

## **Disability in ADL Among the Ederly in an Urban Area of Manipur**

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### **Abstract**

**This cross sectional study was done in elderly above 60 years of age with the objectives to assess the prevalence of disability in ADL among the elderly in the urban field practice area of the department of community medicine, RIMS, Imphal. Disability in ADL, age, marital status, gender, educational status, occupation, chronic disease and perceived health status were studied. 38 (12.2%) elders were found to be disabled in ADL. Elderly males with poor perceived health status and having one or more chronic diseases have significantly higher risk of being disabled in ADL. It was concluded that identified risk factors need to be addressed in prevention and control strategies in this area.**

### **Introduction**

The average length of human life has increased over the countries as living conditions have improved and aging population is on the rise. Projections beyond 2016 made by UN have indicated that 21% of the Indian population will be more than 60 years by 2050 in comparison to 6.8% in 1991. According to 2001 census, the elderly comprised 7.8% of the population. Aging, an integral part of living, typically is accompanied by gradual but progressive physiological changes and an increased prevalence of acute and chronic illness. Although neither a disease nor disability per se, aging nonetheless is associated with a high incidence of physical impairment and functional disability.

In India, life expectancy at 60 years for the year 1995-1996 was 14.6 years for males and 17 years for females<sup>1</sup>. But, the gain in survival may be accompanied by increased morbidity due to age related chronic diseases, falls and accidents etc. Thus disability among the elders will emerge as a problem in the near future. Among the several concerns of humankind, the one leading to a life free from illness, disability and poor health during old age

has been a dominant one. One form of disability concerns with activities of daily living (ADL) and when people are unable to perform these basic personal care tasks they need help for living, which may be not organized or supported.

Since gerontological research in India is of recent origin, it is marked by absence of longitudinal as well as cross sectional studies on several aspects concerning the elderly. Besides, no handy and concrete data are available regarding problems of the aged in the north east region. Hence this study was taken up to assess the prevalence of disability in ADL among the elderly and to see the association between disability in ADL and selected variables of interest.

### **Material and Methods**

This cross sectional study was carried out in the urban field practice area of the Department of Community Medicine, RIMS, Imphal. The study participants were identified from the family folders that were maintained at the department. The folders are updated regularly. There were 810 households in the study area with a population of 4830. All residents 60 years and above were included in the study. Data collection was carried out from January 2003 to April 2003. The study instruments

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included a pre-tested interview schedule, sphygmomanometer, weighing machine and measuring tape.

Disability in ADL was assessed by using the Katz index<sup>2</sup>. Activities of daily living (ADL) are the tasks of self maintenance, mobility, communication, home management and community living that enables an individual to achieve personal independence. Loss of ability to care for personal needs leads to loss of self esteem, and a deep sense of dependence and even feeling of infantilism sets in. One important measure of morbidity is a person's ability to perform the activities of daily living (ADL) mainly the 6 basic personal care tasks like bathing, dressing, toileting, transferring, continence and feeding.

For this study, inability to perform one or more of the activities of daily living was taken as disabled in ADL. Socio-demographic characteristics like age, sex, educational status, marital status and occupation were noted and were used for analysis. For presence of chronic diseases, physicians' diagnoses and/or medical records were considered. Blood pressure measurements were carried out with the subjects seated, after a 5 minutes resting period. Two readings at an interval of 2 minutes were taken by a sphygmomanometer. Hypertension was said to exist if the systolic blood pressure measurements were  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg in this study if the case was not diagnosed before. Perceived health status was also noted. The

characteristics of the elderly who were disabled in ADL were compared with those who were not disabled. Statistical analyses were carried out using Chi square test and adjusted odds ratio by logistic regression.

## Results

Three hundred and twenty six elderly persons were identified in the area. Of the 326 elders, 312 participated in the present study. The rest could not be contacted despite making 3 visits. Informed consent was taken before each interview. Males constituted 43.3% (135) and 56.7% (177) were females. Participants' age ranged from 60 to 102 years. The mean age of the participants was 69.7 ( $\pm 8.1$ ) years. The prevalence of disability in ADL was found to be 12.2%.

Table 1 shows the prevalence of disability in ADL among the elderly by age, sex, marital status, educational status, occupation and presence of chronic diseases. Significant associations were seen between disability in ADL and older age ( $P < 0.001$ ), living without spouse ( $P < 0.01$ ), being illiterate ( $P < 0.01$ ), being unemployed ( $P < 0.05$ ), presence of chronic diseases ( $P < 0.01$ ) and perceiving health status as not healthy ( $P < 0.001$ ). Although it was observed that males were more disabled than females, the difference was not statistically significant.

Table-II showed the results from logistic regression analysis, which revealed that the effect of current age on the relative extent of disability is positive (1.12, CI

**Table 1. : Disability in ADL among the elders by selected characteristics**

<i>Characteristics</i>	<i>Disabled in ADL (%)</i>	<i>Not disabled in ADL (%)</i>	<i>Total(N)</i>	<i>P-value</i>
<b>Age (yr)</b>				
60 – 69	5 (2.8)	175 (97.2)	180	
70 – 79	14 (15.6)	76 (84.4)	90	< 0.001
$\geq 80$	19 (45.2)	23 (54.8)	42	
<b>Marital status</b>				
Living with spouse	17 (8.4)	185 (91.6)	202	<0.01
Living without spouse	21 (19.1)	89 (80.9)	110	
<b>Gender</b>				
Male	20 (14.8)	115 (85.2)	135	>0.05
Female	18 (10.2)	159 (89.8)	177	
<b>Educational status</b>				
Literate	7 (5.9)	112 (94.1)	119	<0.01
Illiterate	31 (16.1)	162 (83.9)	193	
<b>Occupation</b>				
Employed	2 (3.4)	56 (96.6)	58	<0.05
Pensioner	5 (7.4)	63 (92.6)	68	
Unemployed	31 (16.7)	155 (83.3)	186	
<b>Chronic disease</b>				
Present	32 (16.4)	163 (83.6)	195	<0.01
Absent	6 (5.1)	111 (94.9)	117	
<b>Perceived health status</b>				
Healthy	4 (2.2)	174 (97.8)	178	<0.001
Not healthy	34 (25.4)	100 (74.6)	100	

1.06-1.19) Males were also observed to have significantly higher odds (2.98, CI 1.01-8.86) of disability than their female counterparts. Findings also revealed that elderly people who have one or more chronic diseases (3.49, CI 1.19-10.27) and those who perceived themselves as not healthy (13.28, CI 4.11-42.86) have higher odds of disability in ADL than their counterparts without chronic diseases and those who perceived their health status as healthy.

**TABLE 2. Logistic regression estimates of odds ratio of disability in ADL by selected characteristics.**

<i>Characteristics</i>	<i>Beta Coefficient</i>	<i>OR (95%CI)</i>
<b>Age (years)</b>	0.1176	1.1247(1.0600-1.1935)***
<b>Marital status</b>		
Living with spouse ®		
Living without spouse	-0.4209	0.6565(0.2355-1.8295)
<b>Gender</b>		
Female®		
Male	1.0935	2.9846(1.0058-8.8567)*
<b>Educational status</b>		
Literate®		
Illiterate	0.8514	2.3430(0.4752-11.5518)
<b>Occupation</b>		
Employed®		
Pensioner	1.1662	3.2097(0.4067-25.3310)
Unemployed	1.2320	3.4282(0.5761-20.4506)
<b>Chronic disease</b>		
Absent®		
Present	1.2507	3.4927(1.1878-10.2698)*
<b>Perceived health status</b>		
Healthy®		
Not healthy	2.5861	13.2782(4.1136-42.8591)***.

\*\*\*P<0.001, \*P<0.05, ®Reference category

However, those elderly who did not live with their spouses (widowed, divorcee, single) have lower odds of becoming disabled over their counterparts who lived with their spouses. But it was found to be statistically not significant. Those elderly who were illiterate and unemployed, by and large have higher odds of becoming disabled over those who were literate and gainfully employed, but these lacked statistical significance.

## Discussion

In this study the prevalence of disability in ADL was found to be 12.2%. Comparable prevalence of 10.3% was reported by another study conducted by Nugegoda et al in an urban area of Sri Lanka <sup>3</sup>. Higher prevalence was reported by Fuch et al but it might be because the study population consists of mainly the oldest old <sup>4</sup>. The present study has also revealed a high proportion of disability with some factors like age, sex, presence of chronic diseases and poor perceived health status. A study conducted in urban districts of Delhi showed that ADL

impaired women outnumbered men in considerable proportion in contrast to our study. It also showed that an individual with multiple diseases was far more likely to suffer from disabilities than those with a good health legacy. Another significant factor contributing to disability was the person's age. These findings were in accordance with the observations from our study<sup>5</sup>. Margeret KH et al reported that those elders who perceived their health as fair or poor reported significantly more disability in ADL in agreement with our findings <sup>6</sup>. It was also observed from another study by Audinarayana N et al conducted in Tamil Nadu that those elders who were unemployed, widowed and illiterate were more disabled in ADL which was also supported by our findings <sup>7</sup>.

## Conclusions

Out of 312 elders studied, 38 (12.2%) were found disabled in ADL. Elderly males, with poor perceived health status and having one or more chronic diseases have significantly higher odds of disability in ADL. This study finding could be taken as an indication for having basic and primary geriatric health care services including rehabilitation involving the family and community. There is a need to conduct further studies on the magnitude of the disability problems and their coping strategies in the community.

## References

1. Govt. of India: Health Information of India, 1995-1996. Ministry of Health and Family Welfare, New Delhi, 1998.
2. Katz S, Amasa BF, Roland WM, Beverly AJ and Marjorie WJ. Studies of illness in the Aged, The Index of ADL: a standardized measure of biological and psychological function. JAMA 1963; 185(12): 914-9.
3. Nugegoda D, Balasurya S. Health and social status of an elderly urban population in Sri Lanka. Social Science and Medicine 1995; 40: 437-42.
4. Fuch Z, Blumstein T, Novikov I, Walter Ginzburg A. Morbidity, comorbidity and their association with disability among community dwelling oldest old in Israel. J Gerontol Biol Sci Med Sci 1998; 53(6): M 447-M 455.
5. Moneer A, Mukta M. Ageing, ADL Disabilities and Need for Public Health Initiatives. Institute of Economic Growth, Delhi. Nov 2003; [21 screens]. Available at URL: <http://ieg.nic.in/work/moneer241.pdf>. Accessed April 9, 2007.
6. Margeret KH, Allen MJ, Philip AW, Ralph BD, Patricia MO. Functional Limitations and Disability among elders in the Framingham Study. Am J Public Health 1992; 82: 841-5.
7. Audinarayana N, Sheela J. Physical disability among the elderly in Tamil Nadu: Patterns, differentials and determinants. Health and population perspectives and Issues 2002; 25(1): 26-37.