

Health Status Among Elderly in Northeast India

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Abstract

The study documents the health status, pattern of living arrangements and sources of familial support for the elderly (aged 60 years and above) and examines the factors associated with ill health in seven northeastern states. Data from the National Sample Survey Organization (NSSO) (Fifty second round) was used for the study. The study also explores the factors associated with ill health of the elderly. Fifty second round of NSSO asked the individuals three sets of questions regarding their health: their current status of health, whether they are physically immobile and whether or not they have had any specific chronic illnesses. About ten percent of the males and twenty percent of the females were physically immobile and confined at home. Analysis revealed that as age increased, the perception of self health among the elderly became poor. Thirty three percent of the males and forty seven percent of the females had at least one disability. Sixty percent of the males and seventy one percent of the females were suffering from at least one chronic illness. The results indicated higher rate of joint problems (48%) and cough (37%) among the rural elderly, while hypertension and diabetes were higher in urban areas. Males had a lower chance of disabilities than females. There is an urgent need to extend assistance to the elderly, especially to the old old individuals among the elderly. Older age also needs more health care due to chronic diseases, government should initiate policies and programs specially targeted to them. Since there is a higher incidence of elderly females being disabled, there should be policies to take care of elderly widows. Appropriate policy actions and programs need to be devised to ensure disability free healthy ageing.

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Introduction

With a gradual reduction in the fertility rate and a rapid reduction of mortality rate due to medical interventions, the size of the young cohort has declined and the size of the old cohort has increased. As a direct consequence, there has been an increase in older people (60 years and above) in the population. In recent years social changes, decline in family size, rural to urban migration and increasing urbanization have raised questions about the long lasting role of the family as a source of support for the elderly. With a rise in the population of older persons and an improvement in life expectancies, India is likely to experience an increase in disabilities and chronic illnesses among elders. Rapid demographic transition without a concomitant epidemiological transition is to be blamed for dual load of infections and degenerative diseases among older persons.

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Although difficulty in physical functioning is more frequent with increasing age, studies have shown that older adults exhibit different functional ability and that not all persons in a particular age group experience similar health problems or are at the same level of functional capacity. There is evidence that sex and marital status are important correlates of health and functional status at older ages. Most of these studies confirm that women are more likely than men to suffer debilitating illnesses that cause impairment and disability.¹⁻⁵ A study by Lillard and Waite also show that marriage has a sizable protective effect on the mortality and morbidity of older adults, and this effect is more pronounced for men.⁶

Surveys like National Sample Survey Organization in forty second and fifty second round provide a lucid picture about old age health problems. A study by Bagga elaborates about old age suffering due to various diseases based on data of women in Maharashtra.⁷ It is reported that cough and joint pain are more frequent in rural areas whereas occurrence of life style related diseases is higher in urban areas. Similar disability status of elderly women is elaborated by Rao et al.⁸ However, health problems of elderly in seven northeastern

states namely, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim have not been discussed so far. This is the first attempt to understand the health problems of elderly in the northeastern states.

The northeastern region of India is constituted by eight states namely, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim with a total population of around 35 million (Census 2001). The eight northeastern states are surrounded by China in the north, Myanmar in the east, Bhutan in the northwest and Bangladesh in the southwest. The topography of the region is characterized by lofty mountain ranges, snow capped mountain peaks, ravines, valleys and deep gorges. In this study, seven northeastern states except Assam were included. The main reason why the state of Assam was being excluded from the analysis is that NSSO has brought out the health and chronic illness status among elderly in all major states including Assam in the report entitled "The aged in India-a socio economic profile".⁹ The seven northeastern states have a total population of 12 million. The highest population is in the state of Tripura (3.2 million) and the lowest is in Sikkim (0.5 million). The proportion of the elderly population (aged 60 years and above) to total population in the northeastern region varies from 4.5% in Nagaland and Arunachal Pradesh to 7.3% in Tripura. In Mizoram and Tripura, the proportion of elderly females are higher than the proportion of elderly males (Census 2001).

The study examines health status, pattern of living arrangements and sources of familial support for the elderly (aged 60 years and above) in the northeastern region using data from the National Sample Survey Organisation (fifty second round). This study also analyses the factors with regard to socio demographic status associated with ill health of the elderly.

Data

The sample consists of 1821 respondents, aged 60 years and more. Data has been weighed using NSS multipliers before analysis. The variables included for the analysis are age, sex, urban rural residence, state, education, number of children, whether in labour force, state of economic independence, living arrangements, disability status and chronic illness. We used logistic regression model because this is a good way to deal with two category dependent variables such as disability status or status of chronic illness. The information

provided by the respondents were self reported; no effort was made to do clinical test for any of the disease conditions.

Socio demographic and work status of the elderly

Some background characteristics of the elderly observed from the survey are presented in Table-1.

Among the elderly surveyed, two-third of them belonged to the age group of 60-69 and only 10 percent were reported as being 80 years and above. Not much difference was noticed between sex and age distributions in urban and rural areas. Almost fifty five percent of the elderly males and seventy eight percent of the elderly females were illiterate. The illiteracy rate was lower in urban areas for both males and females than in rural areas. As majority of the elders were illiterate, their living conditions mostly depend upon their co-residence with children and their ability to work.

The marital status of the elderly was as follows: 3 percent never married, half were currently married and 47 percent were widowed. Divorce/ separation is a rare phenomenon in the northeastern region. As shown in Table-1, more than two-third of the elderly women were widowed as against thirty percent among the elderly men. Rajan et al. pointed out that on an average, sixty percent of the elderly women and eighteen percent of the elderly men were widows and widowers respectively in India.¹⁰ The incidence of widows and widowers was much higher in the northeastern states as compared to the national average. Though incidence of widows remains same in both urban and rural areas, only thirteen percent of elderly males were widowers in urban areas as against thirty three percent in rural areas. In urban areas, the elderly men may remarry after the death of their partner or might migrate to stay with their relatives in rural areas instead of staying alone. Table-2 shows that proportion of elderly widows in the age group of 60-69 is 60%; it rises to ninety one percent in the age group 80 and above. Only forty percent of elderly men were widowers in the age group of 80 and above.

According to the survey results, seventy nine percent of the elderly men were reported as heads of households as against nineteen percent of the elderly females. Close to sixty one percent of the elderly males lived with their spouse and other members as against twenty nine percent of the elderly females. On the other hand, fifty six percent of the elderly females and

Table 1: Background characteristics of elderly persons, NSSO, 1995-96

Age distribution	Rural (n=1212)			Urban (n=609)			Total (n=1821)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
60-69	67.4	66.5	67.0	64.3	55.8	60.0	67.0	64.7	66.0
70-79	22.6	23.0	22.8	27.2	37.5	32.5	23.2	25.5	24.2
80+	10.0	10.5	10.2	8.5	6.7	7.6	9.8	9.8	9.8
Total	100	100	100	100	100	100	100	100	100
General education									
Illiterate	59.9	84.8	70.6	21.1	47.8	34.8	54.9	78.4	65.3
Literate	9.2	7.5	8.5	2.8	6.3	4.6	8.4	7.2	7.9
Below primary	16.2	3.3	10.7	15.0	17.4	16.2	16.0	5.8	11.5
Primary	9.0	3.7	6.7	10.3	14.3	12.4	9.1	5.5	7.5
Middle	3.6	0.4	2.2	23.9	9.4	16.5	6.3	1.9	4.4
Secondary	1.4	0.2	0.9	13.1	1.3	7.1	2.9	0.4	1.8
Higher secondary	0.4		0.2	4.7	1.3	3.0	1.0	0.2	0.6
Graduate & above	0.2		0.1	8.9	2.2	5.5	1.3	0.4	0.9
Total	100	100	100	100	100	100	100	100	100
Marital status									
Never married	2.4	3.5	2.9	3.3	2.7	3.0	2.6	3.5	3.0
Currently married	64.6	27.8	48.8	81.2	28.6	54.2	66.8	27.9	49.6
Widowed	32.8	67.7	47.9	13.1	67.0	40.7	30.3	67.6	46.8
Divorced/separated	0.1	1.0	0.5	2.3	1.8	2.1	0.4	1.1	0.7
Total	100	100	100	100	100	100	100	100	100

Table 2: Marital status by age among elderly, NSSO, 1995-96

Age distribution	60-69 (n=1221)		70-79 (n=456)		80+ (n=144)		Total (n=1821)	
	Males	Females	Males	Females	Males	Females	Males	Females
Never married	2.9	2.6	1.3	6.9	3.1		2.6	3.4
Currently married	68.2	35.7	66.9	15.6	57.1	8.6	66.8	27.9
Widowed	28.7	60.4	31.2	76.9	39.1	90.6	30.3	67.5
Divorced/separated	0.2	1.3	0.5	0.6	0.6	0.8	0.3	1.1
Total	100	100	100	100	100	100	100	100

only thirty one percent of the elderly males were living with their children but without spouse. Yet ten percent of the elderly women were living with only spouse or living alone or in the old age home whereas only five percent older men were living alone or living with only spouse. Since majority of the elderly were living with family members, it is clear from the analysis that there exists strong family support systems in the northeastern states.

According to the Census 1991, sixty one percent of the elderly males and sixteen percent of the elderly females continue to work beyond the age of 60 years. NSS data show that half of the elderly males and fifteen percent elderly females were working outside home in northeastern states in India. However, the proportion working in urban areas was less than that working in rural areas for both the elderly women and men (Table 4). Figure 1 shows the type of activities the elderly

were engaged in. The highest proportion of the elderly males were self employed in agriculture. The women were also engaged in agricultural activities either in their own farms or as casual labourers.

The work participation rate among the elderly males in the age group of 60-69 years was fifty nine percent, it dropped to 12% in the age group of 80+. Work participation rate among elderly females was much lower in the same age range i.e., 19% at the age group of 60-69 years and decreased to 4% in the age group of 80+. Even so, among the old-old (80+), 12% of the elderly males and 4% of the elderly females were working. However, the proportion in the age group of 80+ in the labour force was higher in urban areas than in rural areas.

Table-5 indicates self reported mobility status and the state of current health status of individuals, by gender and age category. The perception of self health

Table 3: Distribution of elderly by relation to head, their living arrangements and work status, NSSO, 1995-96

	Rural (n=1212)			Urban (n=609)			Total (n=1821)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Relation to head									
Head	78.5	17.9	52.4	84.5	27.1	55.0	79.3	19.4	52.8
Spouse of the head		22.7	9.8	0.5	26.2	13.7	0.1	23.3	10.3
Father/mother/ father-in-law/ mother-in-law	19.0	52.0	33.2	10.3	40.0	25.6	17.9	49.9	32.1
Other relatives	2.0	5.6	3.6	2.3	5.8	4.1	2.1	5.7	3.7
Non relatives				0.5	0.4	0.5	0.1	0.1	0.1
	100	100	100	100	100	100	100	100	100
Living arrangements									
Living alone-as inmate of old age home	0.6	3.4	1.8	1.4	1.9	1.6	0.8	3.2	1.8
Living alone-not as inmate of old age home	1.3	3.4	2.2	1.0	1.4	1.2	1.3	3.1	2.1
With spouse only	2.9	3.9	3.3	7.6	3.2	5.4	3.5	3.9	3.7
With spouse and other members	59.4	27.6	45.7	69.5	34.7	51.9	60.7	28.8	46.6
Without spouse but with children	33.3	55.9	43.0	15.2	56.5	36.2	30.9	55.9	42.0
Other relations	1.9	4.9	3.2	3.8	2.3	3.1	2.1	4.4	3.1
Non relation	0.6	0.9	0.7	1.4		0.7	0.7	0.7	0.7
	100	100	100	100	100	100	100	100	100
Working status									
Working	50.9	16.0	35.9	40.1	10.7	25.0	49.5	15.1	34.3
Not in labour force	49.1	84.0	64.1	59.9	89.3	75.0	50.5	84.9	65.7
	100	100	100	100	100	100	100	100	100

among the elderly became poorer as their age increased. Elderly women in general, reported poor health status than the elderly men. One may assume that those who were physically immobile may be in poor health, it is necessarily true for this sample. The perceived health status need not always be correlated to objective indicators of health, as reported in instances of specific diseases.¹¹ It is sufficient to note that around 31% of those who perceived their health as "excellent" or "very good" were found to be suffering from chronic disease like "problem of joints". Physical immobility was more common among older females than older males. Table 5 shows that 20 percent females and 10 percent males were physically immobile. In total, 14 percent of the elderly were immobile and confined to home.

Data with regard to individual illnesses by age is shown in Table 6A. Joint problems were more frequent among the elderly females. Chronic illnesses were in increasing frequency with advancing age among the older persons. Higher proportions of females were

suffering from all type of chronic diseases, except piles and high blood pressure. Sixty percent of males and 71% of females were suffering from at least one chronic illness. Those having chronic illness were not evenly distributed in urban and rural areas (urban 53%; rural 67%). The results indicated a higher rate of joint problems (48%) and cough (37%) among the rural elderly, while high blood pressure and diabetes were higher in urban areas (Fig. 2). The other chronic diseases like heart diseases, piles and urinary problems were higher among rural elderly. As already discussed that the information was collected through a cross-sectional survey, many persons may not be aware of having any health problems or they might not have reported.

It is common to associate old age with disability. However, as young-old elderly move into the old-old category, they tend to have more health complaints and diagnosed illnesses. As people grow older, their sensory, motor and cognitive capacities decline. Except senility, more females than males had reported any

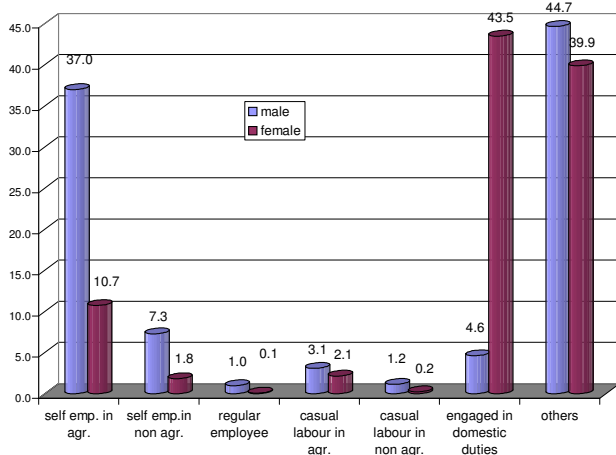
Table 4: Work participation of elderly by age group, NSSO, 1995-96

Working status	Rural (n=1212)			Urban (n=609)			Total (n=1821)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Age distribution									
60-69	60.8	19.2	43.0	46.0	16.8	32.1	58.9	18.8	41.5
70-79	39.9	12.4	28.0	27.6	3.6	13.4	38.1	9.9	25.0
70+	30.7	9.7	21.5	28.9	3.1	14.4	30.4	8.2	20.3
80+	9.8	3.5	7.0	33.3	6.7	18.8	12.4	3.9	8.6

Table 5: Self reported status of mobility and current health status, NSSO, 1995-96

Age group (yrs)	60-69			70-79			80+			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Whether physically immobile												
Yes-confined to bed	1.2	0.8	1.0	0.8	0.6	0.7	—	—	—	1.0	0.7	0.8
Yes-confined to home	10.7	20.7	15.0	4.8	15.5	10.0	4.0	17.6	8.8	8.6	19.0	13.2
Completely mobile	88.2	78.6	84.0	94.4	83.9	89.3	96.0	82.4	91.2	90.4	80.4	86.0
	100	100	100	100	100	100	100	100	100	100	100	100
Current state of health												
Excellent	1.5	1.5	2.1	3.6	3.0	1.3	5.3	2.6	1.7	2.3	2.0	
Very good	14.1	17.1	15.5	12.8	11.7	12.3	5.9	6.6	6.2	13.0	14.9	13.9
Good/fair	69.4	60.2	65.3	63.9	50.8	57.4	65.8	50.0	60.8	67.7	56.9	62.9
Poor	15.0	21.2	17.7	21.1	33.8	27.3	27.0	38.2	30.4	17.6	25.9	21.2
Total	100	100	100	100	100	100	100	100	100	100	100	100

Figure 1: Usual activities of elderly by sex



of the above disabilities (Table 6B). Females were twice disabled with respect to visual and hearing problems than males. This reflects the fact that their needs/sufferings were unheard or neglected by their children or spouse. The frequency of disability increased with advancing age among the older persons, particularly in females. Those having disability with regard to visual problems were evenly distributed in urban and rural areas (23% each). However, disability with respect to speech, locomotor and senility was higher in urban areas and hearing disorder was higher in the rural areas.

Table 7 reveals that 71% of the males and 55% of the females did not have any disabilities. On the

other hand, 17% of the elderly males and 22% of the elderly females had only one disability and close to 2% of the elderly had all the five disabilities. The distribution is similar in both urban and rural areas except that in urban areas elderly males (4%) and elderly females (5%) had five disabilities.

Determinants of ill health: A logistic regression analysis

The dependent variable ‘disability’ for this analysis is dichotomous variable indicating that the respondent having disability was coded as ‘1’ and not disabled was coded as ‘0’. Similarly dependent variable ‘chronic illness’ is dichotomous variable indicating that the respondent having chronic illness was coded as ‘1’ and not having chronic illness was coded as ‘0’. We used logistic regression to model the 2 category variables.

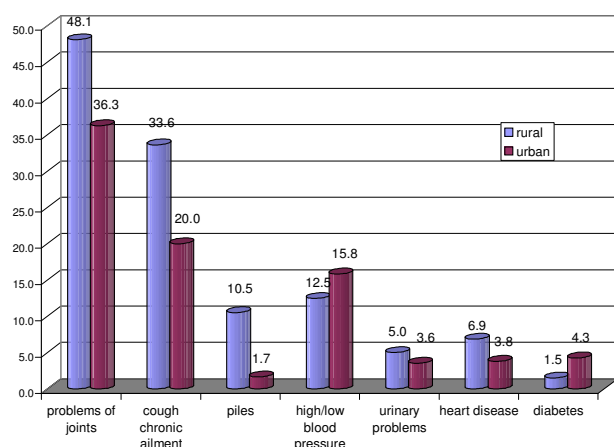
The logistic regression analysis shows that among the variables, education, age, sex and number of children of the elderly were the weakest link with regard to chronic illness. In other words, chronic illness does not differentiate sex or age of the elderly. Those elderly who were economically dependent on others or those living in rural areas were two times more likely to suffer from chronic diseases. Most probably, the health facilities were located in far flung hilly areas, and the transport facilities may be quite poor. And those living with children were 38% less likely to suffer from illnesses than those living alone or only with spouse

Table 6A: Chronic ailments by age group

Age group (yrs) Chronic ailment	60-69		70-79		80+		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Cough	32.9	33.2	27.7	31.1	24.5	29.9	30.9	32.3
Piles	6.3	7.7	17.7	7.5	24.1	5.5	10.6	7.4
Problems of joints	37.4	44.6	38.0	63.5	75.9	73.2	41.4	52.4
High blood pressure	11.0	8.1	18.8	12.9	24.5	29.9	14.1	11.5
Heart disease	4.8	9.2	3.2	6.6	5.1	12.6	4.5	8.9
Urinary problems	3.1	6.2	1.7	5.7	10.1	9.4	3.5	6.4
Diabetes	1.0	2.3	0.6	2.2	3.2	8.8	1.2	2.9
<i>At least one chronic ailment</i>	55.6	69.1	63.0	72.6	86.1	81.9	60.4	71.3

Table 6B: Disability by age group

Age group (yrs) Disability	60-69		70-79		80+		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Visual	13.5	31.1	19.4	27.0	21.5	58.3	15.6	32.8
Hearing	15.3	30.0	17.4	19.8	31.0	52.4	17.3	29.6
Speech	3.5	4.9	4.1	12.0	7.5	11.8	4.0	7.4
Locomotors	6.0	7.1	7.8	8.5	3.2	14.2	6.1	8.2
Amnesia/Senility	8.4	6.2	11.0	12.0	20.8	7.9	10.2	7.9
<i>At least one disabilities</i>	26.2	47.7	33.0	37.7	49.4	69.3	30.1	47.3

Figure 2: Type of chronic ailments by residence**Table 7: Number of disabilities reported**

Disabilities	Rural		Urban		Total	
	Male	Female	Male	Female	Male	Female
No disability	71.3	54.7	72.0	57.1	71.4	55.1
One	16.3	21.1	18.2	25.0	16.6	21.8
Two	6.2	17.3	4.2	8.9	6.0	15.9
Three	4.0	2.9	0.9	2.2	3.6	2.8
Four	1.0	3.1	0.5	1.8	1.0	2.9
Five	1.1	0.9	4.2	4.9	1.5	1.6
Total	100	100	100	100	100	100

or with other relatives. Those not in labour forces, were two times more likely to suffer from chronic illness than those working outside. The probable reason may be that elderly may not take up any jobs due to their illness. Chronic illnesses bring disability in the old age. Chronic patients may become two and half times more disabled.

The variables such as education, economic independence, residence and labour force participation were the weakest links with respect to disability. However, age and gender of the elderly, number of living children and living arrangements were significant variables for the occurrence of disability. Males were 47% less likely to suffer from disability than females. The chance of disability increased by 3% as he or she grows old for each additional year. The incidence of disabilities was lower among those who stayed with children rather than living without children or living with other relatives. Those who were disabled were 2.7 times more prone to chronic illnesses.

Conclusion

From the analysis, some important issues have emerged. Firstly, results confirm that women experience relatively disadvantageous position than men with respect to disability that can lead to immobility. The prevalence of disability increases with age and there is an urgent need to extend assistance to the elderly, especially to the older individuals among the elderly. Secondly, analysis suggests that the prevalent chronic diseases among the elderly are substantial. A group

Table 8 : Determinants of disability and chronic illness

Variables	Disability			Chronic Illness		
	Coefficient	p-value	Odds ratio	Coefficient	p-value	Odds ratio
Educational attainment						
Above primary	-0.23	0.26	0.80	0.15	0.44	1.16
Primary	-0.11	0.34	0.90	0.71	0.00	2.03
Illiterate ®						
Living arrangements						
With children without spouse	-0.54	0.00	0.59	0.16	0.40	1.17
Living with children & spouse	-0.71	0.00	0.49	-0.33	0.08	0.72
Living alone or living with relatives ®						
Illness due to chronic or disability						
Chronic/disability	0.99	0.00	2.69	0.99	0.00	2.68
Normal®						
Labour force participation						
Not in labour force	-0.05	0.71	0.95	0.64	0.00	1.90
Working®						
Number of living children						
Sex of the elderly	-0.11	0.00	0.89	-0.04	0.12	0.97
Male	-0.46	0.00	0.63	0.17	0.16	1.18
Female®						
Age of the elderly						
Age of the elderly	0.03	0.00	1.03	0.00	0.65	1.00
Type of residence						
Rural	-0.08	0.57	0.92	0.83	0.00	2.30
Urban®						
State of economic independence						
Fully eco. dependent on others	0.19	0.19	1.22	0.66	0.00	1.93
Partially dependence	0.07	0.62	1.07	-0.09	0.49	0.91
Not dependent on others ®						
Constant	-2.07	0.00	0.13	-1.26	0.03	0.28

® - reference category

of chronic diseases including diabetes, joint problems, heart disease and chronic cough can be risk factors for subsequent critical health problems. Therefore, there is a need for timely diagnosis of chronic diseases and identification of risk factors which may then be treated in order to halt or at least decrease their negative impact on functional decline. Since older age merits more health care, appropriate policy actions and programs are to be devised to ensure disability free healthy aging and good quality of life in the later years.

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