

Assessment of Morbidity Patterns among the Elderly Population in an Urban Slum of Gaya: A Cross-Sectional StudyDanish Imtiaz¹, Avinash Ranjan Vidyarthi², Shalini Sheoraj³, Anas Ahmad Khan⁴¹Assistant Professor & HOD, Department of Community Medicine, A.N.M.M.C., Gaya, Bihar²Tutor, Department of Community Medicine, A.N.M.M.C., Gaya, Bihar³Department of Community Medicine, A.N.M.M.C., Gaya⁴Professor, Department of Community Medicine, United Institute of Medical Science, Prayagraj, Uttar Pradesh

Received: 21-10-2023 / Revised: 13-11-2023 / Accepted: 08-12-2023

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Conflict of interest: Nil

Abstract:**Background:** India's senior population is getting older every day. India has an elderly population of 8.6%. Elderly persons have different health demands than normal people. The goal of the study was to examine the morbidity profile of older people in order to provide baseline data and aid in the design of healthcare services.**Methods:** In Gaya, Bihar, a cross-sectional survey was led among elderly residents of the areas. The study comprised participants who were ≥ 60 yrs of age, and 120 was the estimated sample size. A pre-tested, pre-designed, and semi-structured survey was utilized to gather data on the socio-demographic traits and morbidity status of research participants.**Results:** In this study, a total of 120 individuals participated in which 62 males (51.6%) and 57 females (47.5%) with an average age of 67.6 years (± 6.8) were examined. Most prevalent diseases were related were ocular diseases (70%). Cardiovascular diseases (48.3%) Musculoskeletal diseases (39%), Mental illness (23.3%), and Ear diseases (22.5%).**Conclusion:** The current study's findings indicate that a very high rate of morbidities were prevalent in the studied population. Consequently, it is imperative to enhance the current primary, secondary, and tertiary geriatric health care services.**Recommendation:** The significant frequency of morbidities among older Indians is brought to light by this study, underscoring the pressing need to increase access to geriatric healthcare services. It calls for proactive healthcare planning and policy development to address the specific health needs of seniors, particularly in the areas of musculoskeletal, neurological, digestive, and ocular health.**Keywords:** Elderly, Morbidity, Geriatric, Urban, Rural.

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Introduction

Aging is a biological fact that is uncontrollable by humans. Senior citizens, as defined by the UN and the Indian government, are individuals 60 years of age and older [1]. Numerous physiological and biological changes brought on by aging result in difficulties with the body, mind, emotions, and social interactions, as well as morbidities, impairments, and even mortality [2]. India is predicted to have the largest senior population in the world by 2025, which would increase the burden of chronic illnesses and impairments [1]. However, a shortage of facilities and qualified staff means that specialist geriatric treatment in India is still a long way off.

The unique healthcare requirements of the elderly highlight the increasing need for first-rate geriatric healthcare services. These services are to be

centered on the "felt needs" of the senior population and ought to address the most common health conditions in the community [3].

Aging is a natural biological process that affects everyone, and older people are particularly sensitive and at risk for health problems. The percentage of people in the globe who are 60 years of age or older is expected to double by 2050. This percentage has been rising gradually [4]. Hippocrates and other ancient philosophers stressed the importance of nutrition and exercise in leading long, healthy lives. Assessing the morbidity profile of the elderly has consequences for the delivery of healthcare and related expenses. Primary healthcare systems should prioritize geriatric healthcare because over 75% of the older population lives in rural regions [5].

The study's objective is to investigate the morbidity profile of Gaya, Bihar, India's elderly population.

Methodology

Study design: A cross-sectional study

Study setting: Over a "period of one year, Nov 2021-Nov 2022," the study was led among elderly residents of Gaya, Bihar, India. The study comprised participants who were ≥ 60 years of age, and a sample size of 120 was determined.

Study size: With a prevalence of morbidity in the senior population of 64.8%, a 95% confidence interval, an absolute precision of 10%, and a design effect of 2, the study size was computed to be 122. The total sample size, assuming a 10% non-response rate, was 120. So total respondents were 120.

Participants: A total of 120 individuals participated in the study.

Inclusion criteria: Individuals aged 60 years and older. The study included geriatric individuals who provided informed consent to partake in the research.

Exclusion criteria: The geriatric population exhibiting antagonistic conduct and withholding

consent for study inclusion. The geriatric population who were not found in their place of residence during the time of the examination.

Study method: A survey was conducted house to house. A semi-structured, pretested, and predesigned questionnaire was created to gather information on the sociodemographic characteristics of research participants and their medical history. The team had it tested beforehand. A thorough general, physical, and methodical examination followed afterwards.

Statistical analysis: The data were entered into Excel, and the analysis was done utilizing SPSS (Version 23). The continuous variable's mean and standard deviation were calculated. The means were compared using the t-test. P-values <0.05 were considered statistically relevant.

Ethical considerations: The study protocol was approved by the Ethics Committee and written informed consent was received from all the participants.

Results

Table 1: Study group demographics

Parameters	Frequency	Percent
Male	62	51.6
Females	57	47.5
Mean age	67.6 \pm 6.8	-
Illiterates	83	69.1
Just literate	11	9.1
Educated up to primary level	8	6.6
Secondary school and above	17	14.1

The demographic features of the study group are presented in Table 1. The cohort comprised of 62 male individuals, accounting for 51.6% of the total, and 57 female individuals, representing 47.5% of the total. The study population had a mean age of 67.6 years, accompanied by a standard deviation of 6.8. Within the cohort, a total of 83 individuals (69.1%)

exhibited illiteracy, while 11 individuals (9.1%) possessed rudimentary literacy skills. Additionally, 8 participants (6.6%) successfully completed primary education, while 17 individuals (14.1%) attained educational achievements at the secondary school level or beyond.

Table 2: Chronic morbid diseases and their distribution according to afflicted organ systems

Disease	Male		Female		Total		P value
	No.	%	No.	%	No.	%	
Ocular	40	33	44	36.6	84	70	<0.01
Cardiovascular	28	23	30	25	58	48.3	>0.05
Musculoskeletal	17	14	30	25	47	39	<0.001
Mental illness	9	7.5	19	15.8	28	23.3	<0.001
Gastrointestinal	15	12.5	13	10.8	28	23.3	>0.05
Ear	11	9.1	16	13.3	27	22.5	<0.05
Respiratory	9	7.5	6	5	15	12.5	>0.05
Genitourinary	4	3.3	2	1.6	6	5	>0.05
Female reproductive tract	-	-	1	0.83	1	0.83	-
Neurological	3	2.5	1	0.83	4	3.3	>0.05
Diabetes	3	2.5	1	0.83	4	3.3	>0.05

Skin	2	1.6	3	2.5	5	4.1	>0.05
Anemia	9	7.5	12	10	21	17.5	>0.05
Other health problems	5	4.1	6	5	11	9.1	>0.05

The study examined the prevalence of chronic morbid diseases among elderly participants, stratified by gender as shown in table 2. The findings revealed significant disparities in the prevalence of certain diseases between males and females. Ocular diseases were significantly more prevalent in females (36.6%) compared to males (33%), with an overall prevalence of 70%. In contrast, cardiovascular diseases showed no significant gender difference, affecting 25% of females and 23% of males, with an overall prevalence of 48.3%.

Musculoskeletal diseases exhibited a substantial gender gap, affecting 25% of females and 14% of males, with an overall prevalence of 39%. Mental illness also displayed a significant gender difference, impacting 15.8% of females compared to 7.5% of males, contributing to an overall prevalence of 23.3%. Ear diseases were significantly more prevalent in females (13.3%) than in males (9.1%), with an overall prevalence of 22.5%.

Discussion

The average age of the majority of the elderly individuals in this study was 67.6 years (SD \pm 6.8). Saxena V. *et al.* (2012) [6] showed results in Dehradun, where 74.6% of the old population was in the 60 to 70-year age range.

The study's 51.6% male and 47.5% female participants matched the findings of Gupta A, *et al.* (2016) [7] in Ludhiana. In terms of education, the results showed that 83 people (69.1%) were illiterate, 11 people (9.1%) had basic literacy, 8 people (6.6%) had finished elementary school, and 17 people (14.1%) had completed secondary school or higher. These results were in line with the research conducted in Tamil Nadu by Gladius J H *et al.* (2016) [8].

The results of Polisetty S. *et al.* (2017) [9] in Visakhapatnam, where they recorded 99.6% morbidity among senior adults, are similar to those of the 120 elderly participants, who had 82.9% chronic morbidities. Piramanayagam A. *et al.* (2013) [10] in Tamil Nadu observed a little lower prevalence (83.9%). According to the distribution of chronic morbid disorders by impacted health systems, ocular diseases had an overall prevalence of 70% and were substantially more common in females (36.6%) than in males (33%). The prevalence of musculoskeletal disorders was 39% overall, with a significant gender disparity of 25% affecting girls and 14% affecting males. Notably, there were no appreciable gender differences in respiratory, genitourinary, female reproductive system, neurological, diabetic, skin, anemia, or other

health issues. These results underline the necessity of gender-specific healthcare interventions, especially when it comes to treating musculoskeletal, mental, and visual health issues in the senior population. All things considered, this study offers insightful information about the prevalence of chronic morbid illnesses in the elderly, highlighting the significance of customized healthcare strategies for this population.

The musculoskeletal system (68.5%) was the most frequently involved system, according to Verma V. *et al.* (2016) [11] in Allahabad; similarly, Chauhan P. *et al.* (2013) [12] in Nellore reported that the musculoskeletal system (69.7%) was the most common system along with cardiovascular (38.3%), digestive (16.2%), respiratory (26.9%), psychological (12.8%), urogenital (5.7%), and neurological (6.2%) problems. Similar frequency of cardiovascular disorders (31.70%) was also revealed in a study conducted in Bhubaneswar by Mullick T H, *et al.* (2018) [13].

Conclusion

The study's conclusions highlight the necessity of improving and reassessing geriatric healthcare services across the board. The healthcare systems can better handle the complex health issues posed by chronic morbidities and provide an enhanced quality of life for the aged population by investing in comprehensive, accessible, and specialized care. To address the healthcare demands of an aging population and encourage healthy aging for all, a proactive strategy is essential.

Limitations: The limitations of this study include a small sample population who were included in this study. The findings of this study cannot be generalized for a larger sample population. Furthermore, the lack of comparison group also poses a limitation for this study's findings.

Recommendations: In order to better meet the unique health needs of this aging population in India, geriatric healthcare facilities, including primary, secondary, and tertiary care, urgently need to be strengthened and expanded given the high prevalence of morbidities among the elderly in this study. The findings underscore the importance of proactive healthcare planning and policy development to effectively manage the diverse health

challenges faced by older adults in India. Policymakers and healthcare providers should use this baseline data to tailor healthcare services and interventions that target the musculoskeletal, neurological, digestive, and ocular health issues

most commonly affecting the elderly, ensuring comprehensive and specialized care for this demographic.

Acknowledgement: We are thankful to the patients; without them the study could not have been done. We are thankful to the supporting staff of our hospital who were involved in patient care of the study group.

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