Research Article

A comparative study of morbidity pattern in elderly of rural and urban areas of Allahabad district, Uttar Pradesh, India

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ABSTRACT

Background: The ageing process is a biological reality which has its own dynamics, largely beyond human control. The aged population has specific health problem that basically differs from those of an adult or young men. The aim was to study the socio demographic profile and pattern of morbidity in the elderly people of Allahabad district in Uttar Pradesh, India.

Methods: A cross sectional study was carried out on elderly aged 60 years and above; selected from urban and rural areas of Allahabad district by multistage random sampling and were interviewed using pre tested schedule. Data analysis was done on SPSS 16 version.

Results: A total of 400 elderly were surveyed (Male=215 and Female=185). Majority were Hindus (95.7%), lived in joint families (59%), illiterate (43.75%), were either retired or not working (53%), and belonged to lower class (34.75%). The most common morbidities reported among them were ocular problems (68.5%), followed by musculoskeletal (59.7%), and psychological problems (29.75%). The urban elderly had significantly higher proportion of psychological problems (35%), diabetes (23.5%), hypertension (39%) and obesity (35%) whereas prevalence of anemia (43%) and malnutrition (38.5%) and respiratory problems (16%) were more common in rural area.

Conclusions: Over all the study showed that prevalence of certain diseases such as diabetes, hypertension, obesity, and psychological problems was more in urban elderly whereas the prevalence of anemia, under-nutrition, respiratory and skin problems were more in rural elderly.

Keywords: Elderly, Rural and urban, Morbidities

INTRODUCTION

The aging population is a sign of successful development in medical sciences and technology, living standards, and education, but the elderly also raise unique social, economic, and clinical challenges, including a growing demand for increasingly complex healthcare services.

At the moment, there is no United Nations standard numerical criterion, but the UN agreed cut off is 60+ years to refer to the older population.¹ Populations are

growing older in countries throughout the world. While the population of more developed countries have been aging for well over a century, this process began recently in most less developed countries, and it is being compressed into a few decades.² The number of elderly people residing in the world was estimated about 841 million in the year 2013, which is four times higher than the 202 million that once lived in 1950.

The older population will almost triple by 2050, when it is expected to surpass the two billion mark.³

The demographic transition with ageing of the population is a global phenomenon which demands international, national, regional and local action.

Over the next four decades, India's demographic structure is also expected to shift dramatically from a young to an aging population resulting in 316 million elderly persons by 2050.⁴ The percentage of the elderly population in India increased from 5.4 per cent in 1950 to 6.1 per cent in 1990 and is expected to be about 8.7 per cent in 2015, 11.1 per cent in 2025, 12.4 per cent in 2030 and 19.6 per cent in 2050.⁵ Several forces are driving India's changing age structure, including an upward trend in life expectancy and falling fertility.

A WHO report states that non communicable disease's account for at least 32% of all deaths in India with a word of caution that this could be an under and inadequate estimation.

The impact should be higher in the geriatric population. According to Government of India statistics, cardiovascular disorders account for one-third of elderly mortality. Respiratory disorders account for 10% mortality while infections including tuberculosis account for another 10%.

Neoplasm accounts for 6% and accidents, poisoning, and violence constitute less than 4% of elderly mortality with more or less similar rates for nutritional, metabolic, gastrointestinal, and genito-urinary infections.⁷

A study conducted in the rural area of Pondicherry reported decreased visual acuity due to cataract and refractive errors in 57% of the elderly followed by pain in the joints and joint stiffness in 43.4%, dental and chewing complaints in 42%, and hearing impairment in 15.4%. Other morbidities were hypertension (14%), diarrhea (12%), chronic cough (12%), skin diseases (12%), heart disease (9%), diabetes (8.1%), asthma (6%), and urinary complaints (5.6%).⁸

Over the past decades, India's health program and policies have been focusing on issues like population stabilization, maternal and child health, and disease control.

However, current statistics for the elderly in India also gives a prelude to a new set of medical, social, and economic problems that could arise if adequate initiative in this direction is not taken by the program managers and policy makers.

There is a need to highlight the medical and socio-economic problems that are being faced by the elderly people in India.⁹ To formulate policies and programmes and for them to function effectively, good approximate measure of morbidity status of elderly should be studied which will provide with such information that are lacking. So, based on above facts the present study was

carried out with the objective to compare the morbidity pattern in rural and urban areas of Allahabad district.

METHODS

For setting and study design it was a cross-sectional study carried out on elderly aged 60 years and above selected from rural and urban areas of Allahabad district, by multistage random sampling.

A sample size of 400 was calculated from the research adviser 2006 based on target population of 5,06,123 elderly in Allahabad district, with 95% of confidence interval and 5% margin of error.^{10,11}

For the data collection informed consent was obtained from the study subjects after explaining the purpose and objective of the study. Data was collected by house to house visits. The study subjects were interviewed and examined. The collected information was recorded on a pre-designed, pretested, semi structured questionnaire. Morbidity was assessed by taking history, doing a clinical examination, reviewing past medical records and medicines taken by the study subject.

The data was analyzed using statistical software, SPSS Version 16. Chi-square tests and Z-test were used to test the associations between the different variables. P value less than 0.05 was considered as significant.

RESULTS

A total 200 elderly each from rural and urban areas were selected. Out of which majority in both groups belonged to age group of 60-70 years followed by 70-80 years. The mean age of the elderly in rural was found to be 68.96 years (SD 7.48) and in the urban area, the mean age was 68.97(SD 7.45).

In rural more than half (64.5%) were living in joint families, followed by (18%) living in third generation families, while among urban elderly, about half (53.5%) were living in joint families, and about (28%) in nuclear families. Majority (70.55%) in rural and (79.5%) in urban were married at the time of study.

More than half (62%) elderly in the rural were found to be illiterate as compared to (25.5%) in urban group. Most elderly in both the group i.e. (53.0%) were either retired from service or were not working at the time of study. More of elderly in rural areas were engaged in agricultural activities (22.5%), followed by (8.5%) who were laborer, while in urban area the proportion of elderly engaged in service and semiskilled work were 7.5% and 5% respectively.

The socioeconomic classification was based on Modified. Prasad B.G scale 2014, which showed that significantly more of rural elderly belonged to lower class [SES-V] (48.5%) and upper lower class [SES IV] (25%) whereas

more proportion of urban elderly belonged to upper class [SES I] (28.5%) and upper middle class [SES II] (20.5%). The body mass index shows more of rural elderly (38.5%) were underweight, whereas prevalence of over-nutrition i.e. (overweight and obesity) were more in urban elderly (27.5%) and (7.5%) respectively. This difference was also found to be statistically significant (Table-1).

Over all most prevalent diseases were related to ocular, musculoskeletal, psychological system, gastrointestinal

system, and dental disorder affecting 274(68.5%), 239(59.75%), 119(29.75%), 100 (25%), 94 (23.5%), of elderly respectively. The prevalence of anemia (43%), under-nutrition (38.5%) and respiratory problems (16%) were more in rural elderly whereas psychological problems (24.5%), hypertension (39%), obesity (35%) and diabetes (23.5% were found more in urban elderly. This difference in prevalence of morbidity among rural and urban elderly was also found to be significant statistically (p<0.05) (Table-2).

Table 1: Socio-demographic and biophysical profile of study population.

Variables	Rural (N=200)	Urban (N=200)	Total (N=400)	p-value
Age				
60-70	129(64.5%)	124(62%)	253(63.25%)	p>0.05
70-80	49(24.5%)	58(29%)	107(26.75%)	
80 and above	22(11%)	18(9%)	40 (10%)	
Type of Family				
Nuclear	31(15.5)	56(28)	87(21.75%)	p<0.05*
Joint	129(64.5)	107(53.5)	236(59%)	
Third generation	36(18)	32(16)	68(17%)	
Single member	04(02)	05(2.5)	09(2.25%)	
Marital Status				
Unmarried	04(2)	01(0.5)	5(1.25%)	p>0.05
Married	141(70.5)	159(79.5)	300(75%)	
Divorced	03(1.5)	01(0.5)	04(1%)	
Widow	52(26)	39(19.5)	91(22.75%)	
Educational Status				
Illiterate	124(62)	51(25.5)	175(43.75%)	p<0.05*
Literate	76(38)	149(74.5)	225(56.25%)	
Occupation				
Not working/ Retired	89(44.5)	123(61.5)	212(53%)	p<0.05*
Agriculture	45(22.5)	02(1)	47(11.75%)	
Labourer	17(8.5)	03(1.5)	20(5%)	
Semi-skilled Worker	05(2.5)	10(5)	15(3.75%)	
Skilled Worker	03(1.5)	07(3.5)	10(2.5%)	
Business	07(3.5)	08(4)	15(2.5%)	
Service	04(2)	15(7.5)	19(4.75%)	
Other(housewife)	30(15)	32(16)	62(15.5%)	
Socio Economic Status				
Upper(I)	09(4.5)	57(28.5)	66(16.5%)	p<0.05*
Upper Middle(II)	19(9.5)	41(20.5)	60(15%)	
Lower Middle(III)	25(12.5)	24(12)	49(12.25%)	
Upper Lower(IV)	50(25)	36(18)	86(21.5%)	
Lower(V)	97(48.5)	42(21)	139(34.75%)	
Body Mass Index (BMI)				
Underweight – (<18.50 Kg/m ²)	77(38.5)	27(13.5)	104(26%)	p<0.05*
Normal Range – (18.50 -24.99 Kg/m ²)	96(48)	103(51.5)	199(49.75%)	
Overweight- (25.00 to 29.99Kg/m ²)	22(11)	55(27.5)	77(19.25%)	
Obese – (30.00-40.00 Kg/m ²)	05(2.5)	15(7.5)	20(05%)	

*significant

Table 2: Distribution of morbidity pattern in rural and urban elderly.

Disease	Rural		Urban		Total		Z test
	No.	%	No.	%	No.	%	
Ocular	133	66.5	141	70.5	274	68.5	0.9
Musculoskeletal	117	58.5	122	61	239	59.75	0.5
Psychological*	49	24.5	70	35	119	29.75	2.3*
Gastrointestinal	54	27	46	23	100	25	0.9
Dental	46	23	48	24	94	23.5	0.2
Ear	22	11	30	15	52	13	1.2
Genitourinary	23	11.5	25	12.5	48	12	0.7
Respiratory*	32	16	13	6.5	45	11.25	3*
Skin	13	6.5	9	4.5	22	5.5	0.9
Anaemia*	86	43	66	33	152	38	2.1*
Diabetes*	12	06	47	23.5	59	14.75	4.9*
Hypertension*	55	27.5	78	39	133	33.25	2.4*
Obesity*	27	13.5	70	35	97	24.3	5*
Chronic energy deficiency (BMI<18.50)*	77	38.5	27	13.5	104	26	5.7*

*p<0.05, significant

DISCUSSION

In the present study more of urban elderly (70.5%) had ocular disease as compared to (66.5%) of rural elderly. Refractive error followed by cataract was most common ocular morbidity observed out of which prevalence of cataract was more common among rural area. Kanfode M et al in a study conducted on elderly in urban area of Nagpur found prevalence of eye disease around 74% and Mahesh C and et al found the prevalence of ocular diseases among elderly around 60% which is nearer to present finding. In the present study, more of urban elderly (61%) had musculoskeletal problems as compared to (58.5%) of rural elderly which is similar to the study conducted in rural area by Sharma D et al and Shankar R et al (58%) which is again similar to our rural finding.¹²⁻¹⁵ In present study the prevalence of anaemia among rural elderly (43%) was found to be higher than urban elderly (33%), Hakmaosa A et al in rural areas of Assam found prevalence of anemia among elderly around 40% which is similar to our rural finding.¹⁶ In the present study more of urban elderly had hypertension (39%) as compared to (27.5%) of rural elderly, which was also statistically significant. Mahesh C et al, Charle HN et al in Nepal and Woo E et al in South Korea observed the prevalence of hypertension in urban elderly around 40%, 39% & 37% respectively which is again nearer to our urban finding (39%).^{13,18,19} Purty AJ et al in rural area of Pondicherry found the prevalence of hypertension around 26% which is similar to our rural finding 27.5%. On contrary, Kanfode M et al in a study on elderly in urban area of Nagpur reported prevalence of hypertension around 70% which is much higher than our urban finding. In present study, more of rural elderly (38.5%) were underweight (BMI<18 Kg/m²) as compared to (13.5%) of urban elderly.^{17,12} Saxena V et al in rural area of Dehradun found the prevalence of underweight around 36% which

is comparable to our rural finding.²⁰ Similar finding was seen in study done in rural and urban area of Pune by RP Thakur & et al where higher proportion of elderly in rural were underweight as compared to urban elderly and overweight and obesity was more common in urban area. In our study more proportion of urban elderly (23.5%) were found to be diabetic as compared to (06%) of rural elderly.²¹ Hakmaosa A et al in rural areas of Assam found prevalence of diabetes among rural elderly around 07% which is comparable to our rural finding.¹⁶ Chodhury M et al found the prevalence of Diabetes in urban elderly around 26% which is nearer to our urban finding 23.5%. Charle HN et al found prevalence of diabetes 24% in urban elderly Qadri S et al in rural Haryana, found prevalence of diabetes was 09% which is similar to our rural finding.^{13,18,22} On contrary, Yerpude PN et al in rural area of Guntur, found prevalence of diabetes in rural area around 23% which is higher than our rural finding.²³

CONCLUSION

The present study highlighted that prevalence of certain diseases such as diabetes, hypertension, obesity, and psychological problems were more in urban elderly which could be due to sedentary lifestyle and lack of physical activities whereas the prevalence of anemia, under-nutrition, respiratory and skin problems are more in rural elderly which could be attributed to lower socio-economic status of elderly in rural areas and more involvement in outdoor activities. Comprehensive care including imparting health education and promoting the healthy lifestyle, creating awareness regarding the various geriatric welfare scheme will further enable the elderly to improve their quality of life. The present study will further help in creating felt need health services for the elderly which will enable to decrease the common

preventable disease and better utilization of health facilities among the elderly.

Strength and limitation of the study explains that Most morbidity was elicited by asking questions, self-reporting, and simple field investigations without any further confirmation by other laboratory investigations. Because of which morbidity may have been underestimated or missed.

The strength of the study lies in the facts that very few comparative study in Northern India is carried out for morbidity in rural and urban elderly, which will further help to specify the need of elderly in these areas which will further strengthen the preventive and curative aspect of health sector and better utilization of health services.

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