Original Research Article

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A study on disability in terms of activities of daily living among elderly in Palam village of west Delhi

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ABSTRACT

Background: 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 as well. The objective of the present study was to assess the prevalence of activities of daily living (ADL) disability in elderly living in Palam village of Delhi.

Methods: A community based cross-sectional study was carried out to assess the prevalence of ADL disability in elderly living in Palam village of Delhi using Barthel ADL index. It uses ten variables describing ADL and mobility. The sample size was estimated to be 350 and systematic random sampling was used to choose the study subjects.

Results: The prevalence of ADL disability was found to be 20.3% in the study population. This was found to be 16.3% in males and 23.9% in females.

Conclusions: After obtaining adequate data on elderly having difficulty in performing their routine activities of daily living, appropriate steps needs to be taken to mitigate its ill effects which should also address their health care needs and help them to live a healthy and good quality life.

Keywords: Elderly, Activities of daily living, Disability

INTRODUCTION

Elderly or old age consists of ages nearing or surpassing the average life span of human beings. In India persons of age 60 years or above are considered as senior citizen or elderly.¹

Low birth rates coupled with long life expectancies push the population to an ageing humanity. The phenomenon of population ageing is becoming a major concern for the policy makers all over the world, for both developed and developing countries during last two decades.²

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 as well.³

International classification of functioning, disability and health (ICF) has used functioning as an umbrella term encompassing all body functions, activities and participation. Similarly disability serves as an umbrella term for impairment, activity limitation and participation restriction.⁴

Very old people, due to their reduced mobility and debilitating disabilities, need other people to do things for them. With the increasing trend of nuclear families in the society and with fewer children in the family, the care of older persons in the families gets increasingly difficult. Maintaining health of the elderly is very significant for

any country and it holds special importance in India as many of them have to continue to work even when they becomes senior citizens, so good health is what can keep them and their families going on.

METHODS

Study type

An observational study.

Study design

A community based cross-sectional study.

Study area and period

The community based cross-sectional study was carried out in Palam village in West Delhi from January to December 2016 which is one of the field practice area of Community Medicine Department, Lady Hardinge Medical College, New Delhi.

Study methodology

A semi-structured interview schedule was administered to all the study subjects for obtaining socio-demographic details. Sample size was calculated using the prevalence of 19% (at least one ADL restriction), absolute error of 5%, (confidence interval=95%, power=80%).⁵ Taking design effect of 1.25 and response rate of 90%, the effective total sample size was 350.

According to population census 2011, >60 years population constitutes around 9% of total population. In Palam village, elderly population is around 960 of the total population of Palam village which is around 10700, (2015). 1st house was selected randomly and subsequent houses were selected by systematic random sampling (every 2nd house was taken to choose the study subjects). To get the total sample size of 350 elderly, we had to screen 418 households. People aged more than 60 years of both sexes in the study area and willing to participate were included in the study while those who are known case of psychiatric illness or refuse to give informed

consent were excluded from the study.

The Barthel ADL index, an ordinal scale, freely available was used for assessment of activities of daily living disability (ADL Disability) in the study.6,7 It uses ten variables describing ADL and mobility. Each performance item is rated on this scale with a given number of points assigned to each level or ranking yielded a score of 0-20. The ten variables addressed in the Barthel scale are as presence or absence of fecal incontinence. presence or absence incontinence, help needed with grooming, help needed with toilet use, help needed with feeding, help needed with transfers, help needed with walking, Help needed with dressing, help needed with climbing stairs and help needed with bathing. ADL disability is defined in the study subject if the total score in Barthel ADL index is <20.6,7

Data entry and statistical analysis

Data entered in proforma subsequent to interview was checked for correctness manually before entering them into a spreadsheet database created and analysis which was done using Statistical Package for Social Sciences (SPSS version 19).

RESULTS

The study population consisted of 166 (47.4%) males and 184 (52.6%) females. Mean age of the study subjects was 67.40±6.63 years, range is 60-93 years. Majority of the study subjects (94.9%) were Hindu while 3.7% were Muslims and 1.4% was Sikhs. On the basis of educational status it was seen that majority of the study subjects (47.1%) were illiterate. Among males, 22.3% were illiterate and 22.9% had education up to primary school and 8.4% were having graduate or post graduate degree. Among females 69.6% were illiterate, only 9.2% had education up to primary school and 5.1% were having graduate or post graduate degree. There were 80.7% of currently married males compared to 57.6% of currently married females and 42.4% of females were widows compared to 18.7% males who were widowers. However there were 0.6% of never married males compared to none amongst females.

Table 1: Socio-demographic characteristics of the study population.

	Sex of the subject	Total (n-250)	
Characteristics	Male (n=166)	Female (n=184)	Total (n=350)
	N (%)	N (%)	N (%)
Age (in years)			
60-69	107 (64.5)	124 (67.4)	231 (66.0)
70-79	44 (26.5)	44 (23.9)	88 (25.1)
80 and above	15 (9.0)	16 (8.7)	31 (8.9)
Religion			
Hindu	158 (95.2)	174 (94.6)	332 (94.9)
Muslim	5 (3.0)	8 (4.3)	13 (3.7)
Sikh	3 (1.8)	2 (1.1)	5 (1.4)

Continued.

	Sex of the subjec	Sex of the subject		
Characteristics	Male (n=166)	Female (n=184)		
	N (%)	N (%)	N (%)	
Educational status				
Illiterate	37 (22.3)	128 (69.6)	165 (47.1)	
Primary school	38 (22.9)	17 (9.2)	55 (15.7)	
Middle school	15 (9.0)	7 (3.8)	22 (6.3)	
High school certificate	44 (26.5)	20 (10.9)	64 (18.3)	
Intermediate or post high school diploma	16 (9.6)	7 (3.8)	23 (6.6)	
Graduate or post graduate	14 (8.4)	4 (2.2)	18 (5.1)	
Professional	2 (1.2)	1 (0.5)	3 (0.9)	
Marital status				
Married	134 (80.7)	106 (57.6)	240 (68.6)	
Unmarried	1 (0.6)	0 (0.0)	1 (0.3)	
Widow or widower	31 (18.7)	78 (42.4)	109 (31.1)	

^{*}Figures in bracket represent column percentage.

Among males, 57.8% reported their spouse as their primary care givers, daughter in law by 22.3% and 1.2% of males reported no primary caregivers for them.

Whereas 23.9% of females reported their spouse, 50.5% reported daughter in law as their primary care givers and 5.9% reported no primary care givers for them.

Table 2: Primary caregivers of the study population.

	Sex of the subject	Sex of the subject		
Care giver (relationship)	Male (n=166) Female (n=184)		Total (n=350)	
	N (%)	N (%)	N (%)	
Spouse	96 (57.8)	44 (23.9)	140 (40.0)	
Daughter in law	37 (22.3)	93 (50.5)	130 (37.1)	
Children	24 (14.5)	24 (13.0)	48 (13.7)	
Other relatives	7 (4.2)	12 (6.5)	19 (5.4)	
None	2 (1.2)	11 (5.9)	13 (3.7)	

The prevalence of ADL disability was found to be 20.3% in the study population. This was found to be 16.3% in

males and 23.9% in females. An increasing trend in the prevalence was noted with increase in age of study subjects.

Table 3: Prevalence and distribution of ADL disability in study population.

	Distrib	Distribution of ADL disability					
Age group (in years)	Male	Male		Female		Total	
	N	Present	NT	Present	N	Present	
	N	N (%)	N	N (%)		N (%)	
60-69	107	6 (5.6)	124	7 (5.6)	231	13 (5.6)	
70-79	44	8 (18.2)	44	25 (56.8)	88	33 (37.5)	
80 and above	15	13 (86.7)	16	12 (75)	31	25 (80.6)	
Total	166	27(16.3)	184	44(23.9)	350	71 (20.3)	

DISCUSSION

The study population consisted of 350 elderly out of which 166 (47.4%) were males and 184 (52.6%) were females giving a sex ratio of 1108, in favour of females matching with the population census 2011 data in which the sex ratio among elderly people was found to be 1033. The age and sex distribution of the study subjects in our study (Table 1) was similar to the studies conducted by Gupta et al among elderly persons in a rural area of Haryana, Singh et al in rural area of Patiala District,

Goswami et al in Ballabhgarh district of Faridabad, Haryana **as** majority of the elderly population was in the 60-69 year age group and females were more than males. 8-10

As in present study and studies done by Gupta et al, Konjengbam et al and Goswami et al, similar findings were seen on the basis of marital status of the study subjects (Table 1). 8,10,11 The very low percentage of never married elderly can be attributed to almost universal following of institution of marriage in India.

In the present study, spouse was elicited as the primary caregiver by majority of the elderly followed by daughter in law (Table 2). Similar findings were seen in the studies done by Mandal et al in Delhi and Bisht et al in Nepal. ^{12,13}

Using the 10 items Barthel scale, prevalence of ADL disability in the present study was found to be 20.3% (Table 3). It was found to be 22% in study done by Venkatarao et al and 16% in study done by Chakrabarty et al. ^{14,15} Day et al reported prevalence of ADL disability only 6.9% as it was a hospital based and included the elderly who attended the geriatric clinic only. ¹⁶

The prevalence of ADL disability in the present study was similar to some studies done in countries like Japan (20%), Malaysia (19.8%). ^{17,18} However lesser prevalence was noticed in studies carried out in USA (15%) done by Chaudhry et al, which can be due to better health care facilities and health seeking behaviour of the study population in that geographical portion. ¹⁹ The prevalence was reported to be higher in studies done in other developing countries like Nigeria (28%) and Brazil (40%). ^{20,21}

Konjengbam et al conducted a cross sectional study in Imphal and found 12.2% of elders to be disabled in ADL, and it was reported to be 15.5% by Pereira et al in their study done in Porto Alegre, Brazil. However both the studies used Katz index to evaluate basic activities of daily living.

CONCLUSION

Maintaining health of the elderly is very significant for any country and it holds special importance in India as many of them have to continue to work even when they becomes senior citizens, so good health is what can keep them and their families going on. Appropriate social and economic policies need to be made specially focussing on elderly with disability to mitigate its ill effects which should also address their health care needs also and help them to live a healthy and good quality life.

Recommendations

The health policies and programmes running for the welfare of the elderly must adopt a life cycle approach which tackle health problems from the beginning and enable people to grow older with minimum of disabilities. Elderly living without families or under difficult conditions should be identified in the community and proper care should be provided to them with the help of health workers. Social security schemes and medical benefits for the elderly should be strengthened up and made available to larger sections of the elderly. Elderly needing supportive items like walking sticks or calipers, walker (ordinary) etc., should be identified and should be provided with them starting from the sub centre level only.

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Institutional Ethics Committee

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