ORIGINAL ARTICLE

A Comparative Study in Morbidity Profile and Treatment Seeking Behaviour in Kanpur, Uttar Pradesh

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ABSTRACT

Background: Morbidity in the ageing population is progressively increasing due to longer life expectancy, accumulation of cellular damage, loss of adaptive response and rising susceptibility to communicable and non-communicable diseases, especially in urban settings. treatment-seeking behaviour in the elderly is influenced by various factors such as age, financial status, comorbidities, accessibility, and attitudes of healthcare providers, with many older adults showing reluctance to seek medical care. Objectives: To assess the association between morbidity and biosocial profile. To assess the relationship among treatment seeking behaviour and sociodemographic characteristic. **Methods**: A total of 600 participants were surveyed using multistage random sampling. **Result**: The study revealed a high prevalence of morbidities, notably cataract (55.3%) and hypertension (42.0%), increasing morbidity significantly with age and lower socioeconomic status. Only 19.5% participants are medically insured. Treatment was sought by 72.7% of participants and higher in female as compare to male participants, with decreasing trends in older age groups. **Conclusion**: The findings highlight significant disparities based on age, gender, and socioeconomic factors, improved geriatric healthcare, expanded insurance coverage, and enhanced awareness of government health care schemes.

KEYWORDS

Morbidity; Treatment Seeking Behaviourl; Non Communicable; Communicableelderly; Elderlyawarness

INTRODUCTION

Introduction: Morbidity in Aged population is progressive, generalized, loss of adaptive response to stress and growing risk of age-related diseases. (1) Morbidity in population gradually increasing due to increasing life expectancy. With gaining physiological function of individual decrease and resulting accumulation of molecular and cellular damage and increase risk of disease and leads to death. (2) Urbanisation leads to adverse health outcomes It also leads to increased susceptibility of suffering from both communicable and non-communicable diseases. (3) Globally, approx. billion people reside in overcrowded and mortal situations in urban slums and unhygienic settlements. (4) process of health transition has accelerated in India, and consequently. India has to confront rapid ageing of population. Old age is associated with deterioration of health and increase in morbidity. (5) Age, sex, education, health status, associated comorbidities, financial situation, distance to the health facility, attitude of health professionals toward the aged, contentment of the elderly in a health facility, and other factors all influence health-seeking behaviour. (6) Health-seeking behaviour refers to those activities undertaken by individuals in response to perceived ill health. Generally, elderly patients are more reluctant to seek health care for their health conditions (7,8)

Aims and objective:

1. To assess the association between morbidity and biosocial profile.

2. To assess the relationship among treatment seeking behaviour and sociodemographic characteristic.

MATERIAL & METHODS

Materials and Methods: The present study was a cross-sectional survey conducted among the geriatric population (aged 60 years and above) residing in both rural and urban areas of Kanpur district. The prevalence of morbidity in the elderly was taken as 15% as per study results obtained from study by Kumar V et al Study on morbidity pattern and health-seeking behaviour in the rural area of District Barabanki, India (9). Int J Med sce. & Public health 2020;5: -223

The minimum required sample size for the study was calculated using the standard formula:

Minimum Sample Size = $\frac{4pq}{d2}$ where P=prevalence, q = (100-p), d = margin of error which has been taken as 20 % relative to prevalence= 566

To ensure adequate power and account for potential non-response, a total of 600 participants were included in the study. Of these, 400 participants were selected from the urban areas and 200 participants from the rural areas of Kanpur district.

As per the Census data, approximately two-thirds of the population of Kanpur (3,015,645 individuals) reside in urban areas, while one-third (1,565,623 individuals) reside in rural areas. To ensure that the sample was a true representative of the population, the Population Proportion to Size (PPS) sampling technique was used to allocate the sample size proportionally between urban and rural areas. This approach improves the representativeness and generalizability of the findings to the overall elderly population of the district.

Methodology:

Selection of villages in rural regions and mohallas in urban areas was taken using multistage random sampling technique and door-to-door surveys to minimize selection bias. Two rural blocks, Kalyanpur and Shivrajpur were randomly selected from the list of 10 rural blocks via lottery methods and further 5 villages were randomly selected from each block. A door-to-door survey was continued till the required sample size of 200 was obtained. The total of 20 participants were recruited from each village of both the blocks by systematic random sampling. After applying simple random sampling, out of 120 urban wards, four wards (Arya Nagar, Vijay Nagar, Kaka Dev, Navabganj) were selected out of which five Mohallas via lottery methods were selected from each ward for selecting the required ample size for urban (400). After conducting a door-to-door survey a total of 20 participants were included from each mohalla in all the four wards by systematic random sampling. Thus, a total of 200 participants from rural and 400 participants were included in the study

Criteria of Inclusion

- Study subjects aged 60 years and above.
- Study subjects residing in Kanpur for at least 6 months.

Criteria of Exclusion

- Seriously ill study subjects not included in study.

Data Collection Tool

A semi-structured questionnaire was used to collect data on the participants' demographic details and health-seeking behaviour. The demographic information included age, sex, religion, educational status, socioeconomic status, marital status, type of family, smoking habits, tobacco chewing, and alcohol consumption. Health-seeking behaviour was assessed in terms of whether treatment was sought during illness, the type of treatment used, the type of healthcare facility accessed, the presence of any health insurance coverage, and reasons for not seeking treatment,

Ethical Clearance:

Ethical approval for the study was obtained from the Institutional Ethics Committee of G.S.V.M. Medical College, Kanpur (Ref. No: EC/296/Dec/2021, dated 17/12/2021). Informed written consent was obtained from all study participants prior to data collection.

Statistical Analysis: The collected data were entered into Microsoft Excel and subsequently analyzed using IBM SPSS Statistics software, version 24 (IBM Corp., Chicago, USA). Categorical variables were summarized using percentages, and associations between variables were assessed using the Chi-square test. A p-value of less than 0.05 was considered statistically significant.

RESULTS

As seen from the table -1 it is inferred that the proportion of the elderly with morbidities in the age group 60-65 yrs. (73.5 %) was lower than the proportion of morbidities in the higher age groups. There was statistically significant difference found on morbidities in different age groups($p<0.05$).

Majority of the elderly (55.3%) irrespective of sex were suffering from cataracts followed by Dental problems 37.2% and least 2.2% with ischemic heart disease. The disease which were predominant in elderly female were cataracts (72.4%), Anemia (56.1%), Hypertension (53.6%), and musculoskeletal (24.7%). The disease which were predominant in elderly males were dental problems

(40.3%), chronic lung disease (37.3%), Senile deafness (24.3%) diabetes mellitus (9.3%) ischemic heart disease (2.3%).

Majority of study subjects (80.5%) were not medically insured and only 19.5% study subjects were medically insured, whereas 4.5% of study subjects without morbidities were medically insured and 15% study subjects with morbidities were medically insured. The difference in the prevalence of morbidities amongst study subjects with health insurance and without health insurance was not statistically significant (p>0.05)

Elderly of higher socioeconomic class like Class I had a lower proportion of morbidities 65.5% as compared to those of lower socioeconomic class like in class II, Class III, Class IV, and class IV showed 82.0%, 85.6%, 88.9% and 80.0% respectively. A statically significant difference of morbidities was found in different socioeconomic classes (p<0.05)

Treatment had been taken by 72.7% of study subjects. 78.8 % of females had sought treatment as compared to 67.1% males.

Treatment had not been taken by 27.6% of study subjects. 21.1% of females had not sought treatment as compared to 32.4% male.

From the above table, it was inferred that the 60-65 years and 60-70 years age groups had sought treatment for more than >85 years age groups subjects. Treatment seeking among elderly decreases with increasing age.

The difference in treatment-seeking amongst elderly by age was found to be statistically significant (p<0.05).

From the above table, it was inferred that out of 472 subjects with morbidities, 128 are illiterate and from them, only 69% Were taking treatment which was very less as compared to other educational status. In other educational status groups, an average of 73-76% of study subjects was taking treatment. There is not statistically significant difference was found between treatment-seeking and education status in study subjects(p>0.05)

Majority of study subjects (64.0%) did not have any health insurance followed by 16.7% had family floater health insurance followed by 8.5% had critical illness insurance and the least number of study subjects 6.8% and 4.0% had individual health insurance and senior citizen health insurance respectively.

Majority of the study subjects (73.0%) had no pension pension scheme followed by 19.0% who had old pension schemes and least (8.0%) of study subjects had traditional pension schemes. No subjects had enrolled for NPS.

Majority of study subjects (41.5%) were not registered on any government scheme followed by 41.5% study subjects registered on Pradhan Mantri Jan Arogya Yojana, followed by 6.8% were registered on NPHCE and least (2.5%) were registered in Registered in Rashtriya Vayoshhri Yojana.

Table 1. Association of various morbidities and different age group.

Age group (in years)	Morbidity		Total
	Present	Absent	
60-65	233(73.8)	83(26.2)	316
66-70	121(78.5)	33(21.5)	154
71-75	52(88.1)	7(11.9)	59
76-80	41(91.1)	4(8.9)	45
>80	25(96.2)	1(3.8)	26
$\chi2 = 16.62$ p<0.05			

Table 2. Prevalence of various morbidity among study subjects

Morbidities	Number	Percentage
Musculoskeletal	119	19.8
Hypertension	252	42.0
Cataract	332	55.3
Dental Problem	223	37.2
Ischemic heart disease (IHD)	13	2.2
Chronic lung disease	180	30.0
Diabetes Mellitus	50	8.3
Senile Defence	136	22.7
Acid Peptic Disease	109	18.2
Anemia	197	32.8
Skin Diseases	24	4.0

Table 3. Association of health insurance with morbidities in study subjects

Morbidities	Health insurance	
	Presents No. (%)	Absent No. (%)
Present	90(15.0)	382(63.6)
Absent	27(4.5)	101(16.8)
Total	117 (19.5)	483 (80.5)
$\chi2 = 0.26$ p<0.05		

Table 4. Association of Socioeconomic Class with morbidities in study subjects

Socioeconomic Class	Morbidity		Total
	Present	Absent	
Class I	116	61	177
Class II	169	37	206
Class III	119	20	139
Class IV	56	7	63
Class V	12	3	15
Total	472	128	600
$\chi2 = 13.61$ p<0.05			

Table 5. Treatment availed for morbidities according to sex

Treatment availed	Sex		Total
	Male No. (%)	Female No. (%)	
Yes	175(67.1)	168(78.8)	343
No	84(32.4)	45(21.1)	129
Total	259	213	472

Table 6. Association of treatment availed according to age

Age groups (in years)	Treatment availed		Total
	Yes	No	
60-65	181(77.7)	52(22.3)	233
66-70	92(76.0)	29(24.0)	121
71-75	34(65.4)	18(34.6)	52
76-80	24(58.5)	17(41.5)	41
>80	12(48.0)	13(52)	25
Total	343(72.7)	129(27.3)	472
$\chi2 = 16.81$ $p<0.05$			

Table 7. Association of treatment availed for morbidities according to educational status

Education status	Treatment availed		Total
	Yes	No	
Illiterate	89(69.5)	39(30.5)	128
Middle	51(75.0)	17(25.0)	68
High School	87(71.9)	34(28.1)	121
Intermediate	41(75.9)	13(24.1)	54
Graduate & Postgraduate	22(75.0)	7(25.0)	28
Total	343(72.6)	129(27.3)	472
$\chi2 = 1.32$ $p > 0.05$			

Table 8. Distribution of study subjects according to health insurance coverage

Type of health insurance coverage	Number	Percentage
Individual Health insurance	41	6.8
Family floater Health insurance	100	16.7
Critical illness insurance	51	8.8
Senior citizen health insurance plane	24	4.0
No health insurance	384	64.0

Table 9. Distribution of study subjects according to type of pension scheme

Type of pension scheme	Number	Percentage
New Pension Scheme	0	0.0
Old Pension Scheme	114	19.0
Traditional Pension Plan	48	8.0
No Pension Scheme	438	73.0
Total	600	100

Table 10. Distribution of study subjects as beneficiaries of any government health scheme

Beneficiary of government health scheme	Number	Percentage
Pradhan Mantri Jan Arogya Yojana	246	41.0
NPHCE	41	6.8
Varistha Mediclaim Policy	49	8.2
Rastriya Vayoshri Yojana	15	2.5
No Government scheme	149	41.5

DISCUSSION

From our study, it is inferred that the proportion of elderly individuals with morbidities in the age group 60–64 years (73.5%) was lower than that observed in higher age groups (76-80 years), indicating that morbidities increase with advancing age (Table 1). The association between age and the prevalence of chronic diseases was found to be statistically significant ($P < 0.05$). A similar trend was reported by **Reddy P.H. et al. (1996)(10)** in a study conducted in Karnataka proportion of morbidity increasing with age. The reason for similar results may be the aging effect of different extrinsic factors such as environmental changes or dietary restrictions and intrinsic factors such as gene manipulation on the population-level manifestation of aging and decrease immunity with age and lead to morbidity. In the present study, elderly females predominantly suffered from cataract (72.4%), anemia (56.1%), hypertension (53.6%), and musculoskeletal problems (24.7%), while elderly males had higher prevalence of dental problems (40.3%), chronic lung disease (37.3%), senile deafness (24.3%), diabetes (9.3%), and ischemic heart disease (2.3%) (Table 2). Similar patterns were reported by **George L.S. et al. (2017)(**11) in Raichur, **Sehgal R.K. et al. (2015)**(12) in Ghaziabad, and **Sharma D. et al. (2013)(**13) in Shimla. Higher morbidity among women may be linked to strenuous household smoke exposure, and postmenopausal changes, while in men it is associated with smoking and alcohol use.

In our study observed that only 19.5% of study subjects were medically insured. Only 15.0% of the elderly with chronic disease were medically insured, however, 4.5% of the elderly without the

chronic disease had health insurance (Table-3). The difference in the prevalence rate of chronic diseases amongst subjects with and without health insurance was found to be not statistically significant (P>0.05). Similar trends were observed in the report on the status of the elderly in selected states of India (2011)(14) where the utilization of the social security scheme was very low among those belonging to Below Poverty Line (BPL) households. This could be due to the reason that most people were reluctant to spend money on health when they were well. The benefit of pooling resources for healthcare was not known to many.

In the present study, elderly individuals from higher socioeconomic class (Class I) had a lower prevalence of morbidities (65.5%) compared to those in lower classes, with morbidity rates of 82.0%, 85.6%, 88.9%, and 80.0% in Class II, III, IV, and V respectively, showing a statistically significant association between socioeconomic class and morbidity (Table 4). Similar findings were reported by **Jain M. et al. (2006)**(15) in Agra, where health-seeking behavior depended largely on socioeconomic status, and by **Usha P. et al. (2020)**(16) in Uttarakhand, where morbidity declined with higher socioeconomic class (modified BG Prasad scale). The trend may be explained by lifestyle differences, personal behavior, physical activity, and varying work-related stress across socioeconomic strata.

In our study, 72.4% of the elderly sought treatment, while 27.7% did not. Treatment-seeking was higher among females (78.8%) compared to males (67.1%) (Table 5). **Sharma D. et al. (2013)**(13) in Shimla reported no significant gender difference in treatment-seeking behavior ($p > 0.05$), likely due to similar socioeconomic conditions and service availability in both rural and urban areas. In contrast, **Barua K. et al. (2017)**(2) in Assam found that more males (58.2%) than females (41.8%) availed treatment, attributed to female dependency in urban slums and male predominance in geriatric care. Additionally, financial constraints and reliance on self-medication contributed to treatment gaps among the elderly.

In the present study, it was observed that treatment-seeking behavior declined with increasing age. Among the elderly, 77.7% in the 60–65 years group and 76.0% in the 66–70 years group sought treatment, whereas only 48.0% of those above 85 years did so. This difference was found to be statistically significant ($p < 0.05$) (Table 6). Similar findings were reported by **Hakmaosa A. et al. (2015)**(17) in Assam, where 76.8% of elderly aged 70–79 years sought treatment, while only 60.7% in the 80+ group did so, although the difference was statistically insignificant ($p > 0.05$). The variation may be explained by the rural focus of their study, compared to our rural–urban coverage.

In the present study, out of 472 subjects, 128 were illiterate, of whom only 69.5% sought treatment, which was lower compared to an average of 74.0% among other educational groups. However, the difference in health-seeking behavior for chronic diseases by educational status was not statistically significant ($p > 0.05$) (Table 7). **Sharma D. et al. (2013)** (13) in Shimla similarly reported no significant association, with odds of illiterate versus literate being 1.1. In contrast, **Barua K. et al. (2017)** (2) in Assam found lower treatment-seeking among the illiterate (40.0%), primary educated (51.0%), and middle school educated (55.5%), with slightly higher rates among high school (25.0%) and 10th pass (66.7%). The lower utilization in these groups may be attributed to reliance on over-the-counter medications, underestimation of symptoms as age-related, and the perception that illnesses were mild, thereby reducing the perceived need for formal treatment.

In our study, the majority of subjects (73.0%) did not have any pension scheme, while only 27.0% reported receiving a pension (Table 9). Similar findings were reported by **A Warbhe P. et al. (2015)** (18) in Mumbai, where 70% of participants lacked pension support and only 30% received it. This may be attributed to a high proportion of illiteracy among the elderly, leading to limited awareness of available benefits and entitlements.

In the present study, 60% of subjects were registered under various government schemes, while 40% were not (Table 10). A similar finding was reported by **Shukla M. et al. (2017)** (6) in rural eastern Uttar Pradesh, where 59.8% of subjects were enrolled in government schemes and 40.2% were not. The similarity in results may be attributed to the comparable geographical settings of both studies.

CONCLUSION

The study underscores a high burden of morbidity among the elderly population of Kanpur, with significant disparities based on age, gender, and socioeconomic status. Despite a relatively high rate of treatment-seeking, lack of health insurance, low pension coverage, and limited awareness or registration under government health schemes remain major barriers to adequate geriatric healthcare.

There is an urgent need to strengthen geriatric healthcare services, improve health insurance penetration, promote awareness about government schemes, and provide targeted support to economically disadvantaged and older

elderly groups, especially those above 75 years. Focused interventions in both rural and urban areas could significantly enhance the quality of life and healthcare access for the ageing population in Kanpur district

RECOMMENDATION

To address the high burden of morbidity among the elderly, regular health screenings and dedicated geriatric services should be strengthened at primary care levels. Awareness about government health schemes and insurance coverage must be improved, especially among socioeconomically weaker and illiterate groups. Pension benefits should be expanded to enhance financial security. Community-based health education and outreach programs should be promoted to improve treatment-seeking behavior. Training of healthcare workers in geriatric care and integration of elderly care into national health programs is essential. Policy efforts must prioritize elderly health through inclusive planning and better access to services and support.

Based on the findings of the present study, several recommendations can be made to improve the health and well-being of the geriatric population. Firstly, dedicated geriatric health services should be strengthened at the primary healthcare level, with regular screening for common morbidities such as hypertension, cataract, musculoskeletal problems, and chronic lung diseases. Awareness about health insurance schemes and government programs like PMJAY, NPHCE, and Rashtriya Vayoshri Yojana should be increased, especially among the uninsured elderly. Treatment-seeking behavior, particularly among older age groups, should be encouraged through community outreach and education campaigns. Efforts should be made to address socioeconomic disparities by providing subsidized care to the lower classes who showed a higher burden of disease. Furthermore, expanding the coverage of pension schemes is necessary to provide financial support to the elderly, as the majority were not enrolled in any pension program. Finally, continuous monitoring and evaluation of geriatric care services should be undertaken to ensure effective implementation and to make necessary improvements based on local needs.

LIMITATION OF THE STUDY

The study had certain limitations. Being a cross-sectional study, it only provided a snapshot of the situation and could not establish causal relationships. Data collected through self-reporting might be subject to recall bias or social desirability bias. The study was limited to selected rural and urban areas of Kanpur district, which may affect the generalizability of the findings to other regions. Seriously ill individuals were excluded, which may have led to an underestimation of the true morbidity burden. Additionally, while the sample size was statistically sufficient, stratified analysis for certain subgroups may have been limited due to small numbers. There may also have been non-response bias from eligible participants who were unavailable or unwilling to participate. Furthermore, although health insurance coverage was noted, the study did not assess the quality, extent, or actual utilization of the insurance benefits.

RELEVANCE OF THE STUDY

This study holds significant relevance in the current demographic and public health context. With the growing elderly population in India, particularly in cities like Kanpur, understanding the health status and healthcare needs of the geriatric population is essential. The study provides valuable insights into the prevalence of common morbidities among the elderly, such as cataracts, hypertension, and chronic lung diseases, and highlights gaps in treatment-seeking behavior and health insurance coverage.

It also draws attention to disparities in healthcare access based on age, gender, education, and socioeconomic status. This evidence can be used by policymakers, public health professionals, and healthcare providers to design targeted interventions and strengthen geriatric care services. Moreover, the findings support the need for improved awareness and enrolment in government health schemes and insurance programs to reduce the financial burden on elderly individuals.

In summary, this study is highly relevant as it contributes to a better understanding of the health challenges faced by the aging population and provides a foundation for planning, implementing, and evaluating geriatric healthcare strategies in both urban and rural settings.

AUTHORS CONTRIBUTION

All authors have contributed equally.

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Nil

CONFLICT OF INTEREST

There are no conflict of Interest

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Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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