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A Cross-sectional Study of Morbidity Profile of Geriatric Population in Slum Areas under Urban Health Training Centre, Solapur

[1]Dr. Payel Roy, Junior Resident, Department of Community Medicine, Dr. Vaishampayan Memorial Govt. Medical College, Solapur

[2]Dr. Viresh A. Nandimath, Assistant Professor, Department of Community Medicine, Dr. Vaishampayan Memorial Govt. Medical College, Solapur.

[3]Dr. Santosh J. Haralkar, Associate Professor, Department of Community Medicine, Dr. Vaishampayan Memorial Govt. Medical College, Solapur.

[4]Dr. Kavita H. Bhadake, Junior Resident, Department of Community Medicine, Dr. Vaishampayan Memorial Govt. Medical College, Solapur.

[5]Dr. Rajesh B. Chaugule, Assistant Professor, Department of Community Medicine, Dr. Vaishampayan Memorial Govt. Medical College, Solapur.

Corresponding Author: Dr. Payel Roy, Junior Resident, Department of Community Medicine, Dr. Vaishampayan Memorial Govt. Medical College, Solapur

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Abstract

Background: Aging is considered as a natural and universal process. James Sterling Ross Commented: "You do not heal old age. You protect it; you promote it; you extend it''. United Nation agreed that the cut off age is 60 years and above for referring to elderly population. Globally, the geriatric population has increased from 8% in 2012 to 8.5% in 2015 and expected to rise by 22% in 2050. In India geriatric population has increased from 8.6% in 2011 to 10.1% in 2021 and expected to increase in 13.1% in 2031. As geriatric group of people are a largely neglected section of society, this cross-sectional study was undertaken to study morbidity profile of geriatric population in slum areas under UHTC, Solapur.

Objectives

1. To estimate prevalence of morbidity profile among geriatric population
2. To assess association between sociodemographic factors & morbidity profile of geriatric population

Materials & Methods: A community based cross-sectional study was conducted in the slum areas under UHTC, Solapur from 1st June 2023 to 31st July 2023. Geriatric age group population (age ≥60 years) were taken in the study. Study was conducted after taking approval from the Institutional Ethics Committee and predesigned and pretested proforma was used for data collection. Data was calculated in Microsoft Excel software and by using chi-square and fisher exact test.

Result: In this study among 200 study subjects 194 (97%) were suffering from one or more morbidities. Among 200 study subjects 76% were suffering from hypertension, followed by musculoskeletal problem 65.5%. Morbidity was significantly associated with age group, religion, type of family and socio-economic status.

Conclusion: Majority of the geriatric population were suffering from hypertension and there were significant association between age group, religion, family size and socio-economic status with morbidity.

Keywords: Geriatric, Morbidity, Urban slum areas

Introduction

Aging is considered as a natural and universal process.[1] The aging process is a biological reality which is having its own dynamic and largely beyond human control.[2] It is characterized by time altered changes in an individual's biological, psychological, and health-related capabilities and its implications for the consequent changes in the individual's role in the economy and in the society.[1] In the words of Seneca, "Old is an incurable disease'', but more recently, Sir James Sterling Ross Commented: "You do not heal old age. You protect it; you promote it; you extend it''.[3] There is no United Nation standard age classification regarding elderly person but United Nation agreed that the cut off age is 60 years and above for referring to elderly population.[3] It is common to define the "young old" as aged 60-69 years, the "old" as aged 70-79 years and the "oldest old" as 80 years and over.[4] The United Nations has identified the top three global socio-economic issues in the 21st century namely- global warming, global terrorism and global aging.[5] WHO is also concerned about health of this group and is promoting the concept of healthy aging throughout the World.[6] Today care of old age people is becomes a big social problem due to urbanization, nuclearization of family, migration and dual career.[7] The elderly people are the precious asset for any country. With their rich experience and wisdom, they contribute their strength for the substance and progress of the nation.[8] The speed at which the population is aging is causing a serious concern of the world. The three areas where the impact is being felt the most are health, economy and social areas.[9] Government of India's health programs and policies have been have been largely directed on issues such as population stabilization, maternal and child health, and infectious control, there are very few policies for elderly.[10] There is need to focus on the medical and socioeconomic problems that being faced by the geriatric population in India.[10] Geriatric population (≥60 years age) is an extremely vulnerable group, having the potential to suffer multiple communicable and non-communicable illness.[11] Globally, the geriatric population has increased from 8% in 2012 to 8.5% in 2015 and expected to rise by 22% in 2050.[12] In India geriatric population has increased from 8.6% in 2011 to 10.1% in 2021 and expected to increase in 13.1% in 2031.[13] Elderly people suffer from two types of health problems i.e. medical and psychosocial.[14] Common medical problems are cardiovascular, visual, musculoskeletal and gastrointestinal diseases etc.[15]

As geriatric group of people are a largely neglected section of society, we found this topic appealing and

important at the same time. Keeping in view this cross-sectional study was undertaken to study morbidity profile of geriatric population in slum areas under Urban Health Training Centre, Solapur. The findings would help us in developing more effective and comprehensive strategies for improvement in geriatric health.

Aim and Objectives

Aim- To estimate prevalence of morbidity profile among geriatric population in slum areas under Urban Health Training Centre

Objectives

1. To estimate prevalence of morbidity profile among geriatric population
2. To assess association between sociodemographic factors & morbidity profile of geriatric population

Materials & Methods

Study area: Urban slum areas under UHTC, Solapur.

Study type: Observational descriptive study.

Study design: Cross- sectional study design.

Sampling frame: All geriatric age group population (≥60 years) residing in slum areas under urban health training center.

Sampling unit: A geriatric age group person (≥60 years) residing in slum area under urban health training center.

Sample size calculation: Prevalence of morbidity (musculoskeletal) in geriatric population is 77.20%. [2]

Calculation of sample size: The sample size estimated by using formula at 95% confidence interval and 6% allowable error.

$$\text{Sample size (n)} = \frac{Z^2 \times p \times q}{l^2}$$

$$= \frac{(1.96)^2 \times 77.20 \times 22.80}{6^2}$$

$$= 187$$

Were,

p = Prevalence of morbidity (musculoskeletal) in geriatric population,

q = 100 – p,

l = Allowable error

So, sample size taken for the study is 200

Sample size = 200

Sampling Method: Systematic Random Sampling.

There were 13 urban slum areas under Urban Health Training Centre. Total population in urban slum area under UHTC were 18700 and total houses is 4587. First house was a randomly selected no. less than sampling interval. After first house, next house was chosen as following:

k = Sampling interval

k = total no. of houses in urban slum area under UHTC / total no. of sample size

k = 4587 / 200 = 23

First house was randomly selected number 2 (less than sampling interval). After first house, second house was chosen as following: 2+(1x23) = 25th no. in that area. Then consecutively 2+(2x23) = 48th house, 2+(3x23) = 71th no. house and next houses geriatric person were interviewed till 2+(199x23) = 4579 no. house, to collect 200 sample size. From each house only one geriatric age group person was interviewed. If in any house more than one geriatric age group person is present than randomly anyone them was chosen for study. If there was no geriatric person present in the selected house than geriatric age group person from the next adjacent house was selected.

Inclusion Criteria: ≥60 years, both males and females willing to participate in the study.

Exclusion Criteria

1. Seriously ill patients (unable to communicate).

2. Geriatric population not willing to participate in the study.

Data collection & analysis: Before data collection approval from institutional ethics committee was taken. At the time of home visit, geriatric age group population (≥60 years) was informed about the survey and its purpose and importance of participating in the survey and written consent was taken from them. Data was collected in predesigned and pretested proforma. Result was calculated in Microsoft Excel software and by using chi-square and fisher exact test.

Results

In this study among 200 study subjects 194 (97%) were suffering from one or more morbidities. Among 200 study subjects 152 (76%) were suffering from hypertension, followed by musculoskeletal problem 131 (65.5%), vision impairment 83 (41.5%), social problem 54 (27%), diabetes mellitus 53 (26.5%), mental problem 49 (24.5%), respiratory problem 41 (20.5%), hearing impairment 26 (13%), gastrointestinal problem 20 (10%), CNS problem 20 (10%), anaemia 15 (7.5%), dental problem 12 (6%), skin problem 9 (4.5%), genitourinary disorder 8 (4%), breast cancer 5 (2.5%) & heart disease 4 (2%). Significant association found between age group and morbidity, between religion and morbidity, between type of family and morbidity and also between socio-economic status and morbidity (sex, marital status, education, occupation, financial dependence was not significant with morbidity).

Table 1: Sociodemographic factors of study subjects (N = 200)

Sociodemographic factors		Male	Female	Total (%)
Age Group (in years)	60-64	18	38	56 (28%)
	65-69	22	43	65 (32.5%)
	70-74	26	19	45 (22.5%)
	75-79	10	8	18 (9%)
	≥80	8	8	16 (8%)
Religion	Hindu	38	53	91 (45.5%)
	Muslim	28	41	69 (34.5%)
	Others	18	22	40 (20%)
Marital status	Never married	0	3	3 (1.5%)
	Married	72	52	124 (62%)
	Divorced	0	2	2 (1%)
	Widowed	12	59	71 (35.5%)
Education	Illiterate	10	61	71 (35.5%)
	Primary	42	30	72 (36%)
	Secondary	16	16	32 (16%)
	Higher secondary	10	4	14 (7%)
	Graduation	4	5	9 (4.5%)
	Post-graduation	2	0	2 (1%)
Occupation	Working at present	28	16	44 (22%)
	Not working at present	56	100	156 (78%)
Type of family	Nuclear	18	36	54 (27%)
	Joint	30	22	52 (26%)
	Three generation	36	58	94 (47%)
SES (Modified BG Prasad Classification)	Upper class	0	4	4 (2%)
	Upper middle class	12	8	20 (10%)
	Middle class	13	24	37 (18.5%)
	Lower middle class	28	33	61 (30.5%)
	Lower class	31	47	78 (39%)
Financial dependence	Independent	48	32	80 (40%)
	Dependent	36	84	120 (60%)

Table 1 shows, among 200 geriatric population 65 (32.5%) were in the age group of 65-69 years, 91 (45.5%) belonged to the Hindu religion, 71 (35.5%) were illiterate, 156 (78%) were not working at the time of study, 94 (47%) belonged to three generation family, 78 (39%)

belonged to lower SES and 120 (60%) were financially dependent on others.

Table 2: Morbidity profile wise distribution of study subjects (multiple responses)

Morbidity conditions	Male	Female	Total (N=200)
Hypertension	66	86	152 (76%)
Musculoskeletal problem	44	87	131 (65.5%)
Vision impairment	32	51	83 (41.5%)
Social problem: Neglected by family / society	28	26	54 (27%)
Diabetes mellitus	24	29	53 (26.5%)
Mental problem	20	29	49 (24.5%)
Respiratory problem	10	31	41 (20.5%)
Hearing impairment	20	6	26 (13%)
Gastrointestinal problem	14	6	20 (10%)
CNS problem	10	10	20 (10%)
Anaemia	2	13	15 (7.5%)
Dental problem	8	4	12 (6%)
Skin problem	2	7	9 (4.5%)
Genitourinary disorder	4	4	8 (4%)
No morbidity	2	4	6 (3%)
Breast cancer	0	5	5 (2.5%)
Heart disease	2	2	4 (2%)

Table 2 shows, among 200 study subjects only 6 (3%) subjects had no morbidity & 194 (97%) were suffering from one or more morbidities. Among 200 study subjects 152 (76%) were suffering from hypertension, followed by musculoskeletal problem 131 (65.5%), vision impairment 83 (41.5%), social problem 54 (27%), diabetes mellitus 53 (26.5%), mental problem 49 (24.5%), respiratory problem 41 (20.5%), hearing impairment 26 (13%), gastrointestinal problem 20 (10%), CNS problem 20 (10%), anaemia 15 (7.5%), dental problem 12 (6%), skin problem 9 (4.5%), genitourinary disorder 8 (4%), breast cancer 5 (2.5%) & heart disease 4 (2%).

Table 3: Association between sociodemographic factors and morbidity profile of study subjects (N = 200)

Sociodemographic factors	Morbidity		Statistical Test
	Present (%)	Absent (%)	
Age Group (years)			
60-64	50 (25)	6 (3)	Fisher exact test: 15.906 p = 0.003148* (df = 4)
65-69	65 (32.5)	0	
70-74	45 (22.5)	0	
75-79	18 (9)	0	
≥80	16 (8)	0	
Sex			
Male	82 (41)	2 (1)	Chi-square with yates correction: 0.0003 p = 0.987 (df = 2)
Female	112 (56)	4 (2)	
Religion			
Hindu	89 (44.5)	2 (1)	Fisher exact test: 9.071 p =0.010723* (df=2)
Muslim	69 (34.5)	0	
Others	36 (18)	4 (2)	
Marital status			
Never married	3 (1.5)	0	Fisher exact test: 0.185 p = 0.98 (df=3)
Married	120 (60)	4 (2)	
Divorced	2 (1)	0	
Widowed	69 (34.5)	2 (1)	
Education			
Illiterate	69 (34.5)	2 (1)	Fisher exact test: 1.955 p = 0.855 (df = 5)
Primary	70 (35)	2 (1)	
Secondary	30 (15)	2 (1)	
Higher secondary	14 (7)	0	
Graduation	9 (4.5)	0	
Post-graduation	2 (1)	0	
Occupation			

Working at present	42 (21)	2 (1)	Chi-square with yates' correction: 0.0324 p = 0.86 (df = 2)
Not working at present	152 (76)	4 (2)	
Type of family			
Nuclear	54 (27)	0	Fisher exact test: 6.551 p = 0.0378* (df = 2)
Joint	52 (26)	0	
Three generation	88 (44)	6 (3)	
SES (Modified BG Prasad Classification)			
Upper class	4 (2)	0	Fisher exact test: 9.675 p = 0.046* (df = 4)
Upper middle class	20 (10)	0	
Middle class	37 (18.5)	0	
Lower middle class	61 (30.5)	0	
Lower class	72 (36)	6 (3)	
Financial dependence			
Independent	78 (39)	2 (1)	Chi-square with yates' correction=0.0072 p = 0.933 (df = 2)
Dependent	116 (58)	4 (2)	

***Result is significant**

Table 3 shows, age group, religion, type of family and socioeconomic section was significantly associated with morbidities of the geriatric population.

Discussion

In our study 28% study subjects were in 60-64 years age group. Similar finding (27.2%) was present in Barua *et al*. study.[16] In our study 62% subjects were married & 1.5% were never married. Similar findings were there in Pathak *et al*. study, where 53.3% & 0.7% study subjects were married & never married respectively.[14] In this study 34.5% subjects were Muslim & in Barua *et al.* study 27.2% were muslim.[16] In this study 27% lives in nuclear family & in Barua *et al.* study 30% lives in nuclear family.[16] In our study 36% completed their primary school. Similar finding was there in Barua *et al.* study (primary school-36%).[16] In our study 22% were currently working. In Dabade *et al.*[10] study 30%& in Jadav *et al.*[8] study 26.5% were currently working. In our study 39% were belongs to lower socio-economic section and in Pathak *et al.* study[14] & in Dabade *et al.* study[10] 32% & 30.2% belongs to lower socio-economic section respectively.

In our study we found 76% study subjects were suffering from hypertension. In Dabade *et al*. study 53.2% were suffering from hypertension.[10] In this study 65.5% were having musculoskeletal problem and in Jadav *et al.* study 64.9% were having musculoskeletal problem.[8] In our study 41.5% had vision impairment and in Jadav *et al*. study 34.5% had vision problems.[8] In this study 27% had social problem & in Bardhan *et al.* study 21.53% had social problem.[1] In our study 26.5% had diabetes mellitus. Similarly, Barua *et al.* found 24% had diabetes mellitus in their study.[16] In our study 20.5% had respiratory problem. Similarly in Usha *et al.* study 19.7% had chronic morbid condition of respiratory system.[2] In our study 13% had hearing impairment & in Jadav *et al.* study 14% had hearing problems.[8] We found 10% had gastrointestinal problems in our study & in Soren *et al.* study 17.75% had Gastrointestinal tract disease.[12] In our study 10% had CNS problem. In Usha *et al.* study 6.7% had chronic morbid condition of neurological system.[2] In our study 6% had dental problem & in Soren *et al.* study 10.06% had dental disease.[12] In our study 4.5% had skin problem & in Vidyashree *et al*. study 2% had skin disorders. In our study 4% had genitourinary problem. In Dabade *et al.* study 4.1% had genitourinary problem.[10] In our study 2.5% had breast ca & in Soren *et al.* study 1.18% had

cancer.[12] In our study 2% had heart disease & in Soren *et al.* study 3.55% had heart disease.[12] In our study age group, family size and socio-economic status is significantly associated with morbidity. In George *et al.* study age group and socio-economic status is also significantly associated with morbidity.[9] Also in Dabade *et al.* study age group is significantly associated with morbidity.[10]

Conclusion

Majority of the geriatric population were suffering from hypertension and there was significant association between age group, religion, family size and socio-economic status with morbidity.

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