

Morbidity Profile of Elderly Population and its Association with Various Factors in Rural Area of District Kangra, Himachal Pradesh: A Community Based Cross-Sectional Study

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Abstract: ***Introduction:** Elderly people have got specific needs related to health. There is increasing need for good quality geriatric health care service at the primary level to manage the commonly existing health problems in the community. This study was conducted with the objective to study morbidity profile of elderly population in rural area of district Kangra, Himachal Pradesh (H. P.). **Material and methods:** It was across-sectional study carried out for a period of one year (July 2018 to August 2019) with sample size of 570 for rural area. Data was collected by using a self-administered, self designed and pretested semi-structured questionnaire. Data was coded and entered in Microsoft excel and was analysed using SPSS version 24. **Results:** Cardiovascular diseases (68.1%) were the most common problem found followed by musculoskeletal disorder (63.6%) and visual problem (57.0%). Hypertension (37.3%) was the most common morbidity in cardiovascular diseases, bronchial asthma (26.4%) in respiratory disease, osteoarthritis (36.9%) in musculoskeletal disorders and heart burn/peptic ulcer (19.5%) in GI disorders. **Conclusion:** Almost all elderly had reported to have one or the other health problem. Most of the health problems of elderly are controllable if addressed properly. Hence there is an urgent need of dealing the geriatric health problems in comprehensive and coordinated approach by health personnels and good compliance by the elderly people and their family members.*

Keywords: Elderly, Morbidity profile, Aging, Rural area, Prevalence

1. Introduction

Population of elderly in India is growing day by day. The definition of elderly is variable depending on various communities in the world. However, a person aged 60 years or more, is referred to as “elderly” in India. India, the second-largest country in the world, has a 72 million elderly population. The elderly population accounted for 8.2% of the total population in 2011⁽¹⁾. The elderly are precious asset for any country with rich experience and wisdom, they contribute their might for progress of the nation⁽²⁾.

Degenerative diseases or chronic illnesses, commonly affect the elderly population and most of them suffer from multiple medical conditions. Elderly people suffer from two types of health problems i. e., medical and psychosocial. Common medical problems are visual, cardiovascular, musculoskeletal, and gastrointestinal diseases. The psychosocial problems commonly reported are impaired memory and intelligence, anxiety, depression, the rigidity of outlook, lack of occupation and earning, dependency and non-satisfaction with family members⁽³⁾.

Aging is a complex, multifactorial and inevitable process that begins before birth and continues throughout the life. It is an inevitable truth that older people in Indian society has been well perceived. Although age pyramid with wider top obviously narrates a success story of socioeconomic development and good public health practice in country, there is need to know the problem burden comprehensively

⁽⁴⁾. Elderly people have got specific needs related to health. There is increasing need for good quality geriatric health care service at the primary level to manage the commonly existing health problems in the community and it should be based on the “felt needs”⁽⁵⁾.

This poses a greater responsibility on the health services especially in developing countries like India, where there is greater strain on available health infrastructure. In the view of all these facts, this study was conducted with the main objective to study morbidity profile of elderly population in rural area of district Kangra, Himachal Pradesh (H. P.). This study will help us to understand and evaluate their health problems, so that a comprehensive health-care plan covering all aspects of preventive, promotive, curative, and rehabilitative services can be planned for the care of the elderly residing in this part of the world.

2. Materials and Methods

Study design and area: This was a community based cross-sectional study conducted in district Kangra of Himachal Pradesh (H. P.).

Study duration: The study was carried out for a period of one year (July 2018 to August 2019).

Sample size and selection of subject: A total sample size of 750 (rural and urban) was calculated by using formula $4PQ/E^2$, where P = Prevalence of various morbid conditions

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among geriatric population (37%), $Q = 100 - P$, $E =$ error of the prevalence (10%) and adding non response rate of 10%. As the population of district resides more in rural than urban. To achieve the desired proportionate sample size of 750 individuals, 25% sample from Urban and 75% sample from rural was considered. Thus, for the purpose of present study, a sample size of 570 for rural area was calculated.

Inclusion criteria and exclusion criteria: Age 60 years and above, resident of the selected health block and person who gave consent to participate in the study were included in the study. Those who were found to be non-cooperative and were not present at home at the time of visit were excluded from the study.

Selection of clusters: In the rural area, a village was considered as one cluster and villages of Shahpur health block of Kangra district were considered as one cluster. Shahpur health block has a total of 1, 41, 833 population which is distributed in 333 villages. Out of these 333 villages 30 were selected randomly and from these sampled villages 19 individuals were selected from each village by applying population proportion size technique (PPS).

Sampling: First house in the cluster was selected randomly and then adjacent house was visited till the required sample size was completed in that cluster. Only one study subject per household was included in the study, in case there was more than one study subject in a house hold simple random method was applied for the selection of study subject in that household. In case study subject was not available, adjacent house was visited till the required sample size was completed. A house to house survey was conducted twice a week in the selected study area. Data was collected by using a self-administered, self designed and pretested semi-structured questionnaire. Socioeconomic status in the rural area was classified by using Udai Pareek scale.

Ethical permission: The study was conducted after ethical clearance from Institutional Ethical Committee (IEC) Dr. RPGMC Kangra at Tanda (H. P.).

Data Analysis and Statistics

Data was coded and entered in Microsoft excel and was analysed using SPSS version 24. Categorical data was analysed using frequencies and percentages and Chi square (X^2) was used to detect significant difference for proportion and $P < 0.05$ was considered statistically significant.

3. Results

Out of 570 study participants, 331 (58.1%) were females and 412 (72.3%) study participants were between 60-70 years. All were Hindu by religion and 248 (43.5%) belonged to upper class as per Udai Pareek scale for socioeconomic status (Table 1).

Table 1: Distribution of study participants based on sociodemographic characteristics

Characteristic		N (%)
Gender	Male	239 (41.9)
	Female	331 (58.1)
Age (in years)	60-70	412 (72.3)
	71-80	124 (21.8)
	81-90	27 (4.7)
	91 and above	7 (1.2)
Religion	Hindu	570 (100)
	Others	0 (0)
Socioeconomic status	Upper	248 (43.5)
	Upper middle	269 (47.2)
	Lower middle	53 (9.3)

Table 2: Distribution of study participants based on the difference in morbidity pattern (system wise) between male and female.

Morbidity	Male, N (%) n=239	Female, N (%) n=331	Total, N (%) n=570	p value
Cardiovascular disease	140 (58.5)	249 (75.2)	389 (68.1)	0.07
Respiratory disease	68 (28.4)	90 (27.2)	158 (27.9)	1.22
Muskuloskeletal disorder	93 (38.9)	269 (81.3)	362 (63.6)	0.02
GI disorder	39 (16.3)	91 (27.5)	130 (22.8)	0.03
Endocrine disorder	1 (0.4)	13 (3.9)	14 (2.5)	0.01
Auditory problem	46 (19.2)	56 (16.9)	102 (17.9)	0.55
Vision problem	123 (51.6)	202 (61.1)	325 (57.0)	0.02
Cancer	0 (0.0)	1 (0.3)	1 (0.2)	0.39
Depressive illness	1 (0.4)	4 (1.2)	5 (0.9)	0.31

In our study, cardiovascular diseases (68.1%) were the most common problem found followed by musculoskeletal disorder (63.6%) and visual problem (57.0%). Musculoskeletal disorders involved osteoarthritis, rheumatoid arthritis and persistent backpain and all these were found more commonly in females as compared to males. The difference between male and female distribution was found to be statistically significant ($p < 0.05$). The gastrointestinal (GI) disorders included reflux, heart burn and peptic ulcer and these were found to be more common in females and the difference was found to be statistically significant ($p < 0.05$). Endocrine disorders (thyroid disorders)

and vision related problems were also found to be more common among females as compared to males ($p < 0.05$) (Table 2). Hypertension (37.3%) was the most common morbidity in cardiovascular diseases, bronchial asthma (26.4%) in respiratory disease, osteoarthritis (36.9%) in musculoskeletal disorders and heart burn/peptic ulcer (19.5%) in GI disorders. Thyroid disorder was found in 2.5%, auditory problem in 17.9%, vision problem in 57.0%, cancer in 0.2% and depression in 0.9% of the study participants (Table 2). Overall, the vision problem had been found to be most common morbidity followed by hypertension and osteoarthritis in our study (Figure 1).

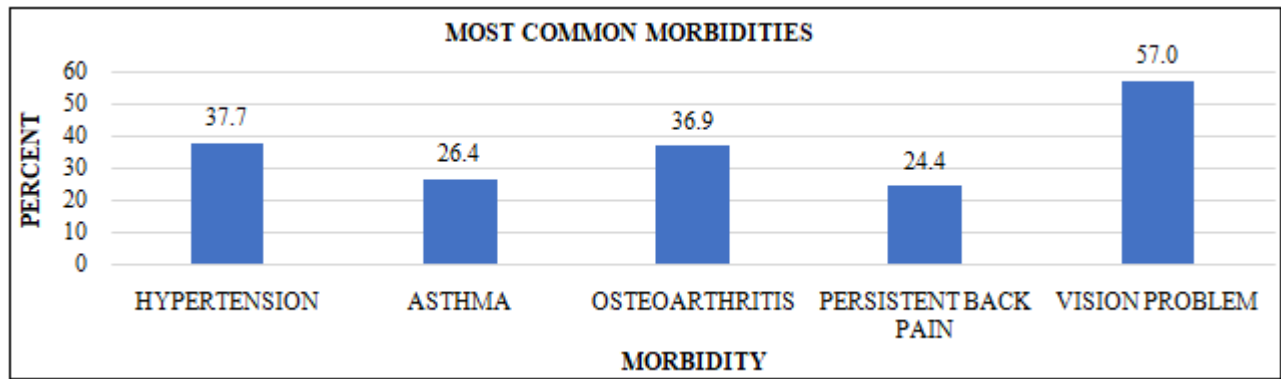


Figure 1: Distribution of most common morbidities among the study participants.

When analyzing the sociodemographic factors that are associated with the morbidity pattern of the elderly, it was observed that the morbidities are more common among the females, elderly of age between 60-70 years and those who belonged to upper middle socioeconomic status. But none of the sociodemographic factors were found to be associated with the morbidity pattern and the difference in the prevalence of morbidity among the groups was not found to be statistically significant (Table 3).

Table 3: Association between various sociodemographic factors and morbidity pattern (single/multiple) of the study participants

Variable		Morbidity pattern		p value
		Yes, N (%)	No, N (%)	
Gender	Male	184 (32.3)	55 (9.6)	0.08
	Female	274 (48.1)	57 (10.0)	
Age	60-70	326 (57.2)	86 (15.1)	0.33
	71-80	101 (17.7)	23 (4.1)	
	81-90	24 (4.2)	3 (0.5)	
	91 and above	7 (1.2)	0 (0.0)	
Socioeconomic status	Upper	206 (36.1)	42 (7.4)	0.23
	Upper middle	213 (37.4)	56 (9.8)	
	Lower middle	39 (6.8)	14 (2.4)	

4. Discussion

In our study, out of 570 study participants, 331 (58.1%) were female and 239 (41.9%) were male. Similarly, in a study by Kumar R et al⁽⁴⁾ of the total 855 respondents, 51.2% were women and 48.8% were men. This finding might be due to the more life expectancy among women.

In our study, all (100%) study participants belonged to Hindu religion whereas in a study by Bardhan H et al⁽²⁾ 85.41% population belonged to Hindu religion while 12.14%, 1.73%, and 0.72% were Muslim, Sikh and Christian respectively. In study conducted by Chandwani HR et al⁽⁶⁾ 92% were Hindu and in a study by Jadav VS et al⁽⁷⁾ 89% were Hindu.

In our study, most common morbidity has been found to be vision problem, hypertension, osteoarthritis, bronchial asthma and persistent back pain whereas in a study by Lena A et al⁽⁸⁾ the most common morbidities were hypertension, osteoarthritis, diabetes, bronchial asthma and others like cataract, anemia and skin problems.

Prevalence of hypertension in our study has been found to be 37.3% whereas in a study by Kumar R et al⁽⁴⁾ it was 52.8%. Also in the study carried out by Kishore S et al⁽⁹⁾ it was found that hypertension was the most common problem with prevalence of 41.4%.

In our study, the prevalence of diabetes mellitus was found to be 13.0%, also in the study by Bardhan H et al⁽²⁾ the prevalence of diabetes mellitus was 10%, in a study by Kumar R et al⁽⁴⁾ 13.4% and in study by Jadav VS et al⁽⁷⁾ 13.92%. The lower prevalence of diabetes mellitus might be due to unidentified cases in the community and the actual prevalence could be much higher.

Among musculoskeletal problems, osteoarthritis (36.9%) was the most common problem followed by persistent back pain (24.4%) and rheumatoid arthritis (2.3%) and females were affected more than males. This could be due the fact that females in this rural area of district Kangra has to work under worse geography and hilly terrains leading to musculoskeletal pain and deformity. In contrast to this, Pathak G et al⁽¹⁾ found that most of the elderly subjects complained of backache (26%) followed by Osteoarthritis (20.7%) and males were affected more than females. However, arthritis was reported by Srivastava Ket al⁽³⁾ (22.2%) and Prakash R et al⁽¹⁰⁾ (14.8%) as a common musculoskeletal problem which differed from our study.

In our study among the GI problems, heart burn/peptic ulcer/gastritis was found among 19.5% and intestinal disease in 3.3% whereas in a study by Pathak G et al⁽¹⁾ gastritis (12%) was the major digestive disorder followed by constipation (6.7%). Such a high prevalence in our study might be due to the spicy cultural and traditional food of this area and the trend of long periods of fasting in between the meals.

In our study, hearing impairment was found in 17.9% and more common in male as compared to female. In contrast to this, in a study by Pathak G et al⁽¹⁾, hearing impairment was present in 8% and was more common among female as compared to male.

In our study, prevalence of respiratory diseases is 27.9% in which bronchial asthma is present in 26.4% whereas in a study by Pathak G et al⁽¹⁾ respiratory diseases were found in 8.7% and bronchial asthma in 2%. A study conducted by Kumar Det al⁽¹¹⁾ reported a 3.7% prevalence of bronchial asthma.

In our study, cardiovascular diseases were present in 68.1%, musculoskeletal disorder in 63.6%, vision problem in 57%, respiratory disease in 27.9%, GI disorder in 22.8%, auditory problem in 17.9%, endocrine disorder in 2.5%, cancer in 0.3% and depressive illness in 1.2% of the study participants. Whereas in a study by George LS et al ⁽¹²⁾, orthopedic problems were present in 50.4%, respiratory illnesses in 31.3%, gastrointestinal problems in 26.5%, dental problems in 23.9%, cardiac illness in 3.5% and cancer in 0.4% of the elderly. The higher prevalence of cardiovascular diseases found in our study could be due to the fact that we had included hypertension, hypercholesterolemia, diabetes mellitus, cardiac illness, cardiovascular accidents and heart failure under cardiovascular diseases.

In our study, none of the sociodemographic factors (gender, age and socioeconomic status) were found to be associated with the morbidity pattern whereas in a study by George LS et al ⁽¹²⁾, age and socioeconomic status were found to be associated with morbidity pattern and not gender, level of education and occupation. In a study by Kumar R et al ⁽⁴⁾, overall morbidity status of elderly was significantly associated with age, gender, working status and type of family.

Strength and weakness of study: Our study was a novel study which had not been conducted in the past under similar settings. It provided comprehensive information about the burden of different medical problems in elderly population in study area. Since this study was conducted among the elderly population residing in the rural most villages of Kangra district of Himachal Pradesh, the findings of the study cannot be generalized to the other elders, especially those living in the urban areas.

5. Conclusion

In our study, cardiovascular diseases were present in 68.1%, musculoskeletal disorder in 63.6%, vision problem in 57%, respiratory disease in 27.9%, GI disorder in 22.8% and auditory problem in 17.9%. The study brings to light that almost all elderly had reported to have one or the other health problem. Most of the health problems of elderly are controllable if addressed properly. Hence there is an urgent need of dealing the geriatric health problems in comprehensive and coordinated approach by health personnels and good compliance by the elderly people and their family members. The capacity building of primary health care providers will help in the early detection of morbidities among the elderly and referring the needy elderly on time to the facilities will definitely help in active and healthy aging.

Conflicts of Interest: None declared.

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