such as cohabitation and educational attainment remains an issue of debate (Gravelle and Sutton, 2009). However, there may be additional contextual factors related to the neighbourhood in which the individual lives that affect their health (Wong and Díaz, 2007).

Economic status has been shown to be an important factor associated with chronic illness. Studies report that the income available to an elderly person was significantly associated with such chronic diseases (Agborsangaya *et al.,* 2012; Barnett *et al.,* 2012; Schäfer *et al.,* 2012). Studies in other nations reported that the presence of chronic morbidity was lower among the elderly with a higher income (Marengoni *et al.,* 2011).

Financial capability, defined as income of the elderly, which may come from salary/wages, pension, rental income, business income, agricultural income, remittances, interest on savings and fixed deposits was a critical economic variable in any population. In terms of money, financially capable elders are those who are not dependent on others for their basic needs. A number of studies have addressed the living arrangement, socio-economic correlates and prevalence of diseases among the elderly (Agborsangaya *et al.,* 2012; Barnett *et al.,* 2012; Joshi *et al.,* 2003; Marengoni *et al.,* 2011; Purty *et al.,* 2006; Schäfer *et al.,* 2012; Tucker-Seeley *et al.,* 2011), while, studies that link financial accessibility with chronic morbidity and health care are limited in India. This paper examines the extent to which the elderly in India have access to finance and its linkage with health and health care utilisation. This paper adds to the existing literature in two ways. First, it examines the prevalence of medically identified chronic morbidity among the elderly by financial access. Second, it examines the

correlates of chronic morbidity among the elderly who had financial access or at least a source of income on their own using the comparative risk assessment approach.

STUDY POPULATION

We have used unit data from an in-depth survey entitled Building Knowledge Base on Population Ageing in India (BKPAI) conducted in 2011 by the United Nations Population Fund and its two collaborating institutions - Institute for Social and Economic Change and Institute of Economic Growth. The survey covered a total of 8,329 households and 9,852 elderlies in seven major states of India (selected by speedier ageing and relatively higher proportions of the elderly population), namely, Himachal Pradesh, Punjab, West Bengal, Odisha, Maharashtra, Kerala and Tamil Nadu. The survey gathered household and individual information on demographics, consumption expenditure of households, details of morbidity and heath care spending. The particulars of the study design and preliminary findings are available in the national report (UNFPA, 2013).

VARIABLES

Dependent Variable

Chronic morbidities such as arthritis, angina, diabetes, asthma, and hypertension are the dependent variables in the analyses. We limit our analysis to chronic conditions such as arthritis, angina, diabetes, asthma, and hypertension whose prevalence was higher than 5 percent of the study population. The health care utilisation of each of these variables was used as a dependent variable. The variables have been categorized as –zero versus one chronic condition, being arthritis, angina, diabetes, asthma, and hypertension. The health status regarding chronic morbidity was elicited by asking the elderly “Has a doctor ever told you that you have any such ailment?”

Independent Variables

The financially abled old can be defined as persons who were 60+ with some source of disposable income or who were engaged in paid work. We measure the financial accessibility to seven variables - namely, salary/wages, pension from government/old age/widow/mutual funds, rental income, business income/agriculture/farm income, returns from shares/bonds, remittances, interest on savings/fixed deposits. The information on financial accessibility was recoded in binary. For instance, if the elderly had any one was recoded as (=1; 0 if otherwise). The set of other independent variables are caste (Scheduled Tribe (ST)/Scheduled Caste (SC), Other Backward Castes (OBC), and Others), living status (living alone, not living alone), living arrangement (comfortable, satisfactory, uncomfortable), education (primary, higher, and higher secondary), religion (Hindu, Muslim, others), place of residence (rural and urban), ordered quintiles of relative wealth, sex (male and female).

Method

Descriptive statistics, bivariate analyses and logistic regression have been used in the analyses. The predicted probability as a post-estimation of logit model was estimated based on the prevalence of chronic morbidity higher than five percent among the elderly in selected states of India. The morbidity (=1 if yes, 0=otherwise) among the elderly was measured based on the predicted probability in two groups of elderly by financial accessibility. All the analysis presents 95 percent confidence interval.

RESULTS

Here, we compare the essential characteristics of those with financial access with those who do not have financial access. The average age (68 years) of the population was similar for both categories, that is, elderly with financial accessibility (EFA) and elderly with no financial accessibility (ENFA). The educational attainment among EFA was higher than that among ENFA in India. The annual income was higher among ENFA (₹ 121488) elderly compared to their counterparts from EFA (₹ 41973) (Table 1).

Two Arguments: Financial Accessibility Linked to Social Well-being

Table 2 presents the differentials in financial accessibility by socio-demographic and economic characteristics. The differentials are significant with educational level if the elderly differ with the state, place of residence, caste and religion. By level of education, about 81 percent of elders without higher secondary education had financial access compared to 58 percent of elders with upper secondary education. Nearly 75 percent of the elderly living alone had financial access compared to 56 percent of those not living alone. Financial accessibility among older persons as a predictor was significantly associated, and it was found to shape comfortable living arrangements among the elderly. Financial accessibility was positively related to comfortable living arrangements. In other words, the elderly without financial access had uncomfortable living arrangements. By living arrangements, 52 percent of the elderly with uncomfortable living arrangements had financial access compared to 59 percent of the elderly with comfortable living arrangements. The association between place of residence and financial access among the elderly in India reveals that the old residing in rural regions had greater financial access compared to their urban counterparts. It is important to mention that financial access was more prominent among disadvantaged groups such as those with primary education, rural, and living alone elderly. It may be because of increased work participation. For instance, the old with lower education do not have a permanent source of income (like government services) and are reportedly engaged in unorganized sectors, and therefore, a higher level employment was reported among them. The analysis (Table not shown here) indicates that the elderly with lower education, rural residence and living alone participated more in the workforce.

Education sharpens the potential of human capital (Lutz *et al.,* 2014; Raushan and Raushan, 2014). This argument is also applicable at later ages. The association between education and financial access showed that elders with higher education had greater financial access. Additionally, its assessment with work choice indicates that the percentage of elderly with secondary school education and above did not have any source of income. The work choice was categorised as 1= economic need or compulsion; 0= otherwise. Therefore, the elderly with secondary education and more might have had other sources of income such as pension, mutual funds and returns from shares, dividends, bonds or interest on savings and fixed deposits and, in turn, they were potentially able to fulfil their basic needs. Thus, work choice was not because of compulsion, while in the case

of the elderly with primary or lower education, the work option may have been because of pressure (Table not shown here).

Better Economy at the Household Level Shapes Satisfying Life at a Later Age

Table 3 presents the monthly per capita consumer expenditure (MPCE) of those who had financial access and those who did not. The MPCE was taken as a proxy for the household economy (Table 3). The MPCE among elders with financial access was significantly higher for all age groups. The MPCE was highest amongst the elderly in the age group 60-65 with no financial access, while it was highest among those in the age group 75-80, with financial access ($p<0.001$). The highest MPCE (₹ 2029) was reported to be among other caste groups, while it was lowest among SCs/STs. Among the elderly with upper secondary education, the MPCE of a household was higher, whereas, it was lower among the elderly with little education. By living arrangement, the MPCE was statistically significantly lower among elders with no financial access compared to the old with financial access ($p<0.001$) and, it further decreased when their living arrangement moved from satisfactory to uncomfortable. The MPCE was ₹2072/-among elders with no financial access compared to ₹ 2389/- among elders with financial access. Contrastingly, the association of financial access and living arrangement was statistically significantly as it lowered the MPCE and it reached about ₹ 1000/- among the elderly with uncomfortable living arrangements compared to ₹ 2389/- among the elderly with financial access and living comfortably. The assessment of independent variables such as education, and place of residence showed a similar pattern. The disadvantaged old sharing characteristics such as lower education and residing in a rural region had lower MPCE than their elderly counterparts with higher education and living in urban areas respectively. MPCE was significantly greater among those elderly with financial access compared to those without. The per capita consumption expenditure older with financial access and those without financial access was highest in Himachal Pradesh followed (₹385) by West Bengal (₹329) and Kerala (₹284) respectively.

The prevalence of chronic morbidity was very high among the elderly with no financial access. At age 75 years, nearly 5 percent of the less elderly were reporting chronic morbidity when they were financially capable (12%) compared to those were not (17%) (Table 4). The episodes of morbidity in the fifteen days preceding the survey were comparatively more prevalent among the elderly with little education (16%) than among those who were highly educated (3%) when they were financially in need. The study claimed that, among the elderly with financial access, the prevalence of morbidity for the fifteen days preceding the survey was marginally lower (13%). The ethnicity belongingness and financial weakness were also found to shape morbidity distribution among the elderly in India. The morbidities during the fifteen days preceding the survey were higher among SCs/ STs. Financial accessibility among the elderly was proved as a reducing factor for chronic morbidity in the last 365 days before the survey for the elderly who were 80+. Uncomfortable living arrangements, little education, and work choice because of economic need were risk inducing factors, which became more problematic when they interacted with financial vacuum among the elderly.

Income as a Significant Predictor for Health Problems that required Hospitalisation

This paper also deals with the old suffering with a major health issue requiring hospitalisation (Table 4). There was a statistically significantly positive association between age and health problems that required hospitalisation. Nearly 18 percent and 23 percent of those elderly who were 60+ and 80+ years respectively faced health problems that required hospitalisation. This percentage decreased across all ages when the elderly had financial access except for those aged 80+. The findings revealed that 6 percent of the elderly in the age group 70-80 years, who had financial access, reported major health problems that required hospitalization. Among those who were 70-75 years old, 25 percent with no financial access as against 19 percent with financial access suffered from

major health problems that required hospitalization. Thus, major health problems that required hospitalisation were found more amongst the oldest old when they were financially capable ($p<0.001$). The findings suggest that as the living arrangement shifted from comfortable to uncomfortable, the percentage of elderly with major health problems increased markedly. An assessment of living arrangements and financial accessibility revealed that among the elderly with financial access, the less aged experienced health issues that required hospitalisation compared to the elderly without financial access. For instance, about 21 percent of the elderly with financial access suffered from major health problems that required hospitalization compared to 24 percent among those elderly without financial access in India ($p<0.001$). Covariates such as higher education and urban dwelling were less associated with nature in this context showing marginal differences by financial access, while the elderly with lower education and living in rural areas were at increased risk.

However, schooling during the early years seemed to work as catalyst at a later age in understanding the association between health and financial accessibility, as the elderly with higher secondary education were less at risk of having significant health problems that required hospitalisation. The study reports that among the elderly with primary education, 22 percent had financial access compared to 26 percent with no financial access. Twenty-six percent of the elderly with primary education among the financially disabled reported having had major health problems that required hospitalisation compared to 11 percent of elderly with higher secondary education. Twenty-two percent of the more elderly from rural regions had health problems compared to 18 percent of their counterparts from the urban areas ($p<0.001$).

Results of Logistic Regression

The results of logistic regression were presented in terms of predicted probability. The study (Table 5) reports the predicted probability of chronic morbidity among the elderly (morbidity with prevalence higher than 5 %) in India. Chronic morbidity such as arthritis, angina, diabetes, asthma, hypertension during the 365 days prior to the survey was assessed for the purpose. Arthritis was reportedly higher among the elderly in India. The predicted probability of an elderly in India to have had arthritis was 24 percent among those without financial access compared to 21 percent elderly with financial access. Increasing age was one of the accelerating factors for arthritis and the other four chronic diseases. The probability of having arthritis was about 27 percent when the living arrangements of elderly were uncomfortable but it was less than 20 percent among the elderly whose living arrangements were comfortable ($p<0.001$). The probability to suffer from all the aforesaid chronic morbidities was almost equally likely in rural and urban regions. The females (27%) were more at risk of suffering from arthritis and hypertension than their male counterparts (20%). The household's economic condition was found to be an important predictor in shaping the chronic morbidities at later ages in India. The risk to have angina among the richest was about 12 percent, while it was about 8 percent among the older belonging to the middle wealth quintile. A similar association was observed in the case of diabetes and hypertension. Keeping other factors controlled, the probability of suffering with diabetes was 25 percent and 38 percent hypertension among the richest, but it was 13 percent and 22 percent among the poorer elderly respectively ($p<0.001$). By state differential on chronic morbidity, the probability of hypertension among was found to be highest in Kerala (41%) followed by Punjab (34%) and West-Bengal (26%). The risk of arthritis (40%) among the elderly was highest in Punjab; while, it was angina (17%), diabetes (30%), asthma (15%) and hypertension (41%) in Kerala ($p<0.01$). The risk of suffering with chronic morbidities was lesser among the elderly with financial access compared to their counterpart (reference category). The risk of arthritis was 21 percent among those elderly with financial access compared to without (24%). The risk of diabetes was four percent lesser among the elderly with financial access than those who had not ($p<0.001$).

Discussion

Education and economic performance before retirement were affecting the quality of life at later ages in India significantly. Morbidity during the fifteen days preceding the survey was reportedly higher among the elderly with little education. Our study supports that higher socio-economic status and level of education – measured directly or by proxies such as household tenure, or education attainment – are seen to increase life expectancy and decrease ill health (Karlsson *et al.,* 2009). While ethnicity had a mixed story, SCs/STs were at a disadvantaged position. Chronic morbidity in the fifteen days preceding the survey was significantly higher among such ethnic groups. An individual's living environment can also influence health care needs and therefore, in this context, the living arrangement and degree of comfortableness are of great concern. The elderly whose living conditions were uncomfortable faced more risk of arthritis. Our findings were similar to those of earlier studies, which maintain that females were at increased risk for arthritis (Srinivasan *et al.,* 2010) and reduced risk for asthma (Agrawal, 2012). The effect of education, living arrangement, age, and place of residence was independently shaping the prevalence of chronic morbidities in this context. The findings from this study are consistent with those of earlier studies, which reported similar associations between education, living arrangement, and chronic morbidities (Albert and Cattell, 1994; Lena *et al.,* 2009; Li *et al.,* 2009). The available evidence suggests that health outcomes are influenced greatly by the compositional characteristics of individuals living in an area (Agrawal, 2012; Lena *et al.,* 2009; Strong *et al.,* 2005; Tucker-Seeley *et al.,* 2011). Our study supports the findings of Yang *et al.,* that the risk of diabetes was increasing with age and that it was reportedly higher among urban residents than among rural counterparts (Yang *et al.,* 2010). The risk of some diseases in urban areas was reportedly lower, for instance, arthritis, whereas some were higher, for example, hypertension.

Our findings support earlier studies, which maintain that lower socio-demographic characteristics such as age, sex, and education are strongly associated with chronic morbidity (Seeman *et al.,* 1989; Van den Akker *et al.,* 1998). The advantaged population with higher education, comfortable living conditions, and wealthier households are posing better health outcomes (Rodin *et al.,* 2012; Roy and Chaudhuri, 2008; Wong and Díaz, 2007). The findings from this study support the positive association between higher income and reduced risk of ill health (Albanese *et al.,* 2011; Rodin *et al.,* 2012). However, a study in other nations argues that older individuals in low and middle income countries were consistently associated with increased risk of poor health outcomes, particularly when receiving income support (Grundy and Sloggett, 2003). Our study quotes evidence from a low income country such as India, in which financial accessibility can help in reducing the risk of chronic morbidity particularly at later ages. The result also shows that financial accessibility and working status have independent impacts on chronic morbidity similar to those of previous studies in other nations (Braveman *et al.,* 2005; Kuo and Lai, 2013; Schäfer *et al.,* 2012). Therefore, this study justifies the hypothesis that the health of an elderly individual is greatly determined by his/her own disposable income. The determining factor of chronic morbidity among the elderly not only shapes such morbidity but also accelerates other diseases, which in turn may contribute to elderly discomfort at later ages.

STUDY LIMITATIONS

This study has several limitations. First, this study was based on data collected in a cross sectional survey. We cannot, therefore, ascribe causality to any associated factor in the study. Second, the study reports covariates included in BKPAI, and other factors such as nutrition found significant in previous studies that should be included in future research (Ahluwalia, 2004; Guha, 1994; Purty *et al.,* 2006) Third, the financial access related indicator was taken from salary and wage-based figures on a monthly basis. As a result, income values used may be highly imbalanced, particularly for extremely high income earners and employees who receive bonus as a significant part of their earnings. Fourth, the morbidity was recognized by doctors; however, it was self-reported during interviews. There may be instances of under- and over-reporting of the chronic morbidities among the elderly in this context. Finally, the study does not deal with the context at the state level separately because of the low number of cases.

CONCLUSION

Despite some limitations, the estimates provide evidence on the emerging burden of chronic morbidity and identify risk factors for chronic morbidity among older adults across seven states in India. This study has found that there is a significant association between chronic morbidities and the money available with the elderly. The findings can help policy makers and public-health researchers understand the importance of arthritis, angina, diabetes, asthma and hypertension and its overall impact on the health outcome of the elderly. Our findings suggest the importance of strengthening primary care systems and the need to improve financial capability promotion and disease prevention for the target elderly population.

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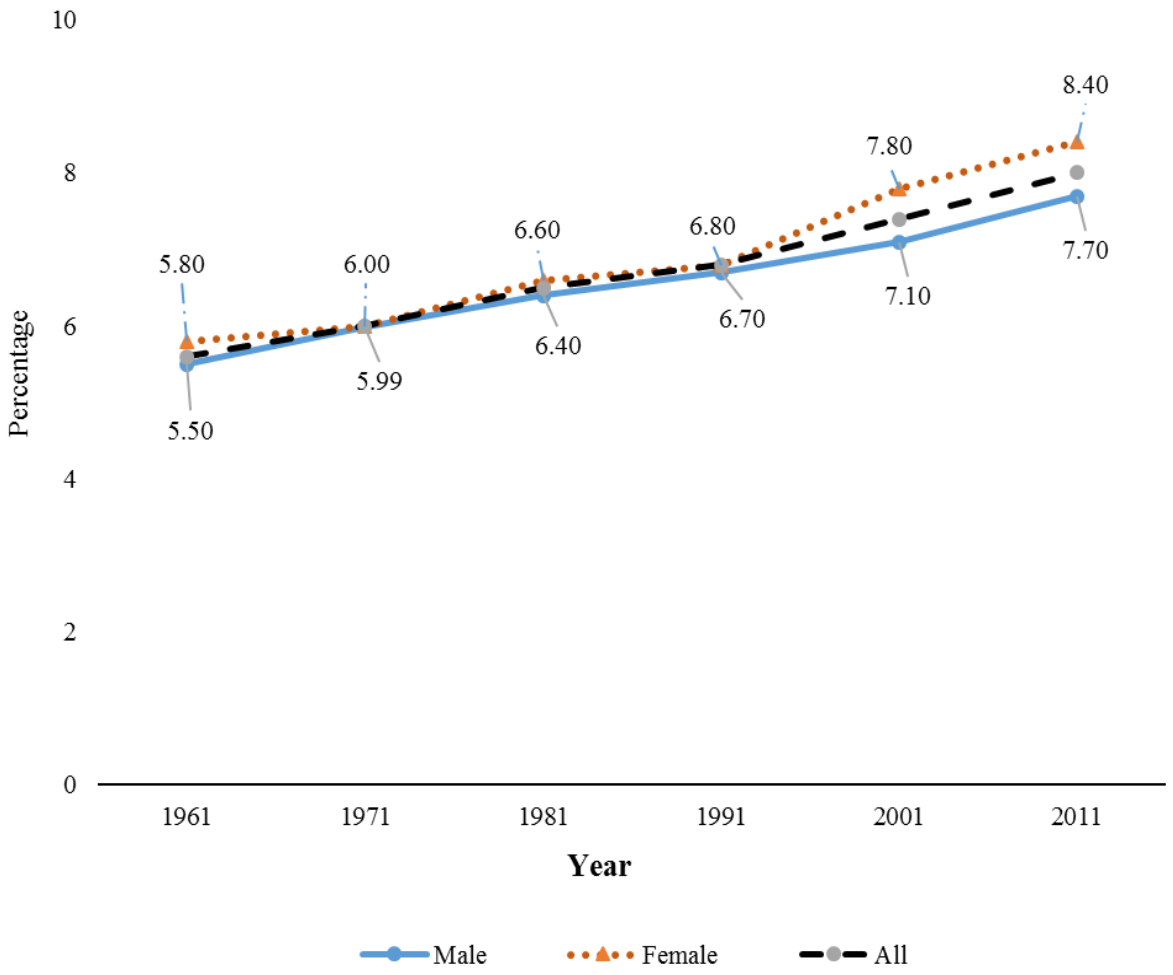
APPENDIX

Graph 1: Percentage of Elderly in Total Population by Gender, 1961-2011



Source: Central Statistics Office, Ministry of Statistics & Programme Implementation, Govt. of India, 2011

Table 1: Profile of Elderly with Respect to their Financial Characteristics in India, 2011

Covariates	No Financial Accessibility	With Financial Accessibility	All
Mean			
Age (in year: mean)	68.44	67.99	68.18
Income (Rs.: mean)	121488	41973	42030
Education (In years: mean)	6.51	7.65	7.24
Currently Married (%)	41.01	58.99	60.72
Not Currently Married (%)	46.48	53.52	39.28

Table 2: Socio-Economic & Demographic Differentials in Financial Access among Elderly in India, 2011

Percentage Distribution	No Financial Accessibility	With Financial Accessibility	All	N
Working Status				
Not Working	46.51	53.49	62.11	4001
Caste				
SC/ST	38.36	61.64	26.42	2389
OBC	46.64	53.36	36.69	3353
Others	42.74	57.26	36.89	3866
Living with someone				
Not living alone	44.34	55.66	93.99	9247
Living alone	24.73	75.27	6.01	603
Living arrangement				
Comfortable	40.75	59.25	38.6	3940
Satisfactory	43.77	56.23	48.61	4744
Uncomfortable	48.08	51.92	12.79	1153
Educational Attainment				
Primary	19	81	53	2582
Higher	33	67	36	1938
Higher Sec.	42	58	11	744
Religion				
Hindu	43.36	56.64	78.25	7781
Muslim	53.03	46.97	8.34	804
Other	35.85	64.15	13.41	1267
Residence				
Rural	41.89	58.11	73.57	5138
Urban	46.68	53.32	26.43	4714
Sex				
Male	25.89	74.11	47.33	4672
Female	58.67	41.33	52.67	5180
State				
Himachal Pradesh	42.04	57.96	15.03	1482
Punjab	32.5	67.5	13.92	1370
West Bengal	47.34	52.66	12.94	1275
Orissa	38.89	61.11	15.03	1481
Maharashtra	47.42	52.58	14.57	1435
Kerala	39.61	60.39	13.86	1365
Tamil Nadu	54.23	45.77	14.66	1444

Table 3: Distribution of Monthly per Capita Consumption Expenditure among the Elderly with Respect to Financially Accessibility in India, 2011

Covariates	No Financial Accessibility	With Financial Accessibility	All	Two-tailed paired-sample		
Age				**t-test**	**df.**	**p-value**
60-65	1712	2020	1886	-6.68	3525	0.0001
65-70	1569	1864	1748	-4.87	2701	0.0001
70-75	1621	1756	1699	-2.24	1691	0.025
75-80	1676	2083	1890	-4.54	901	0.0001
80+	1708	1818	1765	-1.49	1005	0.137
Caste						
SC/ST	1220	1453	1364	-3.95	2384	0.0001
OBC	1592	1764	1684	-4.6	3343	0.0001
Others	2029	2431	2259	-7.06	3856	0.0001
Living with someone						
Not Living alone	1654	1898	1790	-8.572	9232	0.0001
Living alone	1709	2084	1993	-2.803	595	0.005
Living arrangement						
Comfortable	2072	2389	2260	-6.18	3929	0.0001
Satisfactory	1495	1675	1596	-5.8	4737	0.0001
Uncomfortable	1151	1234	1194	-1.6	1146	0.112
Educational Attainment						
Primary	1833	1640	1721	1.53	2570	0.125
Higher	2042	2603	2419	-4.75	1935	0.0001
Higher Sec.	3292	3714	3633	-2.31	740	0.021
Religion						
Hindu	1559	1806	1699	-9.33	7768	0.0001
Muslim	1860	1791	1828	1.01	798	0.31
Other	2160	2517	2389	-2.43	1261	0.02
Residence						
Rural	1585	1815	1718	-4.4	5124	0.0001
Urban	1834	2209	2034	-8.85	4705	0.0001
Wealth Quintile						
Lowest	942	1049	1005	-2.63	1946	0.008
Lower	1267	1413	1351	-3.23	1968	0.001
Middle	1728	1852	1799	-2.7	1933	0.007
Richer	2032	2389	2219	-4.45	1958	0.0001
Richest	2762	3640	3270	-7.62	2012	0.0001
Sex						
Male	1471	1969	1841	-9.5	4662	0.0001
Female	1729	1820	1767	-3.72	167	0.0002

State						
Himachal Pradesh	1999	2384	2222	-4.74	1475	0.0001
Punjab	2055	2223	2169	-0.83	1365	0.405
West Bengal	1581	1910	1754	-3.26	1273	0.001
Orissa	1113	1082	1094	0.36	1479	0.72
Maharashtra	1435	1432	1433	0.26	1433	0.79
Kerala	2432	2715	2604	-3.69	1352	0.0002
Tamil Nadu	1278	1561	1408	-5.3	1442	0.0001

Note: df.: degrees of freedom; p-value: level of significance.

Table 4: Percentage of Elderly among Outpatient Care (15 Days) and Inpatient Care (365 Days) by Selected Characteristics in India, 2011

Covariates	Last 15 Days		Last 365 Days	
	No Financial Accessibility	With Financial Accessibility	No Finance	Finance
Age				
60-65	12.33	11.97	58	54.38
65-70	12.97	12.42	64.39	64.09
70-75	16.21	11.3	70.25	68.49
75-80	17.29	12.33	74.31	74.23
80+	16.44	17.16	79.58	78.33
Caste				
SC/ST	14.76	14.76	63.88	59.37
OBC	13.44	11.72	59.35	60.37
Others	14.18	11.24	74.54	70.67
Living with someone				
Not Living alone	14.14	12.36	66.23	64.43
Living alone	15.53	14.42	61.26	57.36
Living arrangement				
Comfortable	10.6	9.61	64.34	60.12
Satisfactory	15.57	13.5	68.6	66.61
Uncomfortable	18.53	18.55	61.77	65.34
Educational Attainment				
Primary	16.28	13.07	70.21	64.67
Higher	10.16	10.33	54.39	58.69
Higher Sec.	3.17	9.36	63.22	60
Religion				
Hindu	13.93	12.41	62.06	60.48
Muslim	20.31	18.38	83.1	70.52
Other	10.41	10.44	78.64	78.25
Work Choice				
By Choice	21.89	9.21	38.72	58.06
Eco Need/Compulsion	5.01	13.37	57.44	54.78
Residence				
Rural	15.21	13.18	67.62	64.49
Urban	11.63	10.51	62.18	61.96
Wealth Quintile				
Lowest	15.86	16	52.68	57.57
Lower	16.46	14.63	66.19	63.89
Middle	17.11	10.45	73.01	62.5
Richer	10.09	10.33	65.22	65.92
Richest	9.69	8.73	78.87	73.91
Sex				
Male	15.76	11.24	64.57	60.97
Female	13.56	14.58	66.66	68.52

Table 5: Distribution of Elderly with Major Health Problems that require Hospitalization in India, 2011

Covariates	No Financial Accessibility	With Financial Accessibility	All
Age	***	*	***
60-65	17.96	18.59	18.32
65-70	20.99	18.34	19.39
70-75	24.55	19.39	21.58
75-80	23.28	22.52	22.88
80+	23.33	27.33	25.39
Caste	*	*	***
SC/ST	20.35	20.41	20.39
OBC	21.09	20.81	20.94
Others	21.26	18.29	19.56
Living with someone			
Not Living alone	21.14	19.68	20.33
Living alone	19.31	22.14	21.44
Living arrangement	***	***	***
Comfortable	17.56	17.41	17.47
Satisfactory	22.86	20.43	21.5
Uncomfortable	23.92	21.11	25.05
Educational Attainment	***	***	***
Primary	26.49	22	23.89
Higher	16.93	13.45	17.28
Higher Sec.	11.2	10.82	15.17
Religion	***	***	***
Hindu	19.8	19.54	19.65
Muslim	32.89	31.3	32.14
Other	19.26	16.34	17.38
Residence	***	***	***
Rural	22.48	20.57	21.37
Urban	17.58	17.74	17.66
Wealth Quintile	***	***	***
Lowest	21.4	22.15	21.84
Lower	23.43	21.87	22.53
Middle	24.59	17.8	20.73
Richer	15.78	18.25	17.07
Richest	19.52	17.61	18.42
Sex	*	*	
Male	23.66	18.55	19.87
Female	20.05	22	20.86

Note: ***: p<0.001; **: 0.01; *: 0.05

Table 6: Predicted Probability of Having Morbidity among Elderly in India, 2011

Covariates	Arthritis	Angina	Diabetes	Asthma	Hypertension	Any
Finance						
No®	0.236	0.078	0.165	0.085	0.26	0.543
Yes	0.212**	0.079	0.121***	0.082	0.232	0.513*
Age						
60-65®	0.189	0.065	0.135	0.066	0.202	0.452
65-70	0.242**	0.075	0.13	0.078	0.25**	0.525**
70-75	0.256*	0.092*	0.147	0.098*	0.293***	0.617***
75-80	0.256*	0.11***	0.185*	0.119***	0.343***	0.644***
80+	0.253	0.101***	0.142	0.131***	0.235	0.62***
Caste						
SC/ST®	0.248	0.057	0.084	0.074	0.195	0.47
OBC	0.178**	0.079	0.144*	0.082	0.216	0.478
Others	0.259	0.086	0.157	0.087	0.286	0.588*
Living with someone						
Not Living alone®	0.224	0.079	0.142	0.085	0.246	0.528
Living alone	0.23	0.06	0.104	0.049	0.17	0.447
Living arrangement						
Comfortable®	0.194	0.087	0.153	0.073	0.259	0.496
Satisfactory	0.250***	0.069	0.13	0.093*	0.224	0.548***
Uncomfortable	0.273***	0.076*	0.107*	0.093	0.239***	0.573***
Educational Attainment						
Primary®	0.247	0.073	0.127	0.096**	0.239	0.546
Higher	0.194	0.083	0.139	0.075*	0.229	0.477
Higher Sec.	0.215	0.087	0.208	0.051	0.303	0.573
Religion						
Hindu	0.22	0.062	0.113	0.075	0.212	0.488
Muslim	0.166*	0.151***	0.244***	0.175***	0.317***	0.657***
Other	0.285*	0.138***	0.248***	0.082	0.393***	0.673***
Residence						
Rural®	0.24	0.076	0.129	0.089	0.241	0.537
Urban	0.195*	0.082	0.159	0.073	0.244**	0.501***
Wealth Quintile						
Lowest®	0.26	0.04	0.045	0.076	0.147	0.446
Lower	0.234	0.035	0.08*	0.092	0.164	0.478*
Middle	0.219	0.078***	0.128***	0.067	0.224***	0.5***
Richer	0.174	0.089***	0.135***	0.095	0.233***	0.484***
Richest	0.252	0.123***	0.252***	0.083	0.381***	0.663***
Sex						
Male	0.2	0.081	0.124	0.09	0.204	0.49
Female	0.265***	0.074	0.167	0.078	0.308***	0.581***

State						
Himachal Pradesh	0.283	0.035	0.076	0.1	0.165	0.476
Punjab	0.395***	0.108***	0.15	0.058	0.339***	0.643***
West Bengal	0.192***	0.092***	0.107	0.042***	0.258***	0.52
Orissa	0.219***	0.021	0.088*	0.043***	0.21***	0.438
Maharashtra	0.29	0.025	0.088	0.106	0.138	0.532*
Kerala	0.154***	0.172***	0.299***	0.15**	0.409***	0.714***
Tamil Nadu	0.14***	0.037	0.067	0.034**	0.101	0.273***
N	5149	5149	5149	5149	5149	5149
p	0.001	0.001	0.001	0.001	0.001	0.001

Note: ***: p<0.001; **: 0.01; *: 0.05