Original Research Article

A comparative study on morbidity profile among the geriatric population of urban and rural area of West Bengal

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Abstract

Background- According to the WHO Ageing & Health Factsheet, the proportion of the world's population over 60 years will nearly double from 12% to 22% between 2015 and 2020, the number of people aged 60 years and older will outnumber children younger than 5 years by 2020, 80% of older people will be living in low- and middle-income countries in 2050. With this background present study was conducted to compare on morbidity profile among the geriatric population of urban and rural area of West Bengal. **Methods –** Community based cross sectional study was conducted in rural field practice area and urban slum which is urban field practice area of Community Medicine department of a Medical College situated at Kolkata, West Bengal from January 2021 to March 2021. Total sample size is 412, are be divided equally in both urban and rural areas i.e. 206 complete samples from each area are interviewed by a pre-designed, pretested structured questionnaire. The collected data was compiled with the help of Microsoft excel & analyzed by SPSS version – 19, in terms of statistical methods like table, mean, standard deviation, chi square, z test, multiple logistic regression. **Results -** In urban area, 69.4% of geriatric population belonged to 60-69 years & 48% geriatric population belonged to 70-79 years of age groups whereas in rural area the findings were respectively 63.6 % & 30.6 %.43.7% of total geriatric populations are financially independent and out of 56.3% dependent populations, rural geriatric population showed marginally higher predominance (60.2%) over the urban (52.4%). It is revealed from this study that acid peptic disorder (53.6%) is the major G.I disorders, followed by constipation (44.2%) and dental caries (40.0%). We also found that 42.5% geriatric population are suffering depression. Urban geriatric populations were suffering (46.6%) a little more from depression than rural population (38.3%). **Conclusions**- The present study reveals high prevalence of morbidity among geriatric population. So, awareness among elderly people should be created for regular health check-ups for prevention and early detection of their health problems.

Key words: Morbidity profile, Geriatric population, Urban, Rural.

Introduction

Today, for the first time in history most people can expect to live into the 60s and beyond. In low-income and middle-income countries, this is largely the result of large reductions in mortality at younger ages, particularly during childhood and childbirth, and from infectious diseases. In high-income countries, continuing increases in life expectancy are now mainly due to declining mortality among those who are older.

According to the WHO Ageing & Health Factsheet, the proportion of the world's population over 60 years will nearly double from 12% to 22% between 2015 and 2020, the number of people aged 60 years and older will outnumber children younger than 5 years by 2020, 80% of older people will be living in low- and middle-income countries in 2050[1]. The pace of population ageing is much faster than in the past. All countries face major challenges to ensure that their health and social systems are ready to make the most of this demographic shift.When a person reaching to a particular chronological age (conventionally from 60 years onwards), gradually certain alteration of structural and functional activities occurs almost all the parts of the body, called degenerative changes and he/she becoming the victim of these several degenerative changes, resulting them vulnerable to multiple medical and psychological problems which in turn causes constraint to their economic, social, recreational aspect of life and become dependent on many situations. Advancing age is associated with increased vulnerability to chronic health problems. Identifying factors that predict oldest-old status is vital for developing effective clinical interventions and public health strategies. In clinical practice many decisions are not fully informed unless the patient´s prognosis is considered. The strongest and most consistent predictors of mortality in older patients include comorbidity and functional status.

According to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males. A report released by the United Nations Population Fund and HelpAge India suggests that the number of elderly persons is expected to grow to 173 million by 2026. Both the share and size of elderly population is increasing over time. From 5.6% in 1961 the proportion has increased to 8.6% in 20 11. For males it was marginally lower at 8.2%, while for females it was 9.0%. As regards rural and urban areas, 71% of elderly population resides in rural areas while 29 % is in urban areas. In rural areas, 66% of elderly men and 28% of elderly women were working, while in urban areas only 46% of elderly men and about 11% of elderly women were working. The percent of literates among elderly persons increased

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from 27% in 1991 to 44% in 2011.The literacy rates among elderly females (28%) is less than half of the literacy rate among elderly males (59%). Prevalence of heart diseases among elderly population was much higher in urban areas than in rural parts[2].

There are several important reasons for measuring comorbidity: to correct for confounding factors, to identify the modification of effects, to predict study outcomes or the natural history of the disease, and finally for statistical efficiency[3]. The terms comorbidity and multimorbidity have been used indistinctly and only in the last few years, a clear distinction between the two terms has been widely accepted[4,5]. Although no "golden standard" for measuring multimorbidity has been established so far, numerous instruments exist, but the issue over which comorbidity index is the best for research purposes is still unclear.

Few studies, regarding the morbidity profile of geriatric population of West Bengal have been conducted so far. In this juncture we need to assess the morbidity profile of geriatric population in urban and rural areas of West Bengal so as to compare them the nationally as well as internationally.

Material & Methods

This community based observational, descriptive & cross-sectional study was conducted in the rural field practice area and urban slum which is urban field practice area of Community Medicine department of a Medical College situated at Kolkata, West Bengal. After clearing the Institutional Ethics Committee, the study was done from January 2021 to March 2021 by a semi-structured pretested schedule. As per Indian standard a person aging 60 years and above are considered as 'senior citizen' or 'geriatric age group'[6]. In this study a person having 60 years and above are considered as geriatric population. Geriatric population (60 years & above) who are willing to participate, giving written consent & staying for at least one year in the study area were included in this study. Those who are absent or found block door, in his or her residence during the visit for data collection & those, who are admitted in the health care centre or seriously ill were excluded from this study.

Sample size was calculated by using the formula, n=4 x p x q /d x d. Where confidence level is 95%, p-prevalence of geriatric morbidity, q- 4 (1-p) and d- allowable error. For the present study, p- 52.2%, (take from an earlier reference study)[7] & after calculation, n- 366. Taking into account 10% as non-response rate, so the number of sample will be about 366+36.6 = 402.6, after approximation it becomes 403. Finally, it has decided to collect a total of 412 complete samples, from the study areas. Now, these total 412 samples are be divided equally in both urban and rural areas i.e. 206 complete samples from each area are to be collected for analysis and interpretation.

During house visit, after primary self -introduction and explanation regarding the purpose of this visit to all the family members, a written consent was taken from the respondent. Data of socio-demographic status like age, gender, religion, residence, mother tongue, marital status, living arrangement, type of family, education, occupation, per-capita income, type of house, etc. & morbidity profiles like osteoarthritis, visual Impairment, hearing impairment, hypertension, stroke, obesity, signs of thyroid hypo-function, bronchial asthma, obstructive pulmonary symptoms, Depression etc. was collected. Depression was detected using Geriatric Depression Scale (GDS). The collected data was compiled with the help of Microsoft excel & analyzed by SPSS version – 19, in terms of statistical methods like table, mean, standard deviation, chi square, z test, multiple logistic regression.

Result

In urban area, 69.4% of geriatric population belonged to 60-69 years & 48% geriatric population belonged to 70-79 years of age groups whereas in rural area the findings were respectively 63.6 % & 30.6 %. The male geriatric population in urban & rural area are 54.9% & 50% respectively. This geriatric population 70.4 % in urban area & 81.6% in rural area live in joint family & 18.4 % were widow or widower, 1.9% either divorced or separated in urban area. Widowed/ widower was much more in rural area (37.9%) than urban (18.4%). Both in urban and rural areas, the majority of study population living with their spouse's (68.0%) followed by without spouse's (28.2%). Although the percentage of living with spouses were higher (77.2%) in urban areas, while living without spouses were higher (37.9%) among rural areas. In this study we found that overall 41.8% of present study population having overcrowding in their residence. Overcrowding was much higher (60%) in urban areas whereas in rural areas it was 24.0%. 43.7% of total geriatric populations are financially independent and out of 56.3% dependent populations, rural geriatric population showed marginally higher predominance (60.2%) over the urban (52.4%).

Table 1: Socio-demographic profile of study participants. n=412, (for urban, n=206 & rural, n=206)

Variable	Urban No. (percentage)	Rural No. (percentage)
Age (in years)		
• 60-69	143 (69.4)	131 (63.6)
• 70-79	48 (23.3)	63 (30.6)
• More than 80	15 (7.3)	12 (5.8)
Gender		
• Male	113 (54.9)	103 (50.0)
• Female	93 (45.1)	103 (50.0)
Type of family		
• Nuclear	61 (29.6)	38 (18.4)
• Joint	145 (70.4)	168 (81.6)
Marital status		
• Married	159 (77.2)	121 (58.7)
• Widow/widower	38 (18.4)	78 (37.9)
• Divorced/separated	06 (2.9)	02 (1.0)
• Unmarried	03 (1.5)	05 (2.4)
Living arrangement		
• Alone	09 (4.4)	07 (3.4)
• With spouse and with/ without children	159 (77.2)	121 (58.7)
Without spouse and with/ without children	38 (18.4)	78 (37.9)
Over-crowing		
• Present	122 (59.2)	50 (24.0)
• Absent	84 (40.8)	156 (76.0)

Working status		
• Working	98 (47.6)	82 (39.8)
• Non-working	108 (52.4)	124 (60.2)
Financial dependent		
• Dependent	108 (52.4)	124 (60.2)
• Independent	98 (47.6)	82 (39.8)

It is revealed from this study that acid peptic disorder (53.6%) is the major G.I disorders, followed by constipation (44.2%) and dental caries (40.0%). Loose motion and piles occupies 9.5% in each. 73.5% geriatric population were suffering from anaemia of which urban population were suffering more (77.7%). There was no significant association between gender and anaemia. 51.0% of study populations were suffering from Visual impairment of which 20.4% from cataract and 30.6% from refractive error problems. Both the cases sufferings were more in urban population. Concerning respiratory diseases of geriatric population, bronchial asthma occupies highest sheer (20.1%) followed by chronic bronchitis (16.5%), upper respiratory tract infection (11.6%) and Pneumonia (3.4%). In all the cases, urban geriatric population suffered a little more than the rural. 35.7% of study populations are suffering from hypertension and 13.8% are from ischemic heart diseases/coronary artery diseases. All were found much more in urban populations (45.6% & 20.4% respectively) than rural populations (25.7% & 7.3% respectively). 9.0% and 1.9% geriatric population are suffering from tremor &paralysis respectively, of which urban age groups are suffering marginally higher (10.2% & 2.4% respectively). Osteoarthritis was the commonest musculoskeletal morbidities (51.2%) among geriatric population, followed by gout (14.6%), myalgia (11.7%) and trauma/fracture (4.1%). In all the cases urban geriatric population were suffering more. 25.5% of study populations were suffering from diabetes mellitus (Type-II) and 6.8% from thyroid disorder. Both the cases, urban geriatric population were suffering more than the rural geriatric population (36.4% & 8.3% respectively). The bladder and bowel incontinences were 8.5% and 4.4% respectively. U.T. infection's is 4.4%. Genital prolapsed among females and prostate problems among males were 4.0% and 29.2% respectively. Prevalence of carcinoma of prostate was 0.5%.

Table 2: Morbidity profile of study participants. n=412, (for urban, n=206 & rural, n=206)

Variable	Urban No. (percentage)	Rural No. (percentage)
Body mass index (Kg/M^2)		
• Underweight (< 18)	17 (8.3)	11 (5.3)
• Normal (18-24.99)	126 (61.2)	158 (76.7)
• Overweight (25-29.9)	52 (25.2)	35 (17.0)
• Obese (≥ 30)	11 (5.3)	02 (1.0)
Gastro-Intestinal disorder		
• Dental Carries	72 (34.9)	93 (45.1)
• Acid Peptic Disorder	111 (53.9)	110 (53.4)
• Loose motion	15 (7.3)	24 (11.7)
• Constipation	96 (46.6)	86 (41.7)
• Piles	21 (10.2)	39 (9.5)
Anemia		
• Present	160 (77.7)	143 (69.4)
• Absent	46 (22.3)	63 (30.6)
Visual impairment		
• Cataract	60 (29.12)	24 (11.7)
• Refractive error	70 (34.0)	56 (27.2)
Respiratory problem		
• URTI	27 (13.1)	21 (10.2)
• Pneumonia	08 (3.9)	06 (2.9)
• Bronchial asthma	46 (22.3)	37 (18.0)
• Chronic bronchitis	35 (17.0)	33 (16.0)
• COPD	17 (8.3)	13 (6.3)
• Ca Lung	00	01 (0.5)
Cardiovascular Disease(s)		
• Hypertension	94 (45.6)	53 (25.7)
• IHD/CAD	42 (20.4)	15 (7.3)
Neurological problems		
• Tremor	21 (10.2)	16 (7.8)
• Paralysis	05 (2.4)	03 (1.4)
Musculoskeletal problems		
• Osteoarthritis	131 (63.6)	80 (38.8)
• Gout	37 (18.0)	23 (11.2)
• Myalgia	27 (13.1)	21 (10.2)
• Trauma/Fracture	09 (4.4)	08 (3.9)
Endocrine disorder		
• Diabetes	75 (36.4)	30 (14.6)
• Thyroid disorder	17 (8.3)	11 (5.3)
Depression status		

• No depression • Depression	110 (53.4) 96 (46.6)	127 (61.7) 79 (38.3)

Table: 3: Distribution of geriatric population according to depression status and gender N= 412 (for male n=216 & for female, n=196)

Depression Status	Gender		Total
	Male, NO. (%)	Female No. (%)	
No depression	145 (67.1)	92 (46.9)	237 (57.5)
Depression	71 (32.9)	104 (53.1)	175 (42.5)
Total	216 (100)	196 (100)	412 (100)

X^2= 17.145, d.f-1, p-value – 0.000

In this study we found that 42.5% geriatric population are suffering depression. Urban geriatric populations were suffering (46.6%) a little more from depression than rural population (38.3%). 42.5% geriatric population were suffering from depression. It was observed that female geriatric populations (53.1%) were suffering more than male geriatric populations (32.9%). This difference was showing significant association (p<.000) between gender and depression. Majority of geriatric population (73.1%) attending Govt. hospitals of which rural population contributing major share. 50.0% of urban study population attending to private practitioners when compares with rural population, it was only 19.9%. The reverse was true in case of Quack practitioners where urban and rural attendance is 13.1% and 35.9% effectively. Self-medication was higher in urban study population than rural. The main reasons, responsible for the avoidance of Govt. health facilities are, long waiting time (20.9%) followed by far away (10.4%), medicines were not available (10.2%). Unsatisfactory behaviour of health care provider and unsuitable timings comprises 10.0% and 9.0% respectively. 6.1% of cases no one is present to accompany the geriatric population, to the Govt. health facilities, was the cause.72.6% of total study populations were fully independent, while 19.9% of geriatric populations are partially dependent

Discussion

In the present study maximum number of elderlies belonged to age group 60–70 years (69.4%). Similar study was done by Saxena V, et al. (2012)[8] in Dehradun showing that 74.6% elderlies belonged to 60–70 years age group. In the present study majority of elderlies were unemployed and similar results were shown by Soni S, et al. (2016)[9] at Bihar and Kapil U, et al. (2018)[10] at Nainital, Uttarakhand. Also, in our study majority i.e. 56.3.0% of elderlies were dependant in rural areas and 53.4% in urban areas. Almost similar results were observed in study done by Soni S, et al. (2016)[9] at Bihar where dependency was 67.2%. In the present study almost 80% elderly was suffering from musculoskeletal disorder , 73,5% elderly from gastrointestinal disorder, 51% from eye problems , 59% from respiratory disorder ,35.7% from hypertension, 13.8% from heart disease, 10.9% from neurological problems, 29.5 % from diabetes mellitus, 6.8% from thyroid disorders, 41.7% from genitourinary problems Similar findings were Results found with that of study done by Verma V, et al. (2016)[11] at Allahabad and Chauhan P, et al.(2013)[12] at Nellore. In our study 47.5% elderly were suffering from depression which was similar to other studies done in India.

Conclusion

The present study reveals high prevalence of morbidity among geriatric population. So, awareness among elderly people should be created for regular health check-ups for prevention and early detection of their health problems. Further Geriatric clinic should be made functional upto sub-district and block level for implementation of 'The National Programme for Health Care of the Elderly' (NPHCE).

Conflict of Interest: Nil Source of support: Nil

Reference

1. Ageing and health [Internet]. [cited 2021 Apr 10]. Available from: https://www.who.int/news-room/fact-sheets/detail/ageing-and-health
2. vikaspedia Domains [Internet]. [cited 2021 Apr 10]. Available from: https://vikaspedia.in/social-welfare/senior-citizens-welfare/senior-citizens-status-in-india
3. Groot V de, Beckerman H, Lankhorst GJ, Bouter LM. How to measure comorbidity: a critical review of available methods. Journal of Clinical Epidemiology. 2003 Mar 1;56(3):221–9.
4. Comorbidity or multimorbidity: what's in a name? A review of literature: European Journal of General Practice: Vol 2, No 2 [Internet]. [cited 2021 Apr 10]. Available from: https://www.tandfonline.com/doi/abs/10.3109/13814789609162146
5. Fortin M, Stewart M, Poitras M-E, Almirall J, Maddocks H. A Systematic Review of Prevalence Studies on Multimorbidity: Toward a More Uniform Methodology. Ann Fam Med. 2012 Mar;10(2):142–51.
6. National Policy for Older Persons Year 1999.pdf [Internet]. [cited 2021 Apr 10]. Available from: http://socialjustice.nic.in/writereaddata/UploadFile/National%20Policy%20for%20Older%20Persons%20Year%201999.pdf
7. Srivastava MR, Sachan B, Gupta P, Bhardwaj P, Srivastava JP, Bisht A, et al. Morbidity Status and Its Social Determinants among Elderly Population of Lucknow District, India. :7.
8. Saxena V, Kandpal SD, Goel D, Bansal S. HEALTH STATUS OF ELDERLY A COMMUNITY BASED STUDY. Indian Journal of Community Health. 2012 Dec 31;24(4):269–74.
9. Soni S, Kumar M, Shukla M. A Study on Morbidity Profile Among Elderly in A Rural Population of Katihar, Bihar. Indian Journal of Research. 2016 Jun 7;5:101–3.
10. Kapil U, Khandelwal R, Ramakrishnan L, Khenduja P, Gupta A, Pandey RM, et al. Prevalence of hypertension, diabetes, and associated risk factors among geriatric population living in a high-altitude region of rural Uttarakhand, India. Journal of Family Medicine and Primary Care. 2018 Jan 11;7(6):1527.
11. Verma V, Prakash S, Parveen K, Shaikh S, Mishra N. A comparative study of morbidity pattern in elderly of rural and urban areas of Allahabad district, Uttar Pradesh, India. International Journal Of Community Medicine And Public Health. 2017 Feb 3;3(5):1152–6.
12. Chauhan P, Chandrashekar V. A study on morbidity pattern among the geriatric people of Venkatachalem village, Nellore District, AP. MRIMS Journal of Health Sciences. 2013 Jan 4;1(2):48.