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A STUDY ON SENSORY LIMITATIONS AMONG ELDERLY, IN THE SELECTED OLDAGE HOMES OF HYDERABAD CITY

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ABSTRACT

Sensory impairments are common among elderly, particularly the vision and hearing limitations. Vision impairment is a condition, where a visually impaired person's eyesight cannot be corrected to a “normal level”. Visual impairment is the functional limitation of the eye/ eyes. Hearing impairment is a partial or total inability to hear and can be temporary or permanent. The total samples for the study were 120 elderly, drawn from 10 oldage homes (two from each zone), from the twin cities of Hyderabad and Secundrabad. The information on sensory limitation among the elderly was collected, using the Hearing Handicap Inventory Screening Questionnaire, for Adults (Elderly) and Lighthouse International Functional Vision Screening Questionnaire (Elderly), through a personal interview technique. The results of the study revealed that, majority of the respondents (65%) were moderately hearing handicapped, 33 per cent of them did not have hearing limitations and 3 % are significantly hearing handicapped, while majority (72%) of the respondents had severe vision problem because of cataract, glaucoma and aging. Only 28 per cent respondents have potential vision problems.

KEYWORDS: Sensory Limitations, Aging, Elderly, Hearing Impairment, Vision Impairment

INTRODUCTION

The world is rapidly ageing: the number of people aged 60 and over as a proportion of the global population would double from 11% in 2006 to 22% by 2050. Elderly or old age consists of ages nearing or surpassing the average life span of human beings. The National Policy on Older Persons defines “senior citizen” or “elderly” as a person who is of aged 60 years or above. Due to the socioeconomic and medical progress in 20th century there was a considerable growth in elderly population in India and the life expectancy had also increased. Today the average dying age is around 80 years, it implies that after retirement (or after 60 years), for at least 20 years one will be old and will have physical as well as mental problems associated with old age.

Changes in the body structure and morphology occur over its lifetime. At every stage of life, there are physical and sensory changes in the human body. Vision is often the first sense that is noticeably affected with age. In the fourth decade, the pupil, responsible for regulating the amount of light that enters the eye, becomes smaller and the eye lens becomes thicker and yellows.

It becomes more difficult to focus and read smaller print, depth perception decreases, and visual field and peripheral vision may become more limited. Changes in the ability to hear certain sounds also commonly occur in the 4th and 5th decades.

These changes cause loss in the sharpness of sounds and the ability to hear certain sound pitches. The inner ear, responsible for balance, is also affected with changes in the auditory system. As balance and gait are affected, there is an increased risk for falls.

Sensory impairments are common among elderly particularly the vision and hearing limitations. Vision impairment (as defined by the Centers for Disease Control and Prevention CDC) is a condition where a visually impaired person's eyesight cannot be corrected to a “normal level”. Visual impairment is the functional limitation of the eye /eyes. Hearing impairment is a partial or total inability to hear. Hearing loss may occur in one or both ears which may result in loneliness. Hearing loss can be temporary or permanent. Eighteen per cent of adults aged greater than or equal to 70 years reported blindness in one eye, blindness in both eyes, or any other trouble seeing; 33.2% reported hearing impairments, and 8.6% reported both hearing and vision impairments (Campbell et al 1999).

REVIEW OF LITERATURE

Health of an elderly during oldage is an asset; as aging brings in progressive changes with passing of time and physiological changes that occur with age prevent life beyond 70s, 80s and more from being what it was in the younger years. There is a lot one can do to improve the health and longevity and reduce the risk for physical and mental disability as one gets older. The risk for certain medical conditions—including heart attack, stroke, falls, morbidity, dementia, diabetes, lung disease, chronic pain, some types of cancer and other health concerns increases with age.

Banker et al. (2011) **c**onducted a study to know the health profile and health related problems of the elderly residing at geriatric homes. A cross sectional study was carried out in geriatric homes of urban and peri urban areas of Ahmedabad during January 2008 to January 2009. Out of total 530 inmates, 45.85% were males and 54.15% were females. Ninety four per cent of them reported one or more health problems. Among the total sample 37% were obese and 12 % were underweight. Other problems included: loss of teeth (70%), joint pain (60.2%), impaired vision (44.2%), weakness (34.9%), and insomnia (34%). 82.3% were using spectacles followed by walking sticks (21.7%) and denture (12.8%).The main health related problems were osteoarthritis (54.9%), hypertension (54.2%), cataract(16%) and diabetes mellitus(14.9%). The study highlighted a high prevalence of morbidity and health related problems among elderly.

Anitha et al. (2012), explored the health problems of elderly staying in old age homes of Chennai city. Data on health problems was collected, by clinical examination and available medical records. Medical services were found available in all the homes. Only 3.3% of elders were clinically free from health problem and the remaining elders were suffering from one or more health problems. Major health problems of elders were cardiovascular diseases 42.8% dental problem 37.6% and visual problem 35.1%.

Bhatt et al. (2014) examined the type of health problems based on the knowledge, awareness and perception of the inmates in two old age homes of Vadodara city. A total of 50 inmates from two old age homes were interviewed. The questionnaire was designed to explore health status. The results indicated that major health problems found among inmates were blood pressure (54%); weaknesses (44%) followed by pain/ tingling in lower limbs (38%), sleep disturbances (36%),

breathlessness (32%), back pain and gastric problem. Other health problems reported were thyroid, heart attack, arthritis, hysteria, paralysis and diabetes. It was observed that majority of inmates were suffering from health problems associated with ageing.

METHODOLOGY

Research Design: A case study research design was choosen rather than an extensive statistical survey.

Location of the Study Sample: Twin cities of Hyderabad and Secundrabad

Selection of Sample: Sampling is the process of selecting a number of respondents for a study in such a way that they represent the larger group from which they were selected (Kerlinger, 1995). Multistage sampling procedure based on specific criteria was followed for selecting cases for the present study:

Selection of Old Age Homes

Old age homes operationally existing were selected. Based on type of institutional organization and permissions obtained for conducting study as criteria, old age homes from five zones were selected purposively and thus 10 were taken as total sample.

Selection of Subjects

From each old age home, based on dependency in managing the daily activities and willingness to cooperate as the criteria, about 12 respondents were purposively selected equally representing the two categories viz; elderly who manage by self and elderly who manage with support. Thus, the total samples for the study were 120 elderly, drawn from 10 oldage homes.

Tools used for the Study

The sensory limitation among the elderly was measured using the Hearing Handicap Inventory Screening Questionnaire for Adults (Elderly) and Lighthouse International Functional Vision Screening Questionnaire (Elderly).

Statistical Analysis

The data collected was computed and interpreted using statistical techniques like frequency, percentages, mean, standard deviation and ANOVA. The software used for the analysis is SAS.

RESULTS AND DISCUSSIONS

General Profile of the Respondents

Majority (36%) of the respondents belonged to the age group of 70-80 years, while 30% of the respondents belonged to 60-70 years, 25 % to the age group of 80-90 years and the remaining 9% were above 90 years. Elderly men and women above the age of sixty years were included in the study and were divided equally. Majority (48%) of the men were graduates, 5% were retired government employees, 7 % were postgraduate, 3% were educated up to high school and the remaining 37 % were illiterate. Among the women only 10% were graduates, 5% were retired government employees, 4 % were post graduates and majority (80%) of them were illiterate

Hearing Handicap Inventory Screening Questionnaire for Adults (Elderly)

Hearing impairment is a common but under-reported problem among older adults. The prevalence rises with age. Between 25% and 40% of individuals aged 65 years and older and 40% to 66% of individuals aged 75 years and older have some degree of hearing loss? Hearing loss related to presbycusis is the most common cause, but other risk factors include: exposure to regular, excessive noise; cerumen impaction; ototoxic medications; chronic otitis media; and diseases that affect sensorineural hearing. Hearing loss can lead to miscommunication, social withdrawal, confusion, depression, and deterioration in functional status.

The Hearing Handicap Inventory for the Elderly Screening Version (HHIE-S) is a 10-item questionnaire developed to assess how an individual perceives the social and emotional effects of hearing loss. The higher the HHIE-S score, the greater the handicapping effect of a hearing impairment. Possible scores range from 0 (no handicap) to 40 (maximum handicap). Audiologic referral is recommended for individuals scoring 10 points or higher on the HHIE-S.

Table 1: Distribution of the Sample Based on their Hearing Limitation

S. No	Score	Frequency (%)
1.	0-16	39(33)
2.	17-42	78(65)
3.	≥43	3(3)

Figures given in parenthesis indicate percentages

0-16 Suggests no hearing handicap

17-42 Suggests mild-moderate hearing handicap

≥ 43 Suggests significant hearing handicap

The results in table 1 showed that majority of the respondents (65%) were moderately hearing handicapped, 33 per cent of them did not have hearing limitations and 3 % are significantly hearing handicapped.

Lighthouse International Functional Vision Screening Questionnaire (Elderly)

The Functional Vision Screening Questionnaire (FV) is a screening tool to identify functional indicators of vision problems in older adults. The questionnaire is not a clinical or diagnostic assessment and should not be used to replace one. It identifies older people who may be experiencing a vision problem and who would benefit from seeing an optometrist or ophthalmologist. A score of "1" is given for each item where a vision problem is reported and "0" if it is not. Scores are indicated next to the answer for each item, add up the scores. Total scores range from 0 to 15.

Based on the analyses, a score of nine (9) is the base score for identifying an older adult with a potential vision problem. People who score 9 or above on the questionnaire should be encouraged to seek a vision evaluation from an optometrist or ophthalmologist.

Table 2: Distribution of the Sample Based on their Hearing Limitation

S. No	Score	Frequency (%)
1.	0-9	33(28)
2.	≥ 9	87(72)
Mean = 10.33		
Standard Deviation=± 2.66		

Figures given in parenthesis indicate percentages

Potential vision problem 0-9

Severe vision problem ≥ 9

The results in table 2 indicated that majority (72%) of the respondents had severe vision problem because of cataract, glaucoma and aging. Only 28 per cent respondents have potential vision problems. Similar results were found by Narkhede et al (2012), on the health problem among elderly in old age homes revealed that, majority of the respondents had visual problem (66.7%) and hearing problem (83.3%) along with the other health problems.

Table 3: ANOVA between Sensory Limitation of Elderly with Age and Gender

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Age Group	3	2042.688571	680.896190	4.74	0.0037**
Error	116	16662.61143	143.64320		
Corrected Total	119	18705.30000			

Significant at Pr< 0.01 (i.e., at 1% level. of. significance or 99% Confidence interval)

Table 4: ANOVA between Sensory Limitation (Hearing) of the Elderly and Age

Duncan Grouping	Mean	N	AGE GROUP
A	28.833	12	90 and Above
A	23.952	42	80 - 90
A	22.000	41	70 - 80
B	14.720	25	60 - 70

The result of ANOVA given in table 3 indicated that according to the sensory limitations of elderly at 1 % level of significance there is at least one of the age group mean is significantly different from other mean age groups.

According to the multiple comparison tests, sensory limitation (hearing) means of age group 4 is statistically significantly different from mean age group 1, mean age group 2 and mean age group 3. Similarly, the means of age group 1, means of age group 2 and means of age group 3 are statistically non-significant.

Table 5: ANOVA between Sensory Limitation (Hearing) of the Elderly and Gender

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Gender	1	61.63333333	61.63333333	0.39	0.5335^{ns}
Error	118	18643.66667	157.99718		
Corrected Total	119	18705.30000			

'ns' Non-significant at pr>= 0.05

The result of ANOVA between sensory limitation of hearing and gender is given in Table 4. According to the sensory limitations (hearing) of elderly, at 5% level of significance, has not found any statistical significant with of gender.

Table 6: ANOVA between Sensory Limitation (Vision) of the Elderly and Age

Source	DF	Type III SS	Mean Square	F Value	Pr > F
AGE GROUP	3	11.33259582	3.77753194	0.53	0.6635^{ns}
Error	116	828.9924042	7.1464862		
Corrected Total	119	840.3250000			

'ns' Non-significant at pr>= 0.05

The result of ANOVA between sensory limitation of vision and age is given above in the table 5. According to the sensory limitation (vision) of the elderly at 5% level of significance, has not found any statistical significant difference with age.

Table 7: ANOVA between Sensory Limitation (Vision) of the Elderly and Age

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Gender	1	21.67500000	21.67500000	3.12	0.0797
Error	118	818.6500000	6.9377119		
Corrected Total	119	840.3250000			

'ns' Non-significant at pr>= 0.05

The result of ANOVA between sensory limitation of vision and gender is given in Table 6. According to the sensory limitation (vision) of the elderly at 5% level of significance, has not found any statistical significant difference with age.

CONCLUSIONS

The results indicated that majority of the respondents (65%) were moderately hearing handicapped, 33 per cent of them did not have hearing limitations and 3 % are significantly hearing handicapped. Majority (72%) of the respondents had severe vision problem because of cataract, glaucoma and aging. Twenty eight per cent of the respondents had potential vision problems. The health of the elderly could be improved with proper planning and grouping of rooms. There are various age related problems like diabetes, blood pressure, knee problems, joint paints that increases with age and could be controlled through proper medication, clinical test and exercises.

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