

Cognitive Status Among Rural Elderly Women

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Abstract:

The aim of this study was to determine the prevalence of cognitive impairment and to determine the association between cognitive impairment with socio-demographic factors among rural elderly women (n= 400). The study was undertaken in the villages of Rural Health Centre, Chandragiri, Chittoor district, as part of field practice centre for Community Medicine, Sri Venkateswara Medical College, Tirupati. Results indicate that 32% of study subjects had cognitive impairment and there was statistically significant association among cognitive impairment and determinants like age, occupation and life satisfaction.

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Introduction

The prevalence of aging population is increasing not only in developed countries but also in developing countries like India. The ageing of the world's population is a global phenomenon with extensive economic and social consequences. The ratio of the elderly population (60 years and older) is now 1 in 10. By the year 2050, the ratio would have increased up to 1 in 5. This older population will continue to age. Currently people aged 80 years and older represent 11% of the population aged 60 and above. By 2050, those over 80 will represent 27% of this older population.¹ Ageing of a population is a matter of great concern for the health sector.

In view of lifelong experience and wisdom, elderly are a precious resource not only for the families but also for the nation. Elderly women constitute a distinct proportion of older population and their health needs are different from those of other groups in the community. The lives of elderly women in rural areas are distinctly different from urban areas in terms of social, economic and cultural parameters and health care related factors. Though there is a greater demand for health services for the elderly, in India the epidemiological surveys are

still focusing on communicable diseases, maternal and child health to a large extent, little attention is being paid to the health issues and care service needs of the rural elderly.

Ageing is associated with a generalized decrease in efficiency in the body's physiological system and natural defense mechanism. In addition to these the adverse social and environmental factors may lead to increased morbidity.² The NSSO survey reported that the proportion of aged persons (in India) with chronic diseases varied between 443 and 455 per thousand and there were no marked urban - rural and gender differences.³ The well being of older persons has been mandated in the constitution on India. Article 41, which is a directive principle of state policy, has directed that state shall make effective provisions for securing the rights to public assistance in case of old age. Rights of equality have been guaranteed as a fundamental right, which applies, to older persons as well.⁴

Due to breakdown of joint family system and tremendous influence of modern lifestyles on the younger generation, the attitudes of the young people towards old age are constantly changing and thus for many, old people in the house become a sort of burden and liability. It is rather difficult for the elderly to change their ideas, views and opinions suddenly to adjust with the younger generation. Supportive close relationships is particularly crucial for the elderly who have left their spouse or other close relation. Many old people belonging to lower and middle class groups do not have

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Table 1: Distribution of study subjects by age.

Age in years	Elderly women (n=400)	%
60 - 64	74	18.50
65 - 69	191	47.75
70 - 74	85	21.25
75 - 79	25	6.25
≥80	25	6.25

enough savings to take care of their needs and are economically dependent. Their children are their security and they would prefer to stay independently in the near vicinity of their children and would like to retain their independence.

Psychological well being is an important aspect of health. Like other human beings, elderly also have various psychological problems like memory impairment, depression, sleeplessness, fear, anxiety, social adjustment, insecurity etc. These problems may be due to physiological as well as social factors.^{5,6,7} Cognitive impairment may cause functional problems for the older people.

Since there is a dearth of information on community based rural studies on mental problems, there is a need for such study in Indian conditions which will help us to lead to earlier diagnosis and treatment of cognitive impairment among elder people. Hence this study is carried out on rural elderly women with the following objectives:

1. To study the cognitive status in the rural elderly women.
2. To study the effect of socio-demographic factors on cognitive impairment in the study subjects.

Material and Methods

This study was carried out in 19 villages covered by the field practicing areas of Chandragiri Rural Health Centre of SV Medical College in Chittoor district of Andhra Pradesh from February 2001 to January 2002.

Data collection was carried out on 400 older women (60+) by house-to-house visit in the study villages. In each household, the head of the family or any other responsible adult was contacted and the nature of the study was explained to them. Information regarding age was crosschecked by asking their children’s age, and in relation to some major events and verification with the records like ration card. 400 elder women were interviewed in their local language and examined. All the women voluntarily participated

in the interview and underwent health check ups. As per the interview schedule, the socio-demographic information of the sample was collected. Socio-economic status of the women was assessed using the modified version of Udai Pareek classification.

Folstein Mini Mental State Examination (MMSE) questionnaire (Folstein & Folstein) was used to determine cognitive status of the subjects.⁸ The instrument evaluates the performance of orientation to time, place, memory, attention, concentration, recognition of objects, language function, comprehensive and expressive speech, motor function and proxies by giving a score of one for each correct reply. The responses were graded as scores. Maximum score a person can get is 30. Suitable changes were made to MMSE questionnaire after a pretest, based on suggestions from a psychiatrist in order to make it more relevant to the local conditions. A woman was diagnosed to be having cognitive impairment if the score was less than 24.

The data was analyzed using Epi Info 6.04d and SPSS version 12.0 software. For comparison of proportion, chi-square test was used.

Results

The mean age of the sample was 67.0 ± 5.2 years. In the total sample, 265 subjects (66.25%) were in 60-69 years, 110 (27.50%) in 70-79 years and 25 (6.25%) in 80 years and above (Table 1).

The cognitive defect was found to be 32% in elderly women (Table 2). As age increased there was a statistically significant decline in cognitive status. Higher proportion of cognitive impairment was observed in women aged 80 years and above (76.0%) compared to 60-69 years group (1.5%).

The variables like age > 70 years, being widowed, presently not working, staying with others and having no satisfaction with life were found to be significantly associated with cognitive defect where as caste, literacy, socio-economic status, type of family, relation to head of the family, status in the family were not found to have any bearing effect on cognitive defect in the bivariate analysis. (Table 3).

It is evident from the multiple regression analysis (step wise) that age, life satisfaction and occupation together contributed 79.5% of variance to the total variance in cognitive impairment. The variable age accounted around 79.0% of variance, life satisfaction

Table 2: Distribution of elderly women by age and cognitive impairment.

Age in years	Cognitive Impairment				Total
	Present < 24		Absent > 24		
	No.	%	No.	%	
60 - 69	4	(1.5)	261	(98.5)	265
70 - 79	105	(95.5)	5	(4.5)	110
> 80	19	(76.0)	6	(24.0)	25
Total	128	(32.0)	272	(68.0)	400

$\chi^2 = 339.01$; $df = 2$; $p < 0.000$

Table 3: Determinants of cognitive defect among aged (Bivariate Analysis)

Variables	Crude Odds Ratio	CI	χ^2	p
Age	0.13	0.04 – 0.35	23.73	<0.000
≤ 69 years				
> 70 years				
Caste	1.05	0.61 – 1.65	0.06	>0.81
OC				
BC, SC, ST				
Marital Status	3.58	1.97 – 6.59	20.97	<0.000
Widowed				
Married				
Literacy	1.87	0.64 – 5.91	1.52	>0.22
Illiterate				
Literate				
Occupation	0.13	0.08 – 0.22	75.49	<0.000
Working				
Not working				
SE Status				
Lower	0.99	0.57 – 1.74	0.00	>0.97
Middle	0.63	0.30 – 1.35	1.67	>0.20
Higher				
Family Type	1.29	0.83 – 2.00	1.45	>0.23
Nuclear				
Joint				
Relation to HOF	1.41	0.76 – 2.61	1.40	>0.24
Others (sister, mother-in-law etc)				
As mother, wife or HOF				
Status in the family	1.61	0.78 – 3.30	1.97	>0.16
Neglected				
Respected				
Staying with	2.68	1.46 - 4.91	12.07	<0.000
Others (Brother, son-in-law etc)				
Son, husband, grand-son				
Life satisfaction	21.87	12.17 – 39.58	1154.27	<0.000
No satisfaction with life				
Satisfaction with life				

Table 4: Stepwise linear regression analysis showing the results of cognitive impairment.

Step no.	Variable entered	R ²	Increase in R ²	F Ratio to enter/ to remove	Significance
1	Age	0.790	0.790	1500	0.000
2	Life satisfaction	0.793	0.003	764.23	0.010
3	Occupation	0.795	0.002	516.50	0.024

around 0.3% and occupation 0.2% (Table 4).

Discussion

In the present study, 32.0% of the elderly women were found to have cognitive defect. Study conducted in Haryana by Goswami et al, showed that the cognitive impairment among the study subjects was 18.03% whereas it was 23.7% among elderly females.⁹ Study done by Kumar V showed the prevalence of cognitive impairment as 5.6%.²

A study conducted in a rural community in Sepang, Selangor, Malaysia showed prevalence of cognitive impairment of 22.4% among the elderly respondents and the cognitive impairment was significantly higher among the elderly in the above 70 years age group compared to those in the 60 to 69 years age group.¹⁰ This study also found that the prevalence of cognitive impairment was higher among the elderly who were not married (either single, widowed or divorced) compared to those who were still married. Other studies have also showed a positive association between cognitive impairment and increasing age.^{11,12} The Zaragoza study also showed that the rate of cognitive impairment and dementia was higher among the elderly who were widowed compared to those who were still married.¹¹ Krishnaswamy observed 24.0% of Malaysian elderly in urban settlements had cognitive impairment.¹² Johnson et al found that the overall prevalence of cognitive impairment (MMSE score < 27 classified as Cognitive Impairment) for those over 64 years was 6.4%.¹³ In two community based studies in rural areas from Spain and Japan, memory impairment was reported to be 7.1% and 8.6% respectively, which was lower than the present study.^{14,15} In a rural community based study from Ballabgarh among non-demented people aged 55 years and above, cognitive impairment was reported to be present in 10.2%.⁷ Studies from some countries reported prevalence of cognitive impairment varying in the range of 20%-36%.^{6,16,17,18}

In a study by Unverzagt, the prevalence of

cognitive impairment was significant especially with advancing age. He estimated that 23.4% of the community dwelling participants had Cognitive Impairment No Dementia (CIND).¹⁹

The differences in the findings of these studies might be due to differences in methodology (age, cut off point of different scales). Higher prevalence in present study compared to other studies might be due to questions like date/year, copying of drawing were not culturally relevant to them. Also many of these studies excluded conditions like dementia in study subjects while all the subjects were included in present study. Inclusion of younger age may also be one of the reasons in some studies.^{7,20} Higher prevalence among females was observed in studies conducted by Coria et al, Chandra et al.^{14,20} This may be due to inappropriateness of questions to females. O' Connor reported the evidence of cognitive impairment in 27% of subjects older than 75 years compared with 11.2% of those aged 65-74 years.¹⁶ Prevalence of cognitive impairment was found to be positively associated with increasing age in many of studies.^{7,9,13,19,21}

Conclusion

Prevalence of cognitive defect of almost one third in elderly emphasizes the need for more attention for this group. There is a need to provide appropriate services, suitable for these cognitively impaired elderly people. Support from family members and other social organization will help in minimizing the problem of the elders and help them to lead a better life.

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