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Research Article

HEALTH STATUS OF GERIATRIC POPULATION RESIDING IN JAMMU DISTRICT, J&K, INDIA

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ABSTRACT

Ageing is a biological process experienced by mankind in all the times. However, the concern for ageing of population is a relatively new phenomenon, which has risen due to significantly large increase in number and proportion of aged persons in the society. A cross-sectional study was conducted in the year 2017-2019 among the geriatric population of Jammu district, J&K by using multi-stage sampling procedure to assess the prevalence of different morbidities prevailing among them. Data was analyzed by using chi-square and proportions in IBM SPSS version 24.0 software. A total of 750 elderly persons participated in the study, out of which 392 (52.3%) were males and 358 (48.7%) were females respectively. Majority of them were suffering from vision problems (51.5%), followed by arthritis (40.7%), hypertension (39.3%), gastrointestinal disorders (38.1%), cataract (30.0%) and so on. It was observed that the prevalence of certain diseases like diabetes, hypertension and vision was more among the urban elderly whereas the prevalence of asthma, cancer and musculoskeletal problems was more among the rural elderly population. The study highlighted the imperative need of improving geriatric health services so as to improve their quality of life.

Keywords: Ageing, Geriatric, Prevalence, Elderly, Morbidity

1. INTRODUCTION

We are living in a world that is growing rapidly. The current global and national demographic structure is shifting towards a higher proportion of elderly resulting in population ageing [1]. Population ageing is defined as the process of increase in proportion of elder persons in the total population and is one of the major global demographic trends in the twenty first century. This process of population ageing, which first began in the developed regions, is now advancing at a rapid rate in the developing countries also [2]. It determines the shift of population change composition towards the older ages, which is the direct result of decrease in fertility and increase in life expectancy. This population ageing can be seen as a success story for public health policies and for socio-economic development, but it also challenges the society to adapt, in order to maximize the health and functional capacity of older people as well as their social participation and security [3]. The needs and problems of elderly vary significantly based on the socio-demographic profile [4].

The boundary of old age cannot be defined exactly because it does not have the same meaning in all societies. According to World Health Organization Report 2018, persons having age 60 years and above are considered as elder. It is believed that between 2015 and 2050, the proportion of world's elder population will nearly double from 12% to 22%. By 2050, this share of elder population is expected to rise to a total of 2 billion, up from 900 million in 2015 [5]. India adopted its first National Policy on Older persons in January, 1999 which defines senior citizen or geriatric as the person having age 60 years and above. The percentage of geriatric people in India has also been increasing at an alarming rate in the recent years and the trend is likely to continue in the coming years. The current statistics shows that the India's geriatric population constitutes 7%-8% of its total population i.e. there are 106 million elderly persons across the nation making India the second largest global population of elderly citizens [6].

Demographic transition has been accompanied by changes in society and economy. Instead of strong family ties in India, the position of a large number of old persons has become vulnerable due to which they cannot assume that their children will be able to look after them [7]. The speed at which the elderly population is growing is a cause of great concern in all the countries of the world. Many health problems are known to increase with increasing age and this demographic trend may lead to various health conditions in this population. Old age diseases are not always curable, but only treatable; causing a great strain on financial as well as on physical health. Many geriatric persons suffer from chronic morbidities, both physical and psychological [8]. Some of these chronic morbidities are more frequent in population like cardiovascular diseases, geriatric hypertension, diabetes, asthma, cancer, vision problems, hearing impairment etc. due to the accumulation of various known and unknown risk factors with time [9]. Thus, there is a need to highlight the health problems and morbidity pattern that are being faced by the elderly population and strategies for bringing out improvement in their health status also need to be explored. In Jammu district, J&K, less work has been done till date to reveal the health status of geriatric population. Hence, this study was conducted among the geriatric population of Jammu district, J&K with the objective of determining the prevalence of several morbidities and the factors associated with these morbidities.

2. MATERIAL AND METHODS

2.1. Ethical Consideration

The study was approved by the Department of Statistics, University of Jammu and the Institutional Ethics Committee of Government Medical College, Jammu.

2.2. Study design and participants

A cross-sectional study was conducted among the geriatric population of Jammu district, J&K during the year 2017-2019. Sample size was calculated by using the formula

$$n = \frac{Z_{\alpha}^2 pq}{d^2}$$

where we consider 95% CI, the z-value at 5% level of confidence for two tailed test is 1.96, the prevalence of diabetes among the geriatric population is 39.0% in a study conducted by Reshmi et al. in Kalaburgi, Karnataka in 2016 [10] with absolute precise margin of error 3.5% and with usual statistical constant (α =0.05) and (β =0.2). The calculated sample size was 746. Hence, we included about 750 geriatric persons in our study. Geriatric persons, who were not willing to participate or not in a position to provide any information, were excluded from the study.

2.3. Data collection

Data was collected from the geriatric population of Jammu district, J&K by visiting their homes, old age homes, primary health centres, community health centres, private hospitals and clinics, district hospitals etc. The sample of geriatric households were selected from Jammu district by using simple random sampling technique in which each of these geriatric persons had equal probability of being selected. Geriatric patients visiting the OPDs of private clinics and district hospitals were selected by using the technique of systematic sampling where the sampling fraction used varies from time to time. For the collection of data regarding the socio-demographic profile and the various morbidities prevailing among the geriatric population, informed consent was obtained from the study subjects after explaining them the purpose and objectives of the study. The study subjects were interviewed and examined. The collected information was recorded on a pre-designed, pre-tested and semi structured questionnaire. The socioeconomic status of urban and rural old-aged people was calculated by using Modified Kuppuswamy scale and Udai Parekh scale respectively [11]. A Geriatric depression scale designed by Yesavage J.A. and Sherry A.G. [12] was used for computing the depression level among the geriatric population. The data was analyzed by using software IBM SPSS version 24.0.

2.4. Data Analysis

Chi-square test and proportions were used to test the association of the morbidities with respect to gender and location. p-value less than 0.05 were considered as significant.

3. RESULTS

Our study enrolled about 750 study subjects in which 392 (52.3%) were males and 358 (47.7%) were females respectively. Majority of the respondents 268 (35.7%) were in the age-group of 60-64 years, followed by 211 (28.1%) respondents in the age-group of 65-69 years, 124 (16.5%) respondents in the age-group of 70-74 years, 65 (8.1%) respondents in the age-group of 75-79 years, 53 (7.1%) respondents in the age-group of 80-84 years and only 29 respondents were in the age group 85 years and above. Table 1 showed the socio-demographic profile of geriatric population of Jammu district, J&K.

Among the 750 geriatric persons included in our study, 383 (51.1%) study subjects belonged to urban areas and 367 (48.9%) study subjects belonged to rural areas. Most of the elderly people 584 (77.9%) belonged to Hindu religion, followed by 89 (11.9%) respondents belonging to Sikh religion whereas the remaining 77 (10.3%) respondents belonging to Muslim religion. 497 (63.3%) geriatric persons were from nuclear families whereas the remaining 253 (33.7%) respondents were from joint families.

Variables	Males	Females	Total	
	N (%)	N (%)	N (%)	
Sex	392 (52.3)	358 (47.7)	750 (100.0)	
Age-groups (in years)			· · · · ·	
60-64	106 (27.0)	162 (45.3)	268 (35.7)	
65-69	123 (31.4)	88 (28.6)	211 (28.1)	
70-74	70 (17.9)	54 (15.1)	124 (16.5)	
75-79	42 (10.7)	23 (6.4)	65 (8.7)	
80-84	33 (8.4)	20 (5.6)	53 (7.1)	
85 and above	18 (4.6)	11 (3.1)	29 (3.9)	
Area		· · ·	· · ·	
Urban	214 (54.6)	169 (47.2)	383 (51.1)	
Rural	178 (45.4)	189 (52.8)	367 (48.9)	
Religion				
Hindu	299 (76.3)	285 (79.6)	584 (77.9)	
Muslim	49 (12.5)	28 (7.8)	77 (10.3)	
Sikh	44 (11.2)	45 (12.6)	89 (11.9)	
Family type				
Nuclear	255 (65.1)	242 (67.6)	497 (66.3)	
Joint	137 (34.9)	116 (32.4)	253 (33.7)	
Marital status			· · · · ·	
Married	337 (86.0)	207 (57.8)	544 (72.5)	
Widow/Widower	55 (14.0)	151 (42.2)	206 (27.5)	
Dependency status				
Living independent	363 (92.6)	24 (6.7)	387 (51.6)	
Partially dependent on others	19 (4.8)	123 (34.4)	142 (18.9)	
Totally dependent	10 (2.6)	211 (58.9)	221 (29.5)	
Pension receiving status				
No	140 (35.7)	204 (57.0)	344 (45.9)	
Yes	252 (64.2)	154 (43.0)	406 (54.1)	
Socio-Economic Status				
Upper lower	69 (17.6)	85 (23.7)	154 (20.5)	
Lower middle	150 (38.3)	134 (37.4)	284 (37.9)	
Upper middle	105 (26.8)	109 (30.4)	214 (28.5)	
Upper	68 (17.3)	30 (8.4)	98 (13.1)	
Living status				
Living alone	10 (2.6)	12 (3.4)	22 (2.9)	
Living with spouse	19 (4.9)	20 (5.6)	39 (5.2)	
Living with children and spouse	352 (90.0)	318 (88.8)	670 (89.5)	
Living with relatives	11 (2.8)	8 (2.2)	19 (2.5)	
Number of morbidities				
No morbidity or one morbidity	214 (54.59)	162 (45.3)	376 (50.1)	
Two morbidities	128 (32.7)	130 (36.3)	258 (34.4)	
Three morbidities	40 (10.2)	50 (14.0)	90 (12.0)	
More than three morbidities	10 (2.6)	16 (4.5)	26 (3.5)	

Table 1: Distribution of study subjects according to socio-demographic profile

Nearly two-third i.e. 544 (72.5%) of the study population was married, followed by 206 (27.5%) widow/widowers. Economically, 387 (51.6%) respondents were living independent, followed by 221 (29.5%) who were completely dependent on their spouse or others and the remaining 142 (18.9%) respondents were partially dependent on others.

Out of the total 750 study subjects, 406 (54.1%) subjects were receiving the benefits of various types of pension schemes whereas the other 344 (45.9%) subjects were not the recipients of any kind of pension facilities.

Our study population included 284 (37.9%) respondents who were having lower middle socio-economic status, followed by 214 (28.5%) respondents who belonged to upper middle class, 154 (20.5%) persons belonging to upper lower class category whereas the remaining 98 (13.1%) persons were having the socio-economic status of upper class respectively. Majority of the geriatric population i.e. 670 (89.5%) people were living with their children and spouse, 39 (5.2%) respondents were living with their spouse only, 22 (2.9%) respondent were living alone whereas the other 19 (2.5%) respondents were living with their relatives respectively. Nearly half of the study subjects i.e. 376 (50.1%) were suffering from either no morbidity or one morbidity, followed by 258 (34.4%) respondents having two morbidities, 90 (12.0%) were suffering from three morbidities and the remaining 26 (3.5%) were having more than three morbidities.

BMI was calculated for all the study subjects. Table 2 showed the distribution of study population according to BMI. More than half of the geriatric population i.e. 508 (67.7%) respondents were having normal weight whereas 215 (28.7%) respondents were overweight and only 27 (3.6%) respondents were obese.

Table 2: Distribution of geriatric population according to BMI (kg/m²)

Variables	Males N (%)	Females N (%)	Total N (%)
BMI	<u></u>	~ /	
Normal weight	305 (77.8)	203 (56.7)	508 (67.7)
Overweight	75 (19.1)	140 (39.1)	215 (28.7)
Obese	12 (3.1)	15 (4.2)	27 (3.6)

Table 3 depicted the prevalence of morbidities among the geriatric population of Jammu district, J&K. The most common morbidity was vision problem (51.5%) followed by arthritis (40.7%), hypertension (39.3%),

gastrointestinal disorders (38.1%), cataract (30.0%), diabetes (26.5%), body ache (25.9%), asthma (17.6%), and cardiovascular diseases (14.7%), insomnia (14.3%), cancer, hearing impairment and anaemia (10.9%), kidney diseases and so on.

Table 3:	Morbidity	pattern	among	the	geriatric
populati	on				

Diseases	Frequency (%)
Diabetes	199 (26.5)
Hypertension	295 (39.3)
Cardiovascular diseases	110 (14.7)
Arthritis	305 (40.7)
Asthma	132 (17.6)
Cancer	82 (10.9)
Kidney diseases	46 (6.1)
Anaemia	76 (10.1)
Vision	386 (51.5)
Cataract	225 (30.0)
Hearing impairment	82 (10.9)
Gastrointestinal disorders	286 (38.1)
Insomnia	107 (14.3)
Dementia	64 (8.5)
Body ache	194 (25.9)
Psychological disorders	46 (6.1)
COPD	32 (4.3)
Musculoskeletal problems	35 (4.7)
Others	214 (28.5)

The association of morbidities prevailing among the geriatric population of Jammu district, J&K with respect to gender was shown in Table 4. It was found that the prevalence of hypertension, arthritis, anaemia and gastrointestinal disorders and some other diseases were found to be significantly higher among the females as compared to males whereas the prevalence of vision and COPD were also statistically significant (p < 0.05).

But here the prevalence of these morbidities was higher in males as compared to females.

Table 5 showed the association of morbidities prevailing among the geriatric population of Jammu district, J&K with respect to location. It was observed that diabetes, hypertension, asthma, cancer, vision, cataract and musculoskeletal problems were significantly associated with respect to location (p < 0.05). The morbidities like diabetes, hypertension and vision were found to be higher among the urban elderly whereas the morbidities like asthma, cancer, and cataract were found to be high among the elderly living in rural areas as compared to the elderly in urban areas.

Table 4: Association of the morbidities	prevailing among the	geriatric population w. r. t.	gender
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	Ma	ales	Fem	ales	То	otal	χ^2
Morbidities	(n=	392)	(n=	358)	(n=	750)	(p-value)
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	u ,
Diabetes	98 (25.0)	294 (75.0)	101 (28.2)	257 (71.8)	199 (26.5)	551 (73.5)	0.320
Hypertension	151 (38.5)	241 (61.5)	144 (40.2)	214 (59.8)	295 (39.3)	455 (60.7)	0.043
Cardiovascular diseases	64 (16.3)	328 (83.7)	46 (12.8)	312 (87.2)	110 (14.7)	640 (85.3)	0.179
Arthritis	133 (33.9)	259 (66.1)	172 (48.0)	186 (52.0)	305 (40.7)	445 (59.3)	< 0.001
Asthma	75 (19.1)	317 (80.9)	57 (15.9)	301 (84.1)	132 (17.6)	618 (82.4)	0.249
Cancer	41 (10.5)	351 (89.5)	41 (11.5)	317 (88.5)	82 (10.9)	668 (89.1)	0.663
Kidney diseases	23 (5.9)	369 (94.1)	23 (6.4)	335 (93.6)	46 (6.1)	704 (93.9)	0.751
Anaemia	30 (7.7)	362 (92.3)	46 (12.8)	312 (87.2)	76 (10.1)	674 (89.9)	0.019
Vision	218 (55.6)	174 (44.4)	168 (46.9)	190 (53.1)	386 (51.5)	364 (48.5)	0.017
Cataract	115 (29.3)	277 (70.7)	110 (30.7)	248 (69.3)	225 (30.0)	525 (70.0)	0.678
Hearing impairment	51 (13.0)	341 (87.0)	31 (8.7)	327 (91.3)	82 (10.9)	668 (89.1)	0.056
Gastrointestinal disorders	126 (32.1)	266 (67.9)	160 (44.7)	198 (55.3)	286 (38.1)	464 (61.9)	< 0.001
Insomnia	47 (12.0)	345 (88.0)	60 (16.8)	268 (83.2)	107 (14.3)	643 (85.7)	0.062
Dementia	34 (8.7)	358 (91.3)	30 (8.4)	328 (91.6)	64 (8.5)	686 (91.5)	0.886
Body ache	93 (23.7)	299 (76.3)	101 (28.2)	257 (71.8)	194 (25.9)	556 (74.1)	0.161
Psychological disorders	22 (5.6)	370 (94.4)	24 (6.7)	334 (93.3)	46 (6.1)	704 (93.9)	0.534
COPD	27 (6.9)	365 (93.1)	5 (1.4)	353 (98.6)	32 (4.3)	718 (95.7)	< 0.001
Musculoskeletal problems	19 (4.8)	373 (95.2)	16 (4.5)	342 (95.5)	35 (4.7)	715 (95.3)	0.807
Others	96 (24.5)	296 (75.5)	118 (33.0)	240 (67.0)	214 (28.5)	536 (71.5)	0.010

Table 5: Association of morbidities prevailing among the geriatric population w. r. t. location

	Ur	ban	Ru	ral	То	tal	χ^2
Morbidities	(n=	383)	(n=	367)	(n=	750)	(p-value)
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	
Diabetes	119 (31.1)	264 (68.9)	80 (21.8)	287 (78.2)	199 (26.5)	551 (73.5)	0.004
Hypertension	177 (46.2)	206 (53.2)	118 (32.2)	249 (67.8)	295 (39.3)	455 (60.7)	< 0.001
Cardiovascular diseases	62 (16.2)	321 (83.8)	48 (13.1)	319 (86.9)	110 (14.7)	640 (85.3)	0.229
Arthritis	154 (40.2)	229 (59.8)	151 (41.1)	216 (58.9)	305 (40.7)	445 (59.3)	0.794
Asthma	52 (13.6)	331 (86.4)	80 (21.8)	287 (78.2)	132 (17.6)	618 (82.4)	0.003
Cancer	31 (8.1)	352 (91.9)	51 (13.9)	316 (86.1)	82 (10.9)	668 (89.1)	0.011
Kidney diseases	20 (5.2)	363 (94.8)	26 (7.1)	341 (92.9)	46 (6.1)	704 (93.9)	0.288
Anaemia	39 (10.2)	344 (89.8)	37 (10.1)	330 (89.9)	76 (10.1)	674 (89.9)	0.963
Vision	224 (58.5)	159 (41.5)	162 (44.1)	205 (55.9)	386 (51.5)	364 (48.5)	< 0.001
Cataract	93 (24.3)	290 (75.7)	132 (36.0)	235 (64.0)	225 (30.0)	525 (70.0)	< 0.001
Hearing impairment	35 (9.1)	348 (90.9)	47 (12.8)	320 (87.2)	82 (10.9)	668 (89.1)	0.108
Gastrointestinal disorders	143 (37.3)	240 (62.7)	143 (39.0)	224 (61.0)	286 (38.1)	464 (61.9)	0.646
Insomnia	48 (12.5)	335 (87.5)	59 (16.1)	308 (83.9)	107 (14.3)	643 (85.7)	0.165
Dementia	30 (7.8)	353 (92.2)	34 (9.3)	333 (90.7)	64 (8.5)	686 (91.5)	0.483
Body ache	91 (23.8)	292 (76.2)	103 (28.1)	264 (71.9)	194 (25.9)	556 (74.1)	0.178
Psychological disorders	22 (5.7)	361 (94.3)	24 (6.5)	343 (94.5)	46 (6.1)	704 (93.9)	0.650
COPD	15 (3.9)	368 (96.1)	17 (4.6)	350 (95.4)	32 (4.3)	718 (95.7)	0.628
Musculoskeletal problems	12 (3.1)	371 (96.9)	23 (6.3)	344 (93.7)	35 (4.7)	715 (95.3)	0.042
Others	104 (27.2)	279 (72.8)	110 (30.0)	257 (70.0)	214 (28.5)	536 (71.5)	0.393

4. DISCUSSION

Ageing is a universal phenomenon and presents both challenges and opportunities for the family as well as society. The trend of decreasing percentage of geriatric population with the increment of age was observed in our study. Similar findings were observed in the studies conducted by different researchers like Bharati et al. and many others [4, 8, 13-15]. Like the studies conducted by Chaudhary et al. and many others, the number of male subjects was predominant in our study as compared to the number of females [8, 16, 17]. But in some other studies conducted by Sahu et al. and other researchers, the proportion of female subjects outnumbered the male study subjects [4, 18-20]. In our study, most of the geriatric people were Hindus (77.9%) followed by Sikhs (11.9%) and Muslims (10.3%). Another study conducted by George et al. observed the same pattern in which 89.6% of the total geriatric population was Hindus [1]. Bardhan et al. and many others also reported that majority of the population were Hindus [4, 21]. In our study, we included 65.1% geriatric people from nuclear families whereas the remaining 34.9% geriatric people from joint families. Shraddha et al. [4] also reported the same findings in their study. Banjare et al. and many other researchers [8, 15, 19] reported that majority of the geriatric population was married. Similar findings were reported in our study in which 72.5% of the geriatric married 27.5% population was followed by widow/widowers. According to the classification of socio-economic status by Modified Kuppuswamy scale, our study reported that 37.9% of the geriatric population belonged to lower middle class, followed by upper middle class (28.5%), upper lower class (20.5%) and upper class (13.1%). This is contrary to the study conducted by Reshmi et al. in Karnataka, 2016 [10] who reported that majority of the population belonged to lower class (70%), followed by upper lower class (29%) respectively.

In our study, majority of the study subjects (51.6%) were living independent, followed by the people who were totally dependent on others (29.5%). Similar trends were observed by Banjare and Pradhan in Bargarh district, Odisha [19]. Like the study executed by Gupta et al. in Faridabad, Harayana, majority of the geriatric population (89.5%) included in our study were living with their children and spouse [9]. In our study, about two-third of the geriatric population (67.7%) was having normal weight, followed by 28.7% overweight people whereas the remaining 3.6% of the geriatric population was obese. Similar pattern was reported by Prakash et al. and Barman et al. [7, 22] in their respective studies.

Vision problem (51.5%) was the most common morbidity observed in our study followed by arthritis (40.7%), hypertension (39.3%), gastrointestinal disorders (38.1%), cataract (30.0%), diabetes (26.5%), body ache (25.9%), asthma (17.6%), cardiovascular diseases (14.7%), cancer and hearing impairment (10.9%) and so on. Gupta et al. [3] also revealed the same morbidity pattern where eye problems were observed in 68.1% study subjects followed by hypertension (44.0%), gastrointestinal disorders (38.6%) and so on. Similar findings were detected by Prakash et al. and Barman et al. [7, 22] in their respective studies.

The present study indicated that the prevalence of certain like hypertension, morbidities vision, arthritis, gastrointestinal disorders, anaemia, vision, COPD and other diseases were highly significant with respect to gender (p < 0.05). This is in accordance with the study conducted by Bhatia et al. [5] in Chandigarh. Similar findings were depicted by Gupta et al. and many other researchers in their respective studies [3, 23]. Also, the morbidities like diabetes, hypertension, vision, asthma, cancer, vision, cataract, musculoskeletal problems, asthma, cancer and cataract were highly significant with respect to location (p < 0.05).

5. CONCLUSIONS

Old age is usually associated with increasing health problems. The ageing population is both a medical as well as sociological problem. Our study highlighted the major health problems suffered by the geriatric population of Jammu district, J&K. So, strong efforts should be taken to provide specialized care to this group so that they remain active and provide maximum potential to our society. Community must learn to respect their grand elderly, understand them and treat them with honour, dignity and abundant love. There is a need to strengthen the health care facilities for the early detection and control of these morbidities.

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