Original Research Article

Activities of daily living amongst inmates of home for aged in Nagpur, Maharashtra, India: a cross sectional study

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ABSTRACT

Background: Although persons of all ages may have problems performing the Activities of Daily Living (ADL), prevalence rates are much higher for the elderly (65 years and over) than for the non-elderly. Elderly population face many problems. They become economically dependent on family for their basic needs and health care. Due to nuclear family norm, there is no place for elderly parent who feel alone and insecure. The study was undertaken to assess activities of daily living and reasons for admitting in home for aged amongst them. Objectives of present study were to assess the activities of daily living (ADL) and to identify the reasons for admitting in home for aged, in two homes for aged in Nagpur city, Central India.

Methods: A cross sectional study was undertaken in two homes for aged namely Panchvati Vridhashram, Umred road and Home for aged, Untakhana, Nagpur, Maharashtra, India. Total 176 study subjects had consented for participation in study.

Results: Mean age of study subjects was 73.47±6.06 year ranging from 61 to 90 years. Proportion of female inmate was 55.11%. Around one-fifth of study subjects (19.32%) were illiterate. Significantly more illiterate study subjects were of female gender (chi- square=5.78, d.f.=1, P=0.016). Mean duration of stay in home for aged was 5.29±3.29 years with the range of 9 months to 17 years. Number of study subject's dependent for at least one ADL was 37 (21.02%). Amongst dependents 32 (18.8%) inmates were partially dependent with ADL score of 1-5 and only 5 (2.85%) inmates were totally dependent with ADL score of 6-12. The proportion of inmates with dependency for at least one activity of activities of daily living increases as the age increases. Positive liner trend was observed between age and dependency (r=0.1971, P=0.0087).

Conclusions: Prevalence of ADL dependency was 21.02% among the inmates of home for aged. Dependency for activities of daily living increases with increase in age. Major reasons for admission to the home for aged were - no one to look after, strained relation with family members and economic constraints. There is need for economic assistance through social security to economically dependent inmates.

Keywords: Activities of daily living, Cross sectional study, Dependency score, Elderly, Home for aged

INTRODUCTION

The number of aged is increasing rapidly. It carries important social and economic implications. The problems faced by aged persons are multiple, multi-dimensional, not merely medical problems but other problems like socio-economical, emotional, psychological, rehabilitative and related to social security.[1] Elderly population face many problems. They become economically dependent on family for their basic needs and health care. Due to nuclear family norm, there is no place for elderly parent who feel alone and insecure.

After retirement elderly lose their status in the society often feel lonely, useless and helpless. In western countries, there are well established old age homes for the elderly and nursing homes for the infirm and disabled elderly. In India home for aged is a new concept, yet in the developing stage and has been limited to large urban areas.[2] The world elderly population which was 6.6% i.e. 390 million in 1997 is expected to increase to 800 million i.e. 10% by 2025. The proportion of elderly in India was 8.6% of total population in year 2011.[3]

The increase in life expectancy has been most dramatic in developing countries during past 50 years. In India, life expectancy which was 32 years for men and 31 years for women in 1941 has increased to 60 years by 1993. Life expectancy at birth in year 2015 was 68.3 years (66.9 for male and 69.9 for females). And will reach a level of 73 years by 2025.[4] Although persons of all ages may have problems performing the Activities of Daily Living (ADL), prevalence rates are much higher for the elderly (65 years and over) than for the non-elderly. Within the elderly population, disability rates could rise steeply with advancing age and are especially high for persons aged 85 and over. In many developed societies, ADL dependency measures are vitally important for insurance companies etc. to determine whether an individual qualifies for benefits.[5]

Old Age Home is the institution where the older person is admitted in, to meet his needs there. She/he spends his old age in the company of the people, who are similar to him/her in age, state of health, mental make-up and outlook towards life.[6] A new culture of "peer group participation" being attempted by old persons appears to be taking root in many parts of urban India; "Home for Aged" is rapidly becoming a choice for many "abandoned", "left out" or "neglected" old persons with or without survival resources.[7]

Considering all the above mentioned social facts and age related problems in inmates of home for aged, the study was undertaken to assess activities of daily living and reasons for admitting in home for aged amongst them.

METHODS

The present cross sectional study was carried out at two different homes for aged in Nagpur city to study activities of daily living (ADL) and reasons for admitting in home for aged. 'Panchvati Vridhashram', Umrer road and 'Home for aged', Untakhana, Nagpur, Maharashtra, India were selected purposively. Study was carried out from July 2011 to June 2012.

Sample size was calculated assuming prevalence of at least one restricted activities of daily living among elderly to be around 22%.[8] For estimating true ADL prevalence with 20% precision and 99% confidence interval, required sample size was n=114. Since this sample size could not be achieved with only one home for aged, all inmates in two such centres were included in study. Therefore, actual sample size was 176.

Ethical clearance from institutional ethics committee was obtained prior to study. The object of the study and method was explained to authorities of home for aged. Written permission to conduct the study was sought from authorities of both the homes for aged. Informed consent of the study subjects was also obtained prior to interview.

A predesigned pretested proforma was used to record the information and findings in each inmate. The study subjects were interviewed in a separate room at home for aged. Rapport was established with the study subjects prior to the examination. Demographic information and socioeconomic details of the study subjects where obtained. Modified Kuppuswamy scale was used to assess socioeconomic status.[9] Information was obtained about Activities of Daily Living (ADL) using Katz's scale for Activities of Daily Living.[10] Dependency score for activities of daily living were assessed.[11] Information regarding economic dependency, visit by relatives, visit to relatives, leisure time activities, feeling about neglected in the family and reason for admission to home for aged were enquired and noted in proforma.

Statistical analysis

Descriptive statistics like mean, standard deviation, range were used to summarize quantitative variables while percentages and proportions were used to summarize categorical variables. Associations between two categorical variables were analysed by using Chi -Square test. Linear trends in morbidities were assessed by Chi-square test for trend and Pearson's correlation coefficient. P value <0.05 was statistically significant. Data was analyzed using STATA (10.1 version, 2009) statistical software.

RESULTS

The present cross sectional study was carried out at two different homes for aged in Nagpur city, Central India to study the activities of daily living (ADL) and reasons for admitting in home for aged. Total 176 study subjects were participated in study. In Panchvati Vridhashram, Umrer road, there were 76 inmates and in Home for Aged, Unttakhana, there were100 study subjects. There were 79 males and 97 female study subjects. Characteristics of study subjects were described in Table 1.

Mean age of study subjects was 73.47±6.06 year and ranging from 61 to 90 years. Majority of study subjects were Hindu 135 (76.70%), followed by Christian 25 (14.20%), Buddhist 13 (7.39%) and Muslim 3 (1.71%). The higher percentage of Hindus could be due to higher percentage of Hindus in general population. As Home for Aged, Untakhana, runs by Christian organization relatively higher percentage of Christian inmates.

Illiterate study subjects were 34 (19.32%). Significantly more illiterate study subjects were of female gender (chi-square = 5.78, d.f. = 1, P = 0.016).

Maximum number of inmates 82 (46.59%) were belonging to upper lower class as per Modified Kuppuswami's socio- economic scale, followed by 77

(43.75%) to lower middle class, 13 (7.39%) in upper middle class and 4 (2.27%) in lower class. There was no subject belonging to upper class.

Majority of inmates 136 (77.27%) were economically dependent. Mean duration of stay in home for aged was 5.29±3.29 years with the range of 9 months to 17 years.

Table 1: Characteristics of study subjects.

Characteristics	Study subjects				Total (n=176)	
	Male (n=79)		Female (n=97)			
	No	%	No	%	No	%
Age in years						
60-64	01	01.27	04	04.12	05	02.84
65-69	15	18.98	24	24.75	39	22.16
70-74	29	36.71	32	32.99	61	34.66
75-79	14	17.72	22	22.68	36	20.45
≥ 80	20	25.32	15	15.46	35	19.89
Literacy status						
Literate	70	88.61	72	74.23	142	80.68
Illiterate	09	11.39	25	25.77	34	19.32
Marital status						
Married	02	02.53	02	02.06	04	02.27
Unmarried	18	22.79	14	14.43	32	18.19
Divorced	02	02.53	01	01.03	03	01.70
Widower/Widow	54	68.35	79	81.45	133	75.57
Separated	03	03.80	01	01.03	04	02.27
Economic dependency						
Independent	19	24.05	17	17.53	36	20.45
Dependent	60	75.95	80	82.47	140	79.55
Frequency of visits by relatives and/or friends						
Monthly	01	01.27	01	01.03	02	01.14
Occasionally	71	89.87	95	97.94	166	94.32
Never	07	08.86	01	01.03	08	04.54
Frequency of visit to relatives and/or friends						
Monthly	01	01.27	00	00.00	01	00.57
Occasionally	68	86.07	92	94.85	160	90.91
Never	10	12.66	05	05.15	15	08.52
Feeling neglected in family						
Yes	34	43.04	59	60.82	93	52.84
No	45	56.96	38	39.18	83	47.16
Leisure time activity						
Watching TV	65	82.28	58	59.79	123	69.89
Visit to temple	06	07.59	46	47.42	52	29.55
Routine work	23	29.11	22	22.68	45	25.57
Reading	14	17.72	24	24.74	38	21.59
Listening to radio	08	10.13	03	03.09	11	06.25
Meditation	03	03.80	02	02.06	05	02.84
Other	02	02.53	08	08.25	10	05.68

Table 2 shows gender wise distribution of study subjects as per index of independency for activities of daily living. There were 139 (78.98%) inmates independent in all six basic activities of daily living. Numbers of study subject's dependent for at least one ADL were 37 (21.02%). Table 3 shows distribution of study subjects

with respect to dependency score for activities of daily living and gender. Out of 176, 32 (18.8%) inmates were partially dependent with ADL score of 1-5 and only 5 (2.85%) inmates were totally dependent with ADL score of 6-12.

Table 2: Gender wise Distribution of study subjects as per index of independency for activities of daily living (ADL).

Index of independency	Study subjects				Total	
	Male		Female			
	No.	%	No.	%	No	%
A	59	74.68	80	82.47	139	78.98
B	7	08.86	9	09.28	16	09.09
C	2	02.53	0	00.00	2	01.14
D	6	07.60	6	06.19	12	06.82
E	3	03.80	1	01.03	4	02.27
F	2	02.53	1	01.03	3	01.70
G	0	00.00	0	00.00	0	00.00
Other	0	00.00	0	00.00	0	00.00
Total	79	100.00	97	100.00	176	100.00

A. Independent in all six functions; B. Independent in all but one of these functions; C. Independent in all but bathing and 1 additional functions; D. Independent in all but bathing, dressing and one additional function; E. Independent in all but bathing, dressing, toileting and one additional function; F. Independent in all but bathing, dressing, toileting and transferring and one additional function; G. Dependent in all 6 activities; Other: Dependent in at least 2 functions but not classifiable as C, D, E or F.

Table 3: Distribution of study subjects with respect to dependency score for activities of daily living by gender.

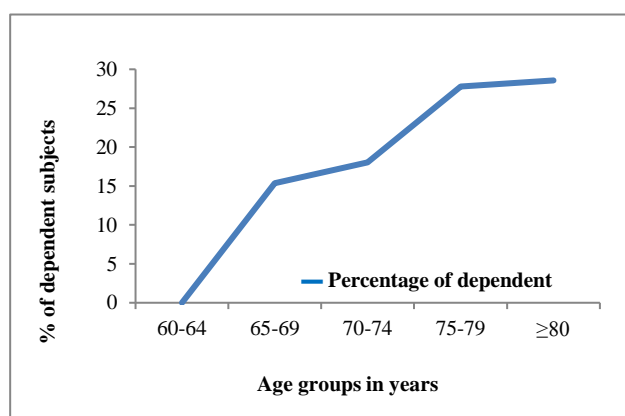| Dependency score	Study subjects				Total	
	Male		Female			
	No.	%	No.	%	No	%
0	59	74.68	80	82.47	139	78.97
1 to 5	17	21.52	15	15.47	32	18.18
6 to 12	03	03.80	02	02.06	05	02.85
Total	79	100.00	97	100.00	176	100.00

Figure 1: Line diagram showing percentage of study subjects dependent for ADL according to age groups.

Figure 1 line diagram shows, percentage of study subjects dependent for activities of daily living according to age groups. The proportion of inmates with dependency for at least one activity of Activities of Daily Living increases as the age increases. Positive liner trend was observed between age and dependency (r = 0.1971, P = 0.0087). Table 4 shows distribution of study subjects according to reason for admission to home for aged.

Table 4: Study subjects according to reason for admission to home for aged.

Reasons for admission	Total (N= 176)	
	No	%
No one to look after	94	53.41
Strained relation with family members	72	40.91
Economic constraints	28	15.91
By choice	08	04.54
Children not willing to take care	05	02.84

DISCUSSION

The present cross sectional study was carried out at two different homes for aged in Nagpur city to assess the Activities of Daily Living and reasons for admitting.

There were total 176 inmates in both homes for aged. More proportion of female i.e. 55.11% was found among inmates of home for aged in this study. This could be because of life expectancy of female is more than male and widows generally are force to stay in home for aged by their relatives. Similar findings were observed by Sabeen Ara and Dawale AK.[2,12] Maximum number of inmates 61 (34.66%) were in the age group 70-74 years.

Illiterate inmates were 34 (19.32%) this was less as compared to Venkoba Rao et al in their study proportion of illiterates was 59.5% and Shashikant et al found that majority 65% were illiterate.[13,14] Literacy rate has improved over the years. Proportion of widow or widower was 75.57% while Venkoba Rao et al reported the proportion of widow or widower as 48.5% and Shabeen Ara reported majority of the elderly 66% were widowed.[2,13] Dawale AK et al found in their study 147 (66.52%) were widow or widowers.[12] Majority of study subjects 140 (79.55%) inmates were economically dependent while 36 (20.45%) were economically independent. Similar findings were reported by Shashikant et al in their study they found 79% were economically dependent, while 21% were economically independent. Dawale AK et al reported that 81% inmates were economically dependent.[12,14]

Study observed 37 (21.02%) inmates were dependent for one or more activities of daily living, while 139 (78.98%) inmates were independent in all six basic Activities of Daily Living. Similar observation was reported Venkatrao T et al observed the prevalence of at least one restricted activities of daily living in 22%.[8] However, Krishnamachari Srinivasan et al reported that only 6.2% of the elderly had restriction of ADL. Ball Mary M et al observed 59% of elderly reported needing no assistance with any ADL and 41% subjects were dependent for at least one.[15,16]

The proportion of inmates with dependency for Activities of Daily Living increases as the age increases. Positive liner trend was observed between age and percentage of subjects' dependent for ADL (r=0.1971, P=0.0087). Similar finding of increasing dependency for activities of daily living increases as the age increases was observed by Srinivasan K et al, Venkatrao T et al and Ball Mary M et al.[8,15,16] Reasons for admission to the home for aged were - no one to look after in 94 (53.4%) inmates, strained relations with family members in 72 (40.9%) inmates and economic constraints in 28 (15.9%) inmates, 8 (4.54%) inmates selected by choice to stay in home for aged and children not willing to take care was the reason in 5 (2.84%) inmates. Dawale AK et al the reason for admission to old age home were loneliness in 34.84%, strained relations with family members in 17.65% inmates, physical disability in 9.05% inmates, no accommodation in 4.52% inmates, low economic condition of family in 2.72% inmates.[12] Similar observations noted by Anitha M, Mishra AJ Sarkar S.[17-19]

CONCLUSION

In this cross-sectional study of home for aged in Nagpur city, every one out of five inmates were found dependent for ADL. Dependency for ADL increases as age increases. Major reasons for admission to the home for aged were no one to look after, strained relation with family members and economic constraints. Subjects dependent for activities of daily living should be provided special attention. There is need for economic assistance through social security to economically dependent inmates. More efforts for increasing recreational activities for inmates of home for aged in their leisure time.

REFERENCES

1. World Health Organization. Old age – a problem for society as a whole. WHO Chronicle. 1974;28:487-94.
2. Ara S. Old-age homes & the profile of their residents. Indian J Med Res. 1997;106:409-12.
3. Dhar HL. Emerging geriatric challenges. J Assoc Phys India. 2005;53:867-72.
4. World Health Organization. Technical Report Series no. 548, Planning and organization of geriatric services, 1974.
5. Chadha NK, Chao D, Bhatia H, Rohatgi M, Mir U. Activities of Daily Living and Its Correlates Among Elderly. Indian J dermatology. 2006;20(20):135-58.
6. Mahapatra S. Second home after home for elderly: A study of age homes in the Globalized Era. Ind J Geront. 2010; 24(1):115-22.
7. Kalavar MJ, Jamuna D. Senior resident of pay and stay homes: an examination of health and physical activity. Indian J Gerontology. 2006;20:21-34.
8. Venkatrao T, Ezhil R, Jabbar S, Ramakrishnan R. Prevalence of disability and handicaps in geriatric population in rural south India. Indian J pub Health. 2005;49(1):11-7.
9. Mishra D, Singh HP. Kuppuswamy's Socioeconomic Status Scale - A Revision. Indian J Pediatrics. 2003;70:92-4.
10. The Wellbeing of elderly Gerda G Fillenabum, World Health organisation. Geneva. 1984.
11. Katz S, Downs TD, Cash HR, Grotz RC. Progress in the development of the index of ADL. Gerontologist. 1970;10(1):20-30.

12. Dawale AK, Mudey A, Lanjewar A, Wagh VV. Study of Morbidity Pattern in Inmates of Old Age Homes in Urban Area of Central India. J The Indian Academy of Geriatrics. 1997;6(1):23-7.

13. Venkoba Rao A, Madhvan T. Geropsychiatric morbidity survey in a semiurban area near Madurai. Indian J Psychiatry. 1982;24:258-67.

14. Shashikant, Mishra P, Goswami A. Morbidity among elderly persons residing in a resettlement colony of New Delhi Indian. J Preventive Social Medicine. 2004;35:1-9.

15. Srinivasan K, Vaz M, Thomas T. Prevalence of health related disability among community dwelling urban elderly from middle socioeconomic strata in Bangaluru, India. Indian J Med Res. 2010;13:515-21.

16. Ball MM, Perkins MM, Whittington FJ, Hollingsworth C, King SV, Combs BL. Independence in assisted living. J Aging Studies. 2004;18(4):467-83.

17. Rani AM, Palani G, Sathiyasekaran BW. Morbidity profile of elders in old age homes in Chennai. Natl J Comminty Med. 2011;2(3):378-82.

18. Mishra AJ. A study of loneliness in an old age home in India: A case of Kanpur. Ind J Geron. 2003;17(1-2):136-46.

19. Sarkar S. Morbidity profile of aged population of old age homes in Calcutta. Indian J Public Health. 2003;47(2):78-9.