

PREVALENCE OF SENSORY IMPAIRMENTS AMONG ELDERLY IN RURAL AREAS

Dr. S. Gunasekaran

Professor, Department of Applied Research, Gandhigram Rural Institute - Deemed University, Gandhigram-624 302, TamilNadu, India.

ABSTRACT

The present study carried out on a sample of 900 elderly persons aged 60 years and above selected from the rural areas of three different districts of TamilNadu assessed the prevalence of sensory impairments (vision and hearing) among elderly and examined their demographic and socio-economic correlates. The results indicate that vision problem is the major issue affecting more than two thirds of elderly. The problem is significantly more severe among elderly aged 80 years and above affecting nearly 80 per cent of them. Hearing impairment was reported by more than two fifths of elderly (42.2 per cent). Increase in age significantly increase the prevalence of sensory impairment among elderly in rural areas. It is also observed that significantly higher proportion of illiterates is affected by sensory impairments than the literates. The results suggest the need for intervention to care and support the poor elderly by providing spectacle and hearing aids to prevent them from the risk of falling and accidents and also to make them free movement outside their household.

Key words: *physiological, vision, hearing, recall memory, recognition, falling*

INTRODUCTION

Elderly population in India constitutes 8.1 per cent of the total population and is expected to increase to 17 per cent by the year 2025 (Census of India, 2011; M. Alam et al. 2011). Older age is known for many health problems. The most common health problems of the elderly are related to chronic diseases as a result of increase in life expectancy. In India, sporadic data have been collected on different health problems of the elderly. While epidemiologic studies specifically targeted at the elderly population are sparse, the Indian Council of Medical Research (ICMR) has carried out several studies on specific chronic disorders such as hearing impairment, blindness, cardiovascular diseases, cancer etc. The data from these studies covering the aged population have been utilized to provide a chronic morbidity profile of the elderly. Based upon the population estimates, the disease load in the Indian elderly population has been estimated. Hearing impairment is the most common morbidity, followed by visual impairment (Shah B and Prabhakar A.K., 1997). This dual sensory impairment (vision and hearing) increases with age.

The Indian Council of Medical Research (ICMR) has attempted to compile data on morbidity from different sources. The total number of blind persons among the older population

was around 11million in 1996 and eighty per cent of them due to cataract (Angra et al 1997). The consequences of blindness are not limited only to physical disability that ensues, but also impinge on economic, social and psychological domains of the affected individual's life. Nearly 60 per cent of older people are said to have hearing impairment in both urban and rural areas (Kacker, 1997). The national sample survey organization found that almost 50 per cent of the elderly in India suffer from chronic diseases with the prevalence of diseases increasing with rising age from 39 per cent in 60-64 years to 55 per cent in those older than 70 years (Sarvakshana, 1991). Hearing and visual impairments are two of the common causes of morbidity in the aged population in India (Shah B, Prabhakar AK, 1997; and Venkoba Rao A, 1990). In a population based study in a rural district from South India, authors using the International Classification of Impairments, Disabilities and Handicaps, noted that visual disability was the single most important cause of preventable disability (56 per cent) among the elderly aged above 60 years with only one third of them using assistive devices (Venkatorao. T., et al., 2005).

A cross-sectional study conducted among 175 rural elderly found that the prevalence of hearing impairment was 72 per cent and that of visual impairment was 48per cent. The prevalence increased significantly with increase in age. It was higher among widow/ers and illiterates, who did not have any source of income and those who were financially dependent on others compared to their counter groups. The study concluded that the Prevalence of dual sensory impairment is high among community dwelling rural Indian elderly (Deepthy Ramamurthy et al., 2014). Many other studies have found that the prevalence of dual sensory impairment among elderly ranges from 6.5 to 35.0 per cent (M. Brennan et al, 2005; T. Lupsakko et al., 2002; E.M.Chia, et al., 2006; B.L.Lam, et al., 2006). In this context the present study focuses on the prevalence and the demographic and socio economic determinants of both the visual and hearing impairments among elderly aged 60 years and above in rural areas of Tamil Nadu in south India.

OBJECTIVES

- i) To assess the prevalence of sensory impairments(visual and hearing) among elderly aged 60 years and above in rural areas;
- ii) To assess the demographic and socio-economic factors associated with the sensory impairment status of elderly; and
- iii) To suggest suitable measures for an active and dignified ageing of elderly in rural areas.

SAMPLE DESIGN

The data for the present study is taken from a larger data set collected for a research project conducted by the Department of Applied Research of the Gandhigram Rural Institute which is a centrally funded deemed university in Tamil Nadu. The research project entitled 'Health Problems and Care and Support Available to Elderly during Sickness in Rural Tamil Nadu' was funded by the Indian Council of Medical Research, New Delhi and the study was carried out during the period from October 2007 to September 2009. The data were collected from a sample of 900 respondents aged 60 years and above selected from the rural areas of three different districts of Tamil Nadu viz., Madurai, Karur and Viluppuram representing high, medium and low level of development districts respectively based on the Human Development Index (HDI) of the Tamil Nadu Human Development Report (2003). The data were collected by trained research investigators using a structured interview schedule. The data analysis was carried out using SPSS. The χ^2 test was used to assess the association of various socio-economic and demographic factors with the sensory impairment status of elderly in rural areas. The binary logistic regression analysis was carried out to assess the effect various background characteristics of elderly on their sensory impairment status.

RESULTS AND DISCUSSION

The sensory impairment factors considered in this study are vision and hearing. The impairment status of vision and hearing is assessed based on the self reported statement of elderly during the personal interview. The results presented in Table 1 shows that vision problem is a major concern for elderly as 68.3 per cent of elderly reported to have vision problem. It is 64.5 per cent among male and 71.4 per cent among female. The vision problem significantly increases with age both among male and female. Hearing impairment is reported by 42.2 per cent of elderly. It is significantly highest around 60 per cent among those aged 80 years and above both among male and female elderly. Thus the results indicate that sensory impairment among elderly deteriorated with increase in age both among male and female. Elderly aged 80 years and above are in a significantly disadvantaged position than others. Further, female elderly are more disadvantaged than male in sensory impairment. Helping the poor elderly by providing hearing aids and spectacles is the most important service to be considered seriously by the government and other philanthropic bodies to reduce dependability of elderly for their active participation in social life.

Table 1: Percent distribution of elderly by their sensory impairment status, age and sex

Sensory Impairment	Age in years(Male)				Age in years (Female)				Age in years (All)			
	60-69 N=74	70-79 N=24 1	80+ N=99	Total N=414	60-69 N=8 6	70-79 N=31 2	80+ N=88	Total N=486	60-69 N=16 0	70-79 N=55 3	80+ N=18 7	Total N=900
Vision												
No Difficulty	52.7	36.1	21.2	35.5	32.6	29.8	20.5	28.6	41.9	32.5	20.9	31.8
Difficulty	47.3	63.9	78.8	64.5	67.5	70.2	79.5	71.4	58.2	67.5	79.1	68.3
	$\chi^2=18.426$ DF=2			P<0.000	$\chi^2=3.742$		DF=2	P<0.154	$\chi^2=17.966$ DF=2		P<0.000	
Hearing												
No Difficulty	77.0	64.3	38.4	60.4	66.3	56.7	40.9	55.6	71.3	60.0	39.6	57.8
Difficulty	23.0	35.6	61.7	39.6	33.7	43.3	59.1	44.4	28.7	40.0	60.4	42.2
	$\chi^2=30.157$ DF=2			P<0.000	$\chi^2=11.825$		DF=2	P<0.003	$\chi^2=38.467$ DF=2		P<0.000	

Effect of various background characteristics of elderly on their sensory impairment status

The results of the logistic regression analysis showing the effect of various background characteristics of elderly on their sensory impairment status is presented in table 2. It is found that the risk of getting vision problem is 1.4 times higher for elderly aged 70-79 years and 2.7 times higher for elderly aged 80 years and above compared to elderly aged 60-69 years. At the same time, the risk of getting vision problem is significantly reduced by 28.0 per cent for literates compared to illiterates. It is less for Christian compared to Hindu and both most backward caste and backward caste elderly have lesser chances of getting vision problem compared to scheduled caste.

The risk of getting hearing problem is 1.6 times higher for elderly aged 70-79 years and 3.6 times higher for elderly aged 80 years and above compared to elderly aged 60-69 years. Literates are having 37 per cent less chances of getting hearing problem compared to illiterates.

Overall, the results show that the chances of getting sensory impairment seem to increase with age. Literates are having less chances of getting sensory impairment compared to illiterates. Christians are having less chances of getting vision problem compared to Hindu. Most backward

and backward caste elderly are having less chances of getting problem in vision compared to Scheduled Caste elderly.

Table 2. Effect of various background characteristics of elderly on their sensory impairment

Background characteristics	Reference Category	Vision Impairment		Hearing Impairment	
		Yes N=614	No N=286	Yes N=380	No N=520
		Odds ratio	Significant	Odds ratio	Significant
Age (Years)					
	60-69	1.0		1.0	
	70 - 79	1.412	0.070	1.591	0.020
	80+	2.699	0.000	3.625	0.000
Sex					
	Male	1.0		1.0	
	Female	1.047	0.829	0.861	0.466
Education					
	Illiterate	1.0		1.0	
	literate	0.718	0.047	0.625	0.004
Marital status					
	Married	1.0		1.0	
	Single	1.230	0.313	1.350	0.128
Religion					
	Hindu	1.0		1.0	
	Muslim	0.928	0.801	1.018	0.950
	Christian	0.450	0.018	1.119	0.736
Caste					
	SC/ST	1.0		1.0	
	MBC	0.468	0.005	1.172	0.535
	BC	0.655	0.035	1.004	0.982

CONCLUSION

The examination of sensory impairment in vision and hearing among elderly shows that vision problem is the major problem affecting more than two thirds (68.3 per cent) of elderly. Elderly aged 80 years and above are more vulnerable to vision problem. Hearing problem is reported by more than two fifths of elderly. Due to continuous increase in longevity, there would be increased number of elderly in the coming years. The sensory impairment level observed in this study indicated the high prevalence of vision and hearing impairment among elderly aged 60 years and above and suggested the need for care and support from the government to provide spectacle to those with vision problem and hearing aid to those with hearing impairment as most of the elderly in rural areas hailed from poor family and lacking awareness about health care measures. All elderly in rural areas are to be covered under the primary health care system. National level survey and health checkup camps are to be organized to assess the level and prevalence of various sensory impairment among elderly and to initiate early geriatric services at primary health centre level for the healthy ageing in rural India.

REFERENCES

- Alam, M., K. S. James, and G. Giridhar**, (2011) "Building a knowledge base on population aging in India," Report on the Status of Elderly in Select States of India, United Nations Population Fund, Lodhi Estate, New Delhi, 2011.
- Angra, S.K., Murthy, G.V.S., Gupta, S.K. & Angra V**, (1997), "Cataract Related Blindness In India and Its Social Implications". *Indian Journal of Medical Research*, 106, 312-324
- Brennan, M., A. Horowitz, and Y. P. Su**, (2005), "Dual sensory loss and its impact on everyday competence," *Gerontologist*, vol. 45, no. 3, pp. 337–346, 2005.
- Census of India 2011**, (2013), http://censusindia.gov.in/Census_And_You/age_structure_and_marital_status.aspx.
- Chia, E.M., P. Mitchell, E. Rochtchina, S. Foran, M. Golding, and J. J. Wang**, (2006), "Association between vision and hearing impairments and their combined effects on quality of life," *Archives of Ophthalmology*, vol. 124, no. 10, pp. 1465–1470, 2006.
- Deepthy Ramamurthy, Arvind Kasthuri, and Rekha Sonavane**, (2014). "Dual Sensory Impairment Among Community Dwelling Rural Elderly: Concern for Rehabilitation", *Journal of Geriatrics*. Volume 2014 (2014), Article ID 254518, 7 pages

- Kacker, S.K.**, (1997), "Hearing Impairment In The Aged". *Indian Journal of Medical Research* 106, pp 333-339.
- Lam. B. L., D. J. Lee, O. Gomez-Marin, D. D. Zheng, and A. J. Caban**, (2006), "Concurrent Visual and Hearing Impairment and Risk of Mortality: the National Health Interview Survey," *Archives of Ophthalmology*, vol. 124, no. 1, pp. 95–101, 2006.
- Lupsakko. T, M. Mantyjarvi, H. Kautiainen, and R. Sulkava**, (2002), "Combined hearing and visual impairment and depression in a population aged 75 years and older," *International Journal of Geriatric Psychiatry*, vol. 17, no.9, pp. 808–813, 2002.
- Sarvakshana**, (1991), "National Sample Survey Organisation". *Socio-economic profile of aged persons: 15 : Nos 1-2, Issue No.19*
- Shah B, Prabhakar A.K.**, (1997), "Chronic morbidity profile among elderly". *Indian J Med Res* 1997; 106 : 265-72.
- Venkatorao T, Ezhil R, Jabbar S, Ramakrishnan R**, (2005). Prevalence of Disability and Handicaps in Geriatric Population in Rural South India", *Indian J Public Health* 2005; 49: 11-7.
- Venkoba Rao, A.**, (1990), "Health Care of the Rural Aged. New Delhi", *Indian Council of Medical Research*; 1990.