

Original Research Article

Morbidity patterns in elderly patients attending medicine department of tertiary care center

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ABSTRACT

Background: In India, there is a rapid increase in people above 60 years. In Rajasthan, there is increase in population of persons above 60 years from 5.1% of total population in 1961 to 7.2% in 2011. With increase in their number, the illnesses affecting elderly people will also increase. With this background, this study was done to assess the morbidity patterns in elderly population attending Department of Medicine, S.M.S. Medical College, Jaipur, Rajasthan, India.

Methods: This was a cross sectional, prospective and observational study done in medicine department. 250 patients of 60 years and above, attending medical OPD or admitted were included. All data collected were entered in Microsoft Excel sheets and analysed statistically.

Results: Respiratory diseases (45.6%) were commonest morbidity followed by cataract (36.8%), cardiovascular (34.4%) and hearing impairment (33.2%). Osteoarthritis was seen in 31.2% and anaemia was present in 20.8%. As the age increases chances of getting morbidities were more. The average number of illnesses per morbid person was 1.92.

Conclusions: A high prevalence of morbidity among elderly highlights the urgent need to provide geriatric health care services in the developing country like India. Elderly persons should be motivated to undergo regular health check-ups to identify these common problems at earliest.

Keywords: Elderly people, Hypertension, Morbidity, Respiratory diseases

INTRODUCTION

India is the second most populous country in the world. On account of better education, health facilities and increase in life expectancy, the percentage of elderly population (60+) has increased all over the world.¹ In India also there is rapid increase in people above 60 years. The absolute number in India increased from 76 million in 2001 to 104 millions in 2011.² In Rajasthan, there is increase in population of persons above 60 years from 5.1% of total population in 1961 to 7.2% in 2011.³ The proportion is likely to reach 13% population in 2030 and 20% in 2050.⁴ While improvement in health, decline in fertility, and increase in longevity are desirable

indicators but along with this there will be increase of elderly population over the next few decades. This warrants priority attention for economic and social policies to become senior citizen-friendly.

As age advances there is progressive deterioration of many organs and systems leading to increase in risk for various diseases. A fall in bone mass leads to osteoporosis and fractures, cartilage degeneration leads to musculoskeletal problems, muscle loss leads to functional weakness, a decline in immune function cause increases in infections and cancer, and increased neuronal degeneration leads to decline of cognitive function and dementia. As elderly people are vulnerable to long term

diseases of insidious onset such as cardiovascular illness, CVA, cancers, diabetes, musculoskeletal and mental illnesses along with this, there is absence of facilities for medical treatment and of providing economic and social support, hence information on morbidity profile of this population is essential for planning their health care facilities. During the past decade, numerous studies highlighting the morbidity pattern in different geographical areas of India were done, but none relating to Rajasthan state of North India. With this background, this study was done to assess the morbidity pattern in elderly population attending Department of Medicine, S.M.S. Medical College, Jaipur, Rajasthan, India.

METHODS

This was a cross sectional, prospective and observational study done in medicine department of S.M.S. Medical College. 250 patients of 60 years and above, attending medical OPD or admitted in medicine ward, and willing to participate in the study, were included after obtaining written informed consent. Age, sex, occupation and type of family were noted from all patients. Diagnosis made on the basis of past records and present examination, was also entered in the Microsoft excel data. All the data were statistically analysed.

RESULTS

The age characteristics of the elderly is summarised in Table 1. Out of 250 elderly 46.8% belonged to the age group of 60-69 years, 42.0% belonged to 70-79 years age group and 11.2% belonged to ≥ 80 years age group. 132 (52.8%) of the respondents were males and 112 (47.2%) of elderly were females. Mean age for men was 69.73 ± 6.37 and for women it was 66.44 ± 6.59 .

Table 1: Distribution of geriatric patients according to age.

Age groups (years)	Men	Women	Total
	No %	No %	No %
60 - 69	60 51.2	57 48.8	117 46.8
70 - 79	52 49.5	53 50.5	105 42.0
≥ 80	20 71.4	8 28.6	28 11.2
Total	132 52.8	118 47.2	250 100
Mean age	69.73 ± 6.37	66.44 ± 6.59	

$X^2 = 4.45$, p value = 0.1

Out of 250 elderly respondents studied, majority of them (75.6%) had a short duration of illness i.e, less than 1 month, 14.8% had duration of illness as 1 to 3 months and only 9.6% had duration of illness for more than 3 months. Duration of illness ranged from 1 day to 6 years. (Table 2).

Table 3 summarise morbidity pattern in elderly patients. Out of 250 elderly patients, respiratory diseases (45.6%) were more seen followed by cataract (36.8%),

cardiovascular (34.4%) and hearing impairment (33.2%). Osteoarthritis was seen in 31.2% and anemia was present in 20.8%. Out of 114 cases of respiratory diseases, COPD (31%) was the commonest respiratory disease followed by Koch's chest (21.6%).

Table 2: Distribution of geriatric patients according to duration of illness.

Duration of illness	Men	Women	Total
	No %	No %	No %
<1 month	103 54.5	86 45.5	189 75.6
1 - 3 months	12 32.4	25 67.6	37 14.8
>3 months	17 70.8	7 29.2	24 9.6
Total	132 52.8	118 47.2	250 100

$X^2 = 9.5$, p value = 0.008

Table 3: Morbidity pattern among geriatric patients.

Morbidity	Men	Women	Total (n=250)
	No %	No %	No %
Anemia	22 42.3	30 57.7	52 20.8
Respiratory system diseases	80 70.2	34 29.8	114 45.6
Cardiovascular diseases	51 59.3	35 40.7	86 34.4
Neurological diseases	21 42.9	28 57.1	49 19.6
Endocrinal diseases	16 47.1	18 52.9	34 13.6
Renal diseases	17 45.9	20 54.1	37 14.8
Gastro intestinal diseases	33 53.2	29 46.8	62 24.8
Psychiatric diseases	9 45.0	11 55.0	20 8.0
Malignancy	21 80.8	5 19.2	26 10.4
Organo phosphorus poisoning	4 100	0	4 1.6
Hearing impairment	46 55.4	37 44.6	83 33.2
Cataract	49 53.3	43 46.7	92 36.8
Osteoarthritis	37 47.4	41 52.6	78 31.2
Others	8 66.7	4 33.3	12 4.8

Hypertension was commonest cardiovascular disease observed in 42.5% cases of heart disease followed by coronary artery disease (30.2%). Intracranial haemorrhage and infarct were the commonest neurological diseases (91.4%). Type 2 diabetes mellitus was the commonest endocrinal disease (85.3) followed by hypothyroidism (14.7%). Carcinoma lung was the commonest malignancy seen in 20 out of 26 patient followed by gastric carcinoma in 3 cases, oesophageal carcinoma in 2 cases and chronic myeloid leukaemia in 1 case. 4 cases (all men) were admitted with organo-phosphorus compound poisoning. 12 cases were admitted with dengue, high fever and idiopathic thrombocytopenia.

Effect of socio-demographic factors on frequency of morbidities among geriatric patients is clearly shown in Table 4. As the age increases chances of getting more

morbidities are increasing hence persons with multiple morbidities were more in age group 80+ where about 75 % population having multiple morbidities and only 25% population had single morbidity. There was statistically significant difference observed in the distribution of morbidity with age (p value 0.04).

Table 4: Effect of sociodemographic factors on frequency of morbidities among geriatric population.

Socio demographi c factors	Single morbidity No %	Multiple morbidities No %	Total
Age group (years)			
60-70	57 48.7	60 51.3	117
70-80	40 38.1	65 61.9	105
>80	7 25.0	21 75.0	28
X² = 6.14, P value- 0.04, significant			
Gender			
Men	43 32.6	89 67.4	132
Women	61 51.7	57 48.3	118
X² = 9.37, P value- 0.002, significant			
Occupation			
Working	37 34.3	71 65.7	108
Nonworking	67 47.2	75 52.8	142
X² = 4.21, P value- 0.04, significant			
Family type			
nuclear	32 33.3	64 66.7	96
Joint/extended	72 46.8	82 53.2	154
X² = 4.38, P value- 0.03, significant			
Total 416 41.6 584 58.4 1000			

Significant sex differentiation was also seen in occurrence of diseases (p value 0.002). Of all, 51.7% women had single morbidity whereas in men it was only 32.6%. Most of the men (67.4%) had multiple morbidities. 34.3% working persons had single morbidities whereas it was 47.2% in non-working group. Occurrence of multiple morbidities were more in working persons. Difference was statistically significant (p-value 0.04). Geriatric population residing in nuclear family had more chances to get multiple morbidities (66.7%) in comparison to persons with joint family (53.2%) and the difference was statistically significant (p-value 0.03). Overall, most of the population (58.4%) had multiple morbidities with 41.6% geriatrics having single morbidities.

DISCUSSION

The purpose of this study was to assess the morbidity pattern in elderly patients, 60 years and above, attended or admitted in medical department of S.M.S. Medical College, Jaipur, India. Regarding various health problems, about 45.6 % study population had respiratory disorder while in the study of Prakash R et al a lower incidence of respiratory diseases (36%) was reported.⁵ Hypertension was commonest cardiovascular disease

observed in 42.5% cases of cardiovascular disease. Our observation is consistent with other studies done in different parts of India and world as 40.5 in Shimla, 48% in Udaipur and 53.8 % in United States and 48% in Canada.⁵⁻⁷ A lower prevalence of hypertension was reported by Putty AJ et al (26%) and by Manmohan G et al (24.7%) and a much higher prevalence level of 56% has been reported in a WHO report.⁸⁻¹⁰ Cataract was seen in 36.8% of the elderly persons in our study. Occurrence of cataract ranged from 21% to 37% of the older subjects in various studies done in India and other countries.^{5,8,11-13}

Anemia was present in 20.8% of elderly patients. The occurrence of anaemia was much lower than other studies done in the past. Purty AJ et al reported 52.5% prevalence of anaemia while Niranjn GV et al reported a high prevalence of anaemia as high as 82.9% while Deepak S et al reported a lower prevalence of anaemia (16.5%).^{6,8,14} Osteoarthritis was observed in 31.2% elderly. Shankar R et al reported a high prevalence of arthritis (57.08%) in their study. Osteoarthritis was observed slightly more in females than in males. Our findings were consistent with other studies done in the past.^{15,16}

Out of 250 patients studied, the overall occurrence of diabetes was 11.6% as compared to other studies conducted in India. All the patients had type II diabetes. Out of 29 patients of Type 2 DM, 16 (55.2%) were males and 13 cases (44.8%) were females. Our results were similar to the study done by Puri S et al though prevalence of DM was more (27.1%) in their study.¹⁷ Overall occurrence of psychiatric disorder was 8% in our study which was much lower than the occurrence reported by Tiwari et al (23.7%), Tiwari SC et al and Chowdhury A et al.¹⁸⁻²⁰ Overall prevalence of psychiatric morbidity was found to be more amongst females (11/20) than males (9/20) our findings were consistent with that of Tiwari et al.¹⁸

A significantly higher proportion of women suffered from osteoarthritis (females: 52.6% vs. males: 47.4%), anaemia (females: 57.7% vs. males:42.3%), hypothyroidism (females: 5 cases vs. males: none), while respiratory diseases like chronic obstructive pulmonary disease (males: 70.2% vs. females: 29.8%), cardiovascular (males:59.3% vs. females: 40.7%), malignancies (males: 80.8% vs, females 19.2%) were observed more in men. Similar sex differences in morbidity pattern was observed by Deepak S et al in their study.⁶

The present study observed that with advancing age number of morbidities increased. This is in agreement with previous studies which observed that the prevalence of old age-related morbidities increased with advancing age significantly.^{5,15} Joshi et al reported that the age was among the important factors which predict increased morbidity.²¹ In our study, single illness was observed in 41.6%, two illnesses in 39.6% and three or more illnesses

in 18.8% cases. It was observed that the average number of illnesses per morbid person was 1.92. A slightly higher morbidity load was reported by other studies done in the past as 2.77 by Purty AJ et al, 2.42 by Niranjana GV et al and 2.18 illness per morbid person by Shankar R et al.^{8,14,15} This clearly shows the morbidity burden of elderly on the society and warrants a clear attention of the society and health care personnel to attend their needs.

CONCLUSION

In our study common medical problems identified were COPD, hypertension, diabetes, osteoarthritis, cataract and hearing impairment. A high prevalence of morbidity among elderly highlights the urgent need to provide geriatric health care services in the developing country like India. Elderly persons should be motivated to undergo regular health checkups to identify these common problems at earliest.

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REFERENCES

- Demography of aging. Available at <https://www.elsevier.com/books/international-encyclopedia-of-public-health/978-0-12-227225-7>. Accessed on 12 July 2016.
- Situation analysis of elderly in India. 2011. Available from: http://mospi.nic.in/mospi_new/upload/elderly_in_india.pdf. Accessed on 2 May 2016.
- Registrar general and census commissioner, India, 2006. Population projections for India and States, 2001-2026. Report of technical group on population projections constituted by the national commission on population, New Delhi.
- United nations population division. Revision world population prospects. New York, NY: United Nations, 2006.
- Prakash R, Choudhary SK, Singh US. A study of morbidity pattern among geriatric population in an urban area of Udaipur, Rajasthan. *Indian J Commun Med.* 2004;29:35-40.
- Sharma D, Mazta SR, Parashar A. Morbidity pattern and health-seeking behavior of aged population residing in Shimla hills of north India: a cross-sectional study. *J Family Med Prim Care.* 2013;(2):188-93.
- Kaplan MS, Huguot N, Feeny DH, McFarland BH. Self-reported hypertension prevalence and income among older adults in Canada and the United States. *Soc Sci Med.* 2010;70:844-9.
- Purty AJ, Bazroy J, Kar M, Vasudevan K, Veliath A, Panda P. Morbidity pattern among the elderly population in the rural area of Tamil Nadu, India. *Turk J Med Sci.* 2006;36:45-50.
- Gupta M, Borle AM, Chhari N, Gupta S. Assessment of clinico-socioeconomic status and health-care support among the elderly people aged older than 60 years in urban population of Bhopal, Central India. *Int J Med Sci Public Health.* 2015;4(4):558-64.
- WHO. Epidemiology and prevention of cardiovascular diseases in elderly people. Technical report series. 1995;853:52-3.
- Kishore S, Garg BS. Sociomedical problems of aged population in a rural area of Wardha district. *Indian J Public Health.* 1997;41:43-8.
- Goswami A, Reddaiah VP, Kapoor SK, Singh B, Dey AB, Dwivedi SN, et al. Health problems and health seeking behaviour of the rural aged. *Indian J Gerontol.* 2005;19:163-80.
- Liu Z, Albanese E, Li S, Huang Y, Ferri CP, Yan F, et al. Chronic disease prevalence and care among the elderly in urban and rural Beijing, China—a 10/66 Dementia Research Group cross-sectional survey. *BMC Public Health.* 2009;9:394.
- Niranjana GV, Vasundhara MK. A study of health status of aged persons in slums of urban field practice area, Bangalore. *Indian J Com Med.* 1996;21:1-4.
- Shankar R, Tondon J, Gambhir IS, Tripathi CB. Health status of elderly population in rural area of Varanasi district. *Indian J Public Health.* 2007;51:56-8.
- Graciani A, Banegas JR, Garcia LE, Artalejo LF. Prevalence of disability and associated social and health-related factors among the elderly in Spain: A population-based study. *Maturitas.* 2004;48:381-92.
- Puri S, Kalia M, Swami H, Singh A, Abhimanyu C, Mangat, Kaur A, Kaur S. Profile of diabetes mellitus in elderly of Chandigarh, India. *Internet J Endocrinology.* 2006;4(1).
- Tiwari SC, Srivastava G, Tripathi RK, Pandey NM, Agarwal CG, Pandey S, et al. Prevalence of psychiatric morbidity amongst the community dwelling rural older adults in northern India. *Indian J Med Res.* 2013;138:504-14.
- Tiwari SC, Kumar A, Tripathi RK, Kumar R, Srivastava G. Profile of neuropsychiatric morbidity amongst urban and rural elderly (preliminary observations). *Indian J Ger Men Health.* 2010;2:11-20.
- A community based study of psychiatric disorders among the elderly living in Delhi. Available at <http://archive.ispub.com/journal/the-internet-journal-of-health/volume-7-number-1/a-community-based-study-of-psychiatric-disorders-among-the-elderly-living-in-delhi.html#sthash.> Accessed on 19 September 2013.
- Joshi K, Kumar R, Avasthi A. Morbidity profile and its relationship with disability and psychological distress among elderly people in Northern India. *Int J Epidemiol.* 2003;32:978-87.

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