

Research Article

Morbidity pattern among the elderly population in the rural area of Pondicherry: a cross sectional study

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ABSTRACT

Background: Aging is a biological process, experienced by mankind in all times. However, concern for aging of population is a relatively new phenomenon, which has raised due to significantly large increase in number and proportions of aged persons in the society.” The present study was conducted to access the morbidity pattern of the geriatric population (age >60years) from the field practice area of Department of Community medicine, MGMC&RI. The objective of the study was to assess the Socio-Demographic variables and to identify the morbidity pattern among the geriatric population.

Methods: The study was carried out at the community level, of the field practice area of department of community medicine, MGMC&RI, Puducherry from Jan 2010 to Dec 2010. All the persons aged 60 years and above were listed. Samples were selected proportionately according to geriatric population of individual villages. Simple Random Sampling was used to select the study sample of 360 from the list. House to house visits was made to collect the data.

Results: Majority of the elderly was in the age group of 60-69 (59.2%), Illiterate and in BPL category. Use of smoking and alcohol was more in males while tobacco in females. Visual disability was followed by Hearing and speech. 50% had history of chronic diseases. Anemia was seen in (96%) followed by , hypertension 28%, arthritis (25%), diabetes (22%), respiratory diseases including asthma and tuberculosis (9%), acid peptic diseases (5%), falls (4%), and skin conditions (2%). Presence of chronic diseases was associated with low SES (P = 0.003). 73% showed psychological morbidity and associated in males (P=0.003).

Conclusions: Fifty percent morbidity was observed regarding to the presence of chronic diseases. Morbidities differ from place to place and unique to ones geographical area, customs, social and cultural practices. Majority of the elderly with morbidities rated their health to be good showing their mental attitude of understanding ageing and life.

Keywords: Elderly, Geriatric, Morbidity, Rural, Chronic

INTRODUCTION

World Health Organization (1948) in the preamble to its constitution defines Health as, “a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity”.¹

It has been amplified to include the ability to lead a “socially and economically productive life”.

Health is an “individual responsibility requiring collective action to ensure a society and environment in which people can act responsibly”.¹

The word Geriatrics² was coined by Nascher in 1914. The meaning of “gerus and iatra” being “old age and treatment”. Senescence is the process of ageing.³ Changes that are an outcome of a lifelong interaction between two

opposing processes: one representing evolution/growth, and the other involution/atrophy.

Morbidity is any departure subjective or objective from a state of physiological wellbeing. Ageing is a universal process. In the words of Sir James Ross, “you cannot heal old age; you protect it, promote it and extend it”. Through advancements in modern technologies and medicine, a greater number of humans are surviving into later life with the potential to reach the age of 120 years. This phenomenon known as the “rectangularisation” or “box shaping” of the survival curve of the man, suggest that the average life span of man is increasing.¹ Never before so many people lived so long. As we age the interface between health & illness blurs. Balance gradually shifts from health to disease. While health is usually inversely related to age, disease is directly related to ageing both in number & severity². Over the decades India's Health programs & policies have been focusing on issues like population stabilization, MCH services & disease control. Unfortunately very little attention has been focused on the pitiable plight of the elderly population in rural & urbanizing villages of the country. There is no standard numerical criterion, but the United Nation agreed cut off is 60+ years when referring to the elderly population.⁴

The world experienced dramatic population growth during the twentieth century, with the number of inhabitants doubling from 3 to 6 billion between 1960 and 2000. India, too, saw very rapid population growth during this period from 448 million to 1.04 billion and to 1.21 billion in 2010.⁵

India's population is rapidly moving towards an older age structure consequent on declining mortality and high fertility in the twentieth century, followed by a rapid decline in fertility and access to better health care in recent times as successively larger cohorts step into old age.⁶

Special features of elderly population in India include:⁷

80 percent of them are in rural area

Feminization of elderly population (51% would be women by 2015)

Increase in number of “older old”.

Hence the present study was conducted to access the morbidity pattern of the geriatric population (age >60years) from the field practice area of Department of Community medicine, MGMC&RI

Objective

To study the morbidity pattern among geriatric population in the field practice area of department of community medicine.

METHODS

The present study was carried out at the community level, of the field practice area of Department of Community Medicine, MGMC&RI, Puducherry. The total population of the study area was 6406 from the three villages. From the family folder the elderly population 60 years and above were listed. Sample size was calculated as 360 with 52% prevalence of morbidity among people >60 years in the population according to NSSO with 95% C.I.⁸

All the persons aged 60 years and above were listed. Samples were selected proportionately according to geriatric population of individual villages. Simple random sampling was used to select the study sample of 360 from the list. House to house visits was made to collect the data in a pretested semi-structured questionnaire. The data collection was done by personal interview with questionnaire, clinical examination and Individual health record. Prior information was given for the subjects regarding the time and place before going to the house visits so that the study subjects made themselves available for the activity.

All aged people aged 60 years and above, willing to participate was included in the study.

People >60 years not willing to participate and completely bed ridden were excluded from the study

RESULTS

Majority (59.2%) of the elderly were in the age group of 60-69 followed by 33.6% in 70-79 and 7.2% in 80 and above. 47% of the elderly were currently married and Widow/widower constituted 52%. More number of females was widows in age group of 70-79, 80 and above compared to males. Majority of the elderly are Illiterate 297, 50 had primary education, 9 secondary educations and only one male was a graduate. Majority of the elderly had a personal income of around Rs 500-1000. 17 subjects had no income of any kind.

Majority of the elderly were non-smokers (78.8%). Only 10% of the elderly were current smokers out of which three were female smokers (1%). 40 (11%) were ex-smokers. Elderly who were currently consuming alcohol comprised 18.8% (68) out of which 7 was females (3%). Majority i.e., 268 (74.5%) were non-alcoholics. 53% (191) of the elderly presently consumed tobacco in any form. Female elderly constituted 70% (162) of the total tobacco users with respect to males 23% (29). When compared within sex, smoking and alcohol consumption was more in males while tobacco use was more in females which was statistically significant.

Table 1: Distribution of study variables according to sex.

Variables	Sex			χ^2	P-value
Age	Male	Female	Total	15.249	0.0004
60-69	62	151	213		
70-79	49	72	121		
80 & >	17	9	26		
Marital Status					
Married	104	66	170	92.417	<0.0001
Divorced	24	164	188		
Others	0	2	2		
Education					
Illiterate	89	208	297	27.422	<0.0001
Primary	28	22	50		
Secondary	7	2	9		
PUC	3	0	3		
Graduate	1	0	1		
Personal Income					
Nil	7	10	17	20.336	<0.0001
< 500	4	4	8		
500-1000	94	208	302		
1000 & >	23	10	33		
Per capita income					
Upper High	1	0	1	12.335	0.030
High	2	0	2		
Upper middle	4	4	8		
Lower middle	25	28	53		
Poor	43	73	116		
Poor/BPL	53	127	180		

Table 2: Distribution of subjects with personal habits.

Personal Habits	Male	Female	Total	χ^2 (df)	P value
Smoking					
Current	33	3	36 (10%)	154.45 (2)	<0.001
Ex-smoker	40	0	40 (11.1%)		
Non-smoker	55	229	284 (78.8%)		
Alcohol					
Current	61	7	68 (18.8%)	175.04 (2)	<0.001
Ex-alcoholics	24	0	24 (6.7%)		
Non-alcoholics	43	225	268 (74.5%)		
Tobacco in any forms					
Absent	99	70	169 (47%)	73.69 (1)	<0.001
Present	29	162	191 (53%)		

Table 3: Presence of chronic diseases among the study subjects.

Chronic diseases	Number of persons	Percent
No illness	179	49.7
Diabetes	39	10.8
Hypertension	51	14.2
Heart diseases	1	0.3
Arthritis	45	12.5
Cancer	1	0.3
Tuberculosis	3	0.8
Asthma	13	3.6
Paralyses/stroke	1	0.3
Dementia	3	0.8
Tremors	1	0.3
Alcoholic neuritis	1	0.3
Peptic ulcer	9	2.5
Skin conditions	4	1.1
Falls	7	1.9
Genito urinary tract	2	0.6
More than two diseases	61	16.9
Total	360	100

With regard to chronic diseases 50% of the elderly had history of chronic diseases. 17% (61) of the elderly had more than one chronic disease. The major problem was hypertension 28% followed by arthritis (25%), diabetes (22%), respiratory diseases including asthma and tuberculosis (9%), acid peptic diseases (5%), falls (4%), and dermatological conditions (2%) respectively. Majority of the females had one chronic disease compared to males, but males outnumbered females with presence of three or more chronic diseases. 33% percent had one chronic disease followed by 12% and 5% with two and three diseases respectively. According to age group 30% had one or more chronic diseases in the age group of 60 – 69 years followed by 17% and 3% in 70 – 79 and >80 years category.

Chronic diseases were significantly associated with lower socio-economic status.

DISCUSSION

In our study the elderly (60+ years) constituted 8.03% of the total population. Majority of the elderly were in the age group of 60-69 followed by 70-79 and 80 and above. The percentage of females in the age group of 80 and above was low. However more number of females lived longer in age groups 60-69 and 70-79 compared to males.

Ravishankar observed that the elderly (60+ years) in Tamilnadu constituted 8.83% and in rural Tamilnadu it was 8.6%.⁹ Our study area also had the elderly population of 8.03% which was nearer to that observed by Ravishanker.

Table 4: Age wise distribution of subjects according to presence of chronic diseases.

Age	Chronic diseases				Total	χ^2	P value
	Absent	1 Disease	2 Disease	3 & More			
60 - 69	105 (49%)	70 (33%)	26 (12%)	12 (6%)	213	5.328 (10)	0.868
70 - 79	60 (50%)	40 (33%)	16 (13%)	5 (4%)	121		
80 & >	14 (54%)	10 (39%)	2 (8%)	0%	26		
Total	179	120	44	17	360		

Table 5: Distribution of chronic diseases among different socio-economic status.

Socio-economic status	Chronic diseases				Total	χ^2	P value
	Absent	1 Disease	2 Disease	3 and More			
Upper high	0	0	0	1	1	48.4 (25)	0.003
High	1	1	0	0	2		
Upper middle	4	3	1	0	8		
Lower middle	32	11	5	5	53		
Poor	50	43	17	6	116		
BPL	92	62	21	5	180		
Total	179	120	44	10	360		

Subramanyam et al in their study of community based health care for the elderly in Pondicherry showed 66%, 25% and 8% for the ages 60 -69, 70 – 79 and 80 – 89 respectively which was similar to our findings.¹⁰

In our study 82.5% of the elderly were illiterate. 13% had primary education, 2.5% secondary and less than 1% constituted Pre University and graduation. Kammar et.al¹¹ in his study observed that 40% of the elderly were illiterate, 17% primary, 24% secondary, 8% pre university and 5.6% graduates. The difference of observation from our study is due to the fact that his study included both urban and rural population.

In our study 4.7% of the subjects had no personal income of any sorts. 2.2% had less than Rs 500 and majority had an income between 500 – 1000 rupees. 34% of the subjects said they did not depend on economic support from the family.

Manda et al in his study observed that 27.2% of the elderly subjects were in class V (poor) where as our study showed 32% were in class V.¹²

Purty et al in their study from a similar geographical area of Pondicherry observed that 61% of the elderly chewed tobacco, 33% of males were smokers and 28% of the subjects regularly consumed alcohol.¹³ Goswami et al reported that the total prevalence of smoking was 57%.¹⁴ In males it was 72% and 41% in females respectively. 16% of men and 1% of women consumed alcohol. Our study showed near similarities to that observed by Purty et al in tobacco consumption but the prevalence of smoking and alcohol consumption was bit high in males.

Subramanyam et al in their community based health care study for the elderly at Pondicherry observed that 28% of the elderly had hypertension which was comparable with our observation.¹⁰ But the difference noted with respect to respiratory illness, arthritis and diabetes mellitus which was not comparable was due to the fact that the former study was based on elderly attending geriatric clinic.

Srinivasan et al observed diabetes, hypertension and arthritis.¹⁵ Our study although followed similar pattern i.e. hypertension (14%) followed by arthritis (12%) and diabetes mellitus (10%) it completely differed when compared with income groups where presence and increase in chronic diseases was seen more in lower income groups.

Purty et al in their rural based study on elderly observed eye problem in 57%, arthritis 43.4%, hypertension 14%, Respiratory 18% and diabetes in 8.1%.¹³ Different geographical settings may be the reason for the difference in observations when compared to our study.

Sheela et al in their study at Coimbatore in Tamil-Nadu state observed that almost all the elderly women suffered disabilities like visual (58.0 %), hearing (11.1%), speech (1.6%) and physical (0.9%).¹⁶ The order of disabilities observed was similar to our study.

Kishore et al in their study of Morbidity profile of elderly attending a rural health training centre observed hypertension (41.4%), followed by musculoskeletal problems (36.8%), respiratory problems (36.1%) and psychosocial problems (28.8%).¹⁷

CONCLUSION

This study was of a cross sectional in nature and shows that majority of the elderly were in the age group of 60-69 (59.2%). Currently married comprised 47%, more number of females were widows in age group of 70-79 and 80 and above compared to males. Majority of the elderly are Illiterate (82.5%) and significantly more in females. Seventeen subjects (4.7%) had no income of any kind. Majority had a personal income of around Rs 500-1000 per month in the form of Government pension. Survey showed that 50% of elderly are in BPL category according to per capita income which was assessed by using Modified Prasad's classification. Females comprised more among BPL category.

Smoking and alcohol consumption was more in males while tobacco use was more in females. Majority of the females had one chronic disease compared to males, but males outnumbered females with presence of three or more chronic diseases. 30% of the elderly in the age group of 60-69 had one or more chronic diseases.

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REFERENCES

1. Park K. Park's Textbook of Preventive and Social Medicine, 22nd edition. Jabalpur, India: Bhanot Publishers. 2013:549-550.
2. Lal S, Adarsh, Pankaj. Text book of Community Medicine, 1st ed. New Delhi: CBS Publishers. 2007:649-50.
3. India. Health of the elderly in South-East Asia a profile. WHO regional office for South-East Asia, New Delhi. 2004.
4. Makinodan T, Yonis E. Biology of ageing: Retrospect and Prospect. Immunology and ageing. New York: Plenum Medical books Co. 1997:1-7.
5. David E. Bloom. Working Paper Series Population Dynamics in India and Implications for Economic Growth Program on the global demography of aging .January:2011. Available from: <http://www.hsph.harvard.edu/pgda/working.htm>.
6. Rajan SI. Population ageing and health in India. Mumbai: Centre for Enquiry into Health and Allied Themes [CEHAT]. 2006. Available from: <http://www.cehat.org/humanrights/>. Accessed on 15 October 2015.
7. India Country Report. Population and Development: 10 Years since ICPD. Dept. of Family Welfare Ministry of Health and Family Welfare. Government of India: January. 2015.
8. World Health Organization. Global Burden of Disease Report. Geneva. 2004. Available from: http://www.who.int/healthinfo/globalburden_diseases/GBD_report_2004update_part3.pdf. Accessed on 15 October 2015.
9. Ravishankar AK. Ageing and Family Support of Elderly in South India. Indian Journal of Gerontology. 2010;24(4):482-500.
10. Subramanyam DKS, Premarajan KC, Dutta TK, Soudarssanane BM. Community based health care for the elderly. Project Report Implemented Under The Government of India World Health Organization Collaborative Programme: 2006-2007.
11. Kamma MR, Kamath R, Ashalatha KV. Functional Abilities of the Aged Indian Journal of Gerontology. 2011;25(1):41-50 .
12. Manda PK, Chakrabarty D, Manna N, Sarmila Mallik, Chatterjee C. Disability among geriatric females: an uncared agenda in rural India. Sudanese Journal of Public Health. 2009;4(4):376-82.
13. 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.
14. Goswami A, Reddaiah VP, Kapoor SK, Singh B. Tobacco and Alcohol use in Rural elderly population. Indian Journal of Psychiatry. 2005;47:192-97.
15. Srinivasan K, Vaz M, Thoiias T. Prevalence of health related disability among community dwelling urban elderly from middle socioeconomic strata in Bangaluru, India, Indian J Med Res. 2010;4(131):515-21.
16. Sheela J, Jayamala M. Health condition of the elderly women: a need to enhance their wellbeing. IJSAS. 2008;1(1):1-15.
17. Kishore S, Juyal R, Semwal J, Chandra R. Morbidity Profile of Elderly Persons .J K Science. 2007;9(2):87-9.

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