

Original Research Article

## Chronic Morbidities in Geriatric Population - A Community Based Study

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### ABSTRACT

**Introduction:** The world is ageing, it is natural and inevitable. The risk of having at least one chronic disease, such as hypertension, diabetes, arthritis, cancers increases with age, this is not so much a function of chronological age per se but a reflection of the life-long accumulation of risk factors. So study was planned to find out the chronic morbidities pattern among geriatric population ( $\geq 60$  years) in District Bareilly (UP).

**Materials and Methods:** A cross sectional study was conducted in a Dhaura village of District Bareilly (Uttar Pradesh) to assess the health status of geriatric population during January to April 2015. Study had attempted to include all the households and residents of the study areas who were  $\geq 60$  years of age. The systematic random sampling method was used and the house to house survey was done. The participants were interviewed by using predesigned and pre tested semi-structured tool. Analysis was done by using percentage & Chi square test.

**Results:** Out of 121 study subjects, majority of the subjects were 60-70 years of age (89.3%), Illiterate (71.9%), Unemployed (59.5%), Above poverty line (79.3%), Hindu (64.5%) and Joint family (66.9%). The most prevalent morbidity was hypertension 67(55.4%) followed by anemia 43(35.5%), obesity 35(28.9%) etc. From this study, it was also observed that hyperglycemia ( $p=0.0005$ ), hypertension ( $p=0.001$ ) and chronic lung diseases ( $p=0.02$ ) were highly significant among employed, above poverty line (APL) and joint families respectively.

**Conclusions:** Rising prevalence of chronic conditions are considered as the major causes of disability in the elderly population.

**Key words:** Geriatric population, Morbidities, Chronic condition.

### INTRODUCTION

The two extremes of life child and elderly always need a special care. Elderly life is full of problems concerned to physical, social and economic. Usually ageing of the population is essentially a simple phenomenon and its consequences are multiple and not always well recognized. According to famous quote by Sir James Sterling Ross- "You do not heal old age, you protect it, you promote it, you extend it" (Pathak, 1975). The elderly are

afflicted by the process of ageing which causes a general decline in health.

Ageing has led to an increase in the chronic conditions with advancing age from 39% in 60-64 year to 55% in those older than 70 year among Indian population. [1] However, the geriatric age group suffers from the dual medical conditions; where age-related declined immunity and physiological changes has lead to an increased burden of communicable diseases as well as non

communicable chronic diseases. Chronic diseases can further limit the daily activities and the quality of life (QOL) by causing medical, social and psychological disorders; where, QOL in elder years is defined as an ability to maintain their independence and eliminate costly care giving services by shopping for themselves, cooking their own meals, bathing, dressing, walking and climbing stairs without assistance. [2] The focus shouldn't be alone on reducing the chronic disease related morbidity and mortality, but should further promote the optimal health and ensure the disability free years either by preventing the disease or the impairment through the implementation of the different preventive programmes.

An Indian today has over twice the odds of dying of a non-communicable disease than a communicable disease, according to the World Health Organization. About a decade ago, you had a 50-50 chance of succumbing to a non-communicable disease. [3]

The shift from infectious diseases as a leading cause of death to non-infectious illnesses is the story of every country treading the path of development. Far from being an exception – as an India Spend exploration of four such diseases linked to changing lifestyles will detail, starting tomorrow – India is on a greatly accelerated journey of “epidemiological transition,” the process of changes in patterns of disease as societies develop. Hence, this study was an attempt to determine the prevalence of different chronic diseases and their association with socio demographic variables among the geriatric population in an Indian rural community.

## **MATERIALS AND METHODS**

The present study was conducted in Bareilly district which is also known as Nath Nagri. Out of the 15 blocks in the district, Bhojipura block was selected for study as it is the field practice area of the

department of community medicine, SRMS Institute of medical sciences, Bareilly. Total no. of villages in Bhojipura block is 98, out of which one village Dhaura was randomly selected.

This is a cross-sectional study conducted in 121 individuals aged 60 years and above. Study had attempted to include all the household and residents of the Village who are  $\geq 60$  years of age. The participants were selected by using systematic random sampling method. Study was conducted using predesigned & pre-tested questionnaire through interview method. This community based survey was conducted for 4 months – January to April 2015.

Questionnaire included information on socio-demographic profile, health status and risk factors for emerging diseases. Socioeconomic status was categorized as per Government India's guidelines for Above Poverty Line (APL) and Below Poverty Line (BPL) category. [4] Elderly population was classified for BMI as per WHO's guidelines. [5,6] Blood pressure was measured using Welch- Allyn shock resistant BP instrument (air based) with appropriate size cuffs and hypertensives were categorized as per VIIth Joint National committee on Prevention, Detection, Evaluation and treatment of High Blood pressure. [7] Blood investigations like Haemoglobin level and Blood sugar were carried out after informed consent and classified as per WHO's & American Medical association's guidelines. [8-10] All the investigations have been carried out at laboratory established at Rural Health Training Centre, Dhaura Tanda. Statistical analysis was performed using statistical software SPSS version 18 of Microsoft windows. Categorical data analysis was done using percentage & chi square test. The level of statistical significance was set at 0.05. All the instruments were regularly calibrated before taking them to the field.

**Inclusion criteria:** Elderly residing for at least six months in the area were be considered as a resident and included in the study.

Elderly whose native place is other than present place of residence but the duration of stay was more than six months were included in the study

**Exclusion criteria:** Those elderly living in the area for less than six months were not included in the study.

Those elderly, who were non cooperative or refused to provide necessary information, were not included in the study.

## RESULTS

All study subjects  $\geq 60$  years of age (N=121) were divided into men (44.6%)

and women (55.4%) groups. Among men, 83.3% were in 60-70 years age group and 16.7% were in 70-80 years age group while among women, 94.0% were in 60-70 years age group and 6.0% were belongs to 70-80 years age group.

Table 1 show that socio-demographic variables in all the geriatric age group subjects, majority of the subjects were Illiterate (71.9%), Unemployed (59.5%), above poverty line (79.3%), Hindu (64.5%) and Joint family (66.9%). According to education, 61.1% and 38.9% of men were illiterate and literate; and geriatric women were 80.6% and 19.4% for the same education categories, respectively. This shows a statistically significant higher literacy among men (38.9%) than women (19.4%).

**Table 1: Gender wise comparison of socio-demographic variables among geriatric study subjects**

Category	Total 121 (%)	Men 54 (%)	Women 67 (%)	p-value
Age 60-70 years	108(89.3%)	45(83.3%)	63(94.0%)	0.07
Age 70-80 years	13(10.7%)	9(16.7%)	4(6.0%)	
<b>Education</b>				
Illiterate	87(71.9%)	33(61.1%)	54(80.6%)	<b>0.017</b>
Literate	34(28.1%)	21(38.9%)	13(19.4%)	
<b>Occupation</b>				
Unemployed	72(59.5%)	27(50.0%)	45(67.2%)	0.05
Employed	49(40.5%)	27(50.0%)	22(32.8%)	
<b>Socio-Economic status</b>				
Above poverty line (APL)	96(79.3%)	44(81.5%)	52(77.6%)	0.60
Below poverty line (BPL)	25(20.7%)	10(18.5%)	15(22.4%)	
<b>Religion</b>				
Hindu	78(64.5%)	33(61.1%)	45(67.2%)	0.49
Muslim	43(35.5%)	21(38.9%)	22(32.8%)	
<b>Type of family</b>				
Nuclear	40(33.1%)	17(31.5%)	23(34.3%)	0.74
Joint	81(66.9%)	37(68.5%)	44(65.7%)	

**Table 2: Prevalence and sex wise comparison of chronic diseases among geriatric study subjects**

Morbidities	Total Percentage	Men (54)		Women (67)		p-value
		Normal	Diseased	Normal	Diseased	
Hypertension	67(55.4%)	26(48.1%)	28(51.9%)	28(41.8%)	39(58.2%)	0.48
Anemia	43(35.5%)	34(63.0%)	20(37.0%)	44(65.7%)	23(34.3%)	0.75
Obesity	35(28.9%)	44(81.5%)	10(18.5%)	42(62.7%)	25(37.3%)	<b>0.02</b>
Hyperglycemia	23(19.0%)	45(83.3%)	9(16.7%)	53(79.1%)	14(20.9%)	0.56
Chronic lung diseases	20(16.5%)	43(79.6%)	11(20.4%)	58(86.6%)	9(13.4%)	0.31
Chronic liver diseases	18(14.9%)	40(74.1%)	14(25.9%)	63(94.0%)	4(6.0%)	<b>0.002</b>
Peptic ulcer disorder/Gastritis	12(9.9%)	50(92.6%)	4(7.4%)	59(88.1%)	8(11.9%)	0.41
Musculoskeletal disorder	10(8.3%)	50(92.6%)	4(7.4%)	61(91.0%)	6(9.0%)	0.76
Cataract	7(5.8%)	52(96.3%)	2(3.7%)	62(92.5%)	5(7.5%)	0.38
Insomnia	6(4.9%)	52(96.3%)	2(3.7%)	63(94.0%)	4(6.0%)	0.57
Stroke/AMI	3(2.5%)	52(96.3%)	2(3.7%)	66(98.5%)	1(1.5%)	0.43
CKD	2(1.6%)	53(98.1%)	1(1.8%)	66(98.5%)	1(1.5%)	0.88
<b>Total</b>	<b>246</b>		<b>107</b>		<b>139</b>	

Table 3: Association of socio demographic characters with major chronic morbidities

Socio demographic characters		Hypertension n=67 (%)	Anemia n=43(%)	Obesity n=35(%)	Hyperglycemia n=23(%)	Chr. Lung Diseases n=20(%)
Education	Illiterate(87)	47(70.1%)	30(69.8%)	23(65.7%)	16(69.6%)	17(85.0%)
	Literate (34)	20(29.9%)	13(30.2%)	12(34.3%)	7(30.4%)	3(15.0%)
	P value	0.63	0.69	0.33	0.78	0.15
Occupation	Unemployed(72)	38(56.7%)	28(65.1%)	21(60.0%)	7(30.4%)	14(70.0%)
	Employed(49)	29(43.3%)	15(34.9%)	14(40.0%)	16(69.6%)	6(30.0%)
	P value	0.48	0.35	0.94	<b>0.0005</b>	0.29
Marital status	Married(73)	39(58.2%)	25(58.1%)	22(62.9%)	11(47.8%)	14(70.0%)
	Unmarried/widow /widower(48)	28(41.8%)	18(41.9%)	13(37.1%)	12(52.2%)	6(30.0%)
	P value	0.59	0.71	0.71	0.17	0.33
Socio economic status	APL(96)	60(89.6%)	33(76.7%)	27(77.1%)	17(73.9%)	17(85.0%)
	BPL(25)	7(10.4%)	10(23.3%)	8(22.9%)	6(26.1%)	3(15.0%)
	P value	<b>0.001</b>	0.60	0.70	0.47	0.49
Type of family	Nuclear(40)	20(29.9%)	15(34.9%)	12(34.3%)	5(21.7%)	11(55.0%)
	Joint(81)	47(70.1%)	28(65.1%)	23(65.7%)	18(78.3%)	9(45.0%)
	P value	0.40	0.75	0.85	0.19	<b>0.02</b>

Table 2 shows highest prevalence of HTN (55.5%) with slightly more frequency in women (58.2%) than men (51.9%). Similarly, a higher frequency of obesity (37.3%), hyperglycemia (20.9%), Peptic ulcer disorder/Gastritis (11.9%), Musculoskeletal disorder (9.0%), Cataract (7.5%) and Insomnia (6.0%) were reported among geriatric women. On the other hand, men were observed with higher frequency of Anemia (37.0%), Chronic lung diseases (20.4%), chronic liver disease (25.9%), Stroke/AMI (3.7%) and chronic kidney disease (1.8 %) than women. Here a statistically significant prevalence of obesity & Chronic liver diseases was found with sex (p <0.05).

Table 3 shows that when various variables were applied to education, occupation, marital status, Socio economic status and type of family, it was observed that hyperglycemia was highly significant among employed subjects (p=0.0005). Hypertension (p=0.001) was significantly higher among subjects of above poverty line (APL) than below poverty line (BPL) and chronic lung disease (p= 0.02) was significantly higher among subjects of joint families than nuclear families. However education and marital status had no effect on any of the major chronic morbidities.

## DISCUSSION

According to WHO, the geriatric population of 65 years and above should be considered (WHO, 1995). But we have considered the age group of 60 and above years according to Indian scenario. A study carried out in Southern part of India reported results that show a prevalence of 82.9% in the age group of 60 years and above. [11] In India, over the past few decades the proportion of 60 years and above has grown up to 7.8 % according to recent census from Govt of India. The contribution of elderly population to demographic figures is increasing day by day. Increasing problems of healthcare, psychosocial, personal and socio-economic factors associated with the elderly further overwhelm this. The present study also sought to determine the relationships between morbidity and socio-demographic and health characteristics.

The current study shows that men (38.9%) were two times more literate than women (19.4%) and it observed a statistically significant higher literacy (p<0.05) in men than women. Similar finding was also found in the study of Kaur J et al. [12] 61.1% of the males and 67.2% of the females belonged to Hindu community, while 38.9 % of males and 32.8% of females belonged to Muslim community. The prevalence of male in Hindu (59.6%) and Muslim (40.4%) religion was found by Srivastava MR [13] et

al in his study, and this finding was more similar to finding of this study. The prevalence of vegetarianism (35.5%) with higher frequency in women (41.8%) than men (27.8%) was observed in the present study. Similar results of higher frequency in women than men were also reported by Kaur J et al. [12] More men had been found with 9.3% alcohol use in the current study. Being male, socially isolated, single, and separated or divorced were the various socio-demographic factors associated with alcohol use disorders among the elderly people. [14] A statistically significant smoking habit was reported more frequently in men (31.5%) than women (1.5%) in the present study. Similar finding was also reported by R Aras et al. [15]

Around 55.4% of the elderly persons were suffering from hypertension in the present study. In a multi centric study carried out by the hypertension study group [16] found that the prevalence of hypertension was 55% and 53% in rural areas of Kerala (India) and Dhaka (Bangladesh) respectively, which is comparable to the present study. In a study by Prakash et al [17] prevalence of hypertension was 48%, Joshi et.al [18] study in Northern India found 49% of the elderly had hypertension in rural area.

Anemia (35.5%) was the second most common cause of chronic non-communicable diseases morbidity with similar finding of Kaur J et al. [12] Similarly, Bhasin and Rao [19] has similar finding of a higher prevalence of anemia in men than women. Age related anemia due to reduced ratio of bone marrow to fat cells and a reduced marrow response on stimulation with erythropoietin; should not be presumed to be a result of “normal aging” or due to nutritional deficiency, and thus blanket treatment with haematinics should be avoided. An appropriate clinical attention and thorough investigation should be required in an elderly population to rule out iron deficiency as a result of

chronic blood loss through gastrointestinal lesions including malignancies, vitamin B12 deficiency, folate deficiency, myelodysplastic syndrome, and anemia of chronic disease with renal insufficiency. [19]

Women (37.3%) had shown two times higher predisposition to obesity than men (18.5%) in the present study which has been found contrary to Kiss et al. [20] The association of obesity with gender was found statistically significant in this study. ( $p < 0.05$ )

This study indicates that prevalence of hyperglycemia (19.0%) was more similar to finding of Kakkar R et al [21] study. The prevalence of hyperglycemia was observed more frequently in women (20.9%) than men (16.7%) in the present study. Moreover, Cigolle et al [22] has reported adults with diabetes had an increased prevalence and incidence of geriatric conditions across the age spectrum compared to those without diabetes.

The prevalence of chronic lung diseases (16.5%) presenting in the form of asthma, allergic bronchitis and/or chronic obstructive pulmonary disease was more prevalent in men (20.4%) than women (13.4%), which might be attributed to chronic exposure to smoking by men in the study area, and this finding is more similar to study of Kaur J et al. [12]

A prevalence of dyspepsia (9.9%) due to an underlying peptic ulcer disease and/or gastritis was reported more frequently in women (11.9%) than men (7.4%) in the current study.

The common cause of geriatric morbidity from the chronic non-communicable diseases was musculoskeletal disorders (8.3%) with the predominance in women (9.0%) than men (7.4%). Similarly, Tsou and Ching [23] observed that musculoskeletal disorders leads to incorrect biomechanics, impaired mobility, skeletal and muscular de-conditioning which further results in the



decreased functional reserves and ability to adapt to physiological, physical and psychosocial challenges. The prevalence of stroke was found 2.5%. Similar finding was also found in Kakkar R et al <sup>[21]</sup> study.

## CONCLUSION

The study among rural geriatric population in Bareilly, Uttar Pradesh has highlighted a high prevalence of morbidity of hypertension 67(55.4%) followed by anemia 43(35.5%) and obesity 35(28.9%) etc, so there is a need of primary health care in the early age of life to minimize the prevalence of these chronic diseases.

## Recommendations

- 1) Along with medical treatment, economic and social support should also be provided by Government.
- 2) Strengthening of primary health care services and establishment of geriatric care units for elderly urgently needed.
- 3) Efforts should be made for income generation to support themselves and their families.

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