Introduction

With improved standards of living, one of the biggest social changes brought about is population aging. There has been a progressive increase in proportion of elderly population in India from 6.8% in 1991 to 8.6% in 2011[1] and projected to increase to 19% in 2050.[2] The number and proportion of the world's elderly population in 2000 were 605 million and 11%, respectively, and it is estimated that the corresponding figures in 2050 will be 2 billion and 20%.[3] In India, there are presently 90 million elderly people.[4]

The health and social problems of the elderly are separate from other group of population. Their health problems are inevitable because of aging process and long-term chronic illnesses, which are common in old age. Their social and mental problems are because of lack of income, dependency, loneliness, deprivation, physical and mental maladjustment, etc. Much has been done in the present time in this country for health and social upliftment including standard of living of the elderly, but this is not enough as compared with developed countries. Very little study has been done in the state of Odisha to assess the health morbidities and health-seeking behavior of the aged. Therefore, the present study was undertaken with the following objectives:

Objectives

1. To determine the pattern of physical morbidities in geriatric population
2. To study the utilization of health services among them.

Background: Population aging is inevitable. Old age is marked with health problems because of aging process, long-term chronic illnesses, also associated with social and mental problems. Objectives: To determine the pattern of physical morbidities in geriatric population and to study the utilization of health services among them. Methods: A cross-sectional study was undertaken from April to September 2017, among 270 consenting elderly people, residing in urban slums under field practice area of a medical college, using a structured interview schedule. Results: Among the 270 elderly, 36.30% were males, 80% belonged to nuclear families. A total of 262 reported of some morbidity, 61.85% had hypertension, 45.19% had diabetes, 37.78% had acid peptic disease, and 51.08% reported to have 1–3 morbidities. Majority (41.85%) of them had visited a physician on an average of 4–6 times in the preceding year. A total of 84.81% went to the urban health center, whereas 24.81% to a government hospital for treatment. Reasons cited for preference of health facility were “free consultation” and “nearby location” (85.19%). A total of 90.74% received allopathic medicines.

Conclusion: Prevalence of morbidity was found to be high, which can be attributed to their compromised living conditions. Health-seeking behavior was found to be good.

Keywords: Elderly, health seeking, morbidity, urban
Materials and Methods

Using a cross-sectional study design, the study was conducted from April to September 2017, in the urban slums under field practice area of Urban Health and Training Centre (UHTC), Department of Community Medicine, of a medical college. The study population comprised of consenting elderly (>60 years old) residents of both sexes. This settlement comprises of five slums, covering a total population of about 12,500 with 3,120 households.

Inclusion criteria
- All individuals more than or equal to 60 years of age
- All elderly who gave informed written consent.

Exclusion criteria
- Participants who were not in a position or unable to give information because of any reason. The deaf/dumb/blind, those with diagnosed psychiatric illness (schizophrenia, mental retardation) or neurological disorders (Parkinsonism, severe head injury, or brain neoplasm), and those who were ill at the time of the study were excluded, as there was no way to obtain reliable information from them.

Sample Size: Statistically significant sample size was calculated by applying the sample size formula:

\[ n = \frac{z^2 \cdot pq}{d^2} \]

where
- \( n \) = the sample size to be estimated
- \( z \) = the standard normal deviate set as 1.96
- \( p \) = the estimated proportion of problem
- \( q = 1-p \)
- \( d \) = the precision (0.05)

Assuming the health morbidity in elderly people, 60 year and above as 20% and precision as 5% with level of confidence as 95%.

Taking additional 10% for nonresponse, the optimum sample size was taken as 270 for the study.

Sampling Technique: Systematic random sampling was used in the study to identify households. Simple random sampling was used to identify elderly in each household if more than one elderly was present in any household.

Various stages of sampling are described as follows

Stage I: Selection of households in the study area
The households to be included in the study were selected by systematic random sampling. The serial wise list of households was obtained, which consisted of the sampling frame. The urban settlement under the UHTC area has 3,120 households. The sampling interval calculated was:

\[ SI = \frac{\text{No. of households in study area}}{\text{Desired sample size}} \]
\[ = \frac{3120}{270} \]
\[ = 11 \]

A random number less than or equal to the sampling interval was chosen, i.e. 10. This number gave location of the first household.

The random number was added to the sampling interval and it gave the second household. Similarly, we added this number of (second household) to the sampling interval to get the third household and so on. Thus, all the 270 households were identified.

1st household = 10
2nd household = 10 + 11 = 21
3rd household = 21 + 11 = 32 and so on.

Stage II: Selection of study subject from each household
From each selected household, one eligible elderly was chosen for the study. In case if there were more than one eligible study participants in a household, then only one elderly was randomly selected by lottery method. In case if there were no eligible participants in a household, the next household with eligible participant was included in the study.

Procedure for data collection

A team was made including the researchers with other postgraduate students and interns. All of them were oriented about the purpose and method of study. The researcher along with the survey team who were involved in conducting interview were oriented and trained according to the questionnaire. The health worker and local community leaders were informed prior to the visit. Each selected household was approached. They were explained about the purpose of the study and their assistance was sought in this regard. For better understanding, the study tool was translated into their local language Odia. The investigator and the team visited the household at least twice in the study area. In the first visit, identification of the study subject with local health worker was done. Each elderly was explained about the purpose of the study and consent was taken and assured about the confidentiality at all level, so that the survey could be carried out smoothly. The second visit was utilized for data collection. After obtaining informed consent from the participant, a face-to-face interview was conducted and information regarding sociodemographic profile, personal and family history, marital status and income, addiction, utilization of health services, health morbidities, and health-seeking behavior...
was obtained. A thorough general examination, weight, height and blood pressure (BP) measurement was done.

**Study tool**

A predesigned, pretested structured schedule was used, which was developed and validated by technical experts; it was pilot tested in a slum different from the study area and a few necessary changes were incorporated. The interview schedule developed had three sections. Section I: Sociodemographic details collected were age, gender, educational status, occupation, religion, and type of family, etc. Total number of family members and income was taken to assess the socioeconomic class based on BJ Prasad socioeconomic status of the subject.[7]

Section II: Morbidity pattern was assessed using the previous diagnosis by a registered medical practitioner. Medical history of the participant (self-reported health conditions such as hypertension or diabetes mellitus, medications used, and history of visits to physicians over the year immediately preceding the survey), lifestyle related information (specially smoking and level of physical activity) was collected.

Section III: General medical examination including height, weight, body mass index, and BP was done for the study participants. Anybody with newly diagnosed health problem or health complaint was referred to the Medicine OPD of UHTC KIMS for further evaluation.

The questionnaire consisted of both close-ended and some open-ended questions. The questionnaire was interviewer administered. Filled questionnaire was checked for completeness and coded by the researcher.

Data analysis: Data was then entered into Microsoft Excel spreadsheet and analyzed using Epi Info 7 software [version 3.5.4]. Descriptive statistics were used and Fisher’s exact test and Chi-square test as the test of significance, taking a P value of <0.05 as statistically significant.

**Ethical considerations**

Ethical clearance and approval was obtained from the Institutional Ethics Committee, KIMS. Informed written consent was obtained from the participants, assuring their full confidentiality and voluntariness that they had the right to refuse the participation at any stage of data collection.

**Results**

In this community-based cross-sectional study, among the 270 elderly people residing in the urban settlement of the field practice area of the medical college, maximum (67.41%) belonged to 60–69 years age group, 36.30% were males, 78.89% were Hindus, and 37.41% belonged to lower class of BG Prasad socioeconomic status scale [Table 1]. Morbidity profile: A total of 61.85% participants were hypertensive, 45.19% were suffering from diabetes mellitus, around 30% from both hypertension and diabetes mellitus, 2.96% [8 of 270] of them did not suffer from any diseases [Table 2]. Of the 81 who currently had cataract, 16 were advised for surgery. Other than these, they were around 20 who were already operated.

A total of 2.96% [8 out of 270] participants had no morbidities, 54.08% had 1–3 morbidities, 42.96% had 4–6 morbidities, and none of the participants had seven or more than seven morbidities.

Treatment-seeking behavior: Majority (41.85%) of the study participants had visited a physician 4–6 times, followed by 28.89% who visited a physician 1–3 times in the last 1 year [Figure 1].

| Respondent characteristics | Respondents |
|----------------------------|-------------|
|                           | Frequency (in numbers) | Frequency (in percentage) |
| Age Group (in years)      |                          |                           |
| 60-69                     | 182                      | 67.41                     |
| 70-79                     | 67                       | 24.81                     |
| ≥80                       | 21                       | 7.78                      |
| Sex                       |                          |                           |
| Male                      | 98                       | 36.30                     |
| Female                    | 172                      | 63.70                     |
| Religion                  |                          |                           |
| Hindu                     | 213                      | 78.89                     |
| Muslim                    | 57                       | 21.11                     |
| Caste                     |                          |                           |
| SC/ST                     | 29                       | 10.74                     |
| OBC                       | 65                       | 24.07                     |
| General                   | 176                      | 65.19                     |
| Marital status            |                          |                           |
| Married                   | 181                      | 67.04                     |
| Single                    | 35                       | 12.96                     |
| Widow/Widowers/Separated  | 54                       | 20.00                     |
| Type of family            |                          |                           |
| Joint                     | 54                       | 20.00                     |
| Nuclear                   | 216                      | 80.00                     |
| Educational status        |                          |                           |
| Illiterate                | 48                       | 17.78                     |
| Primary School            | 200                      | 74.07                     |
| High School And Above     | 22                       | 8.15                      |
| Socio-economic status scale | According to BG Prasad |                           |
| Upper Class               | 86                       | 31.85                     |
| Upper Middle Class        | 9                        | 3.33                      |
| Middle Class              | 9                        | 3.33                      |
| Lower Middle Class        | 65                       | 24.08                     |
| Lower Class               | 101                      | 37.41                     |
| As Per Addiction [*multiple response] |         |                           |
| Alcohol                   | 91                       | 33.70                     |
| Smoking                   | 100                      | 37.04                     |
| Chewing Tobacco           | 197                      | 72.96                     |
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Around 92.22% elderly had visited a physician once or more, which shows their good treatment-seeking behavior.

A total of 84.81% participants went to the UHTC and 24.81% to the government/BMC hospital for treatment, 90.74% received allopathic and 2.22% ayurvedic treatments [Table 3].

The reasons cited by them for utilizing the preferred health facility were “free consultation” and “nearby location” by 85.19%, followed by “past experience being good” by 75.93% [Figure 2].

Discussion

Majority (67.41%, 182) of the elderly were in the age group of 60–69 years followed by 24.81% (67) in 70–79 years, and rest 7.78% (21) were in ≥80 age group, showing maximum elderly were in the first decade of old age. Similar findings were found in a study done by Ganesh Kumar et al.[8] during 2013 in a community-based study on quality of life and its associated factors among elderly in urban Puducherry where majority (64%) were in age group of 60–69 years, and 36% in ≥70 years group. In a study done in urban slums in Assam, also a similarity was seen with 64.8% in 60–69 years age group.[9]

In gender-wise distribution, female elderly were more, 63.70% (172) than the male 36.30% (98). Similar type of distribution in gender was also seen in urban elderly in 2013 study of Ganesh Kumar et al.[8] in Puducherry, i.e. female 60.3% and male 39.7% and in another study in Mumbai, 38.6% were males.[10] In another study done in urban slums in Assam, a higher (48.8%) number of males were found, this difference can be because of the difference in the study locations.[9]

In another study done in urban slums in Assam, 70.4% reported arthrits, followed by cataract (58.4%) and APD (56%).[9]

The morbidities of the elderly were assessed using the previous diagnosis by a registered medical practitioner, for which the elderly were receiving treatment during last one year. A total of 61.85% (majority) of them had hypertension, followed by 50.74% joint pain, 45.19% diabetes, 37.78% APD, 38.15% dental problems, 15.19% cataract, 15.19% COPD, and 17.04% anemia. S Qadri et al.[6] in their study among the rural elderly of Ambala district of Haryana found a higher prevalence of certain morbidities such as anemia (64%), dental problem (62.2%), joint problem (51.4%), cataract (46.8%), and senile deafness (25.4%), but a lower prevalence of acid peptic disease (22.5%) and diabetes (9%). These differences may be because of the differences in the lifestyle and geographical location of both the studies; our study was on an urban population, whereas the other study was done in a rural area. In a study done in urban slums in Assam, 70.4% reported arthritis, followed by cataract (58.4%) and APD (56%).[9]

In another study in Mumbai, only 19.5% reported hypertension,
10% dental problems, and 13.6% had cataract.\textsuperscript{10} Even if these studies are in urban areas still there was a difference in the reported morbidities; these differences may be because of the difference in living conditions of the people and healthcare-seeking behavior.

In our study, none of the elderly had reported of senile deafness. Although this ailment is common among elderly, many a times they usually do not seek treatment. This might be the cause of the present elderly not reporting senile deafness (as they might not have seeked treatment during the last 1 year).

Majority (41.85\%) visited a physician 4–6 times, followed by 28.29\% (1–3 times), 18.15\% who visited 7–10 times, and 3.33\% visited ≥11 times. As such, 91.62\% elderly had visited a physician atleast once. This shows their good treatment-seeking behavior.

Majority of the subjects, i.e. 84.81\% were utilizing the medical services of UHTC during last one year. This was followed by 36.67\% subjects utilizing private hospital/doctor. Only 24.81\% subjects were utilizing government facility for their treatment. In a study done in urban slums in Assam, 48.7\% visited a government health facility.\textsuperscript{19} In another study in Mumbai, 54.2\% were utilizing government health facilities.\textsuperscript{10} These differences were because of the quality of services in the various facilities. The UHTC has a dedicated team of doctors and paramedical health staff, which assures good quality care and hence may be the reason for the higher preference in our study.

Regarding the type of treatment they received, it was seen that 90.74\% had received allopathy (modern medicine) treatment, followed by 7.78\% who received homeopathic and 2.22\% received ayurvedic. It was also seen that some subjects had received combined type of treatment, i.e. allopathy plus homeopathic (7.78\%) and allopathy plus ayurvedic (2.22\%). Syed Qadri et al.\textsuperscript{8} in a study on quality of life in rural Ambala district of Haryana found 92.7\% subjects did not seek healthcare from government source, this may be because of the unavailability of satisfactory and quality healthcare facilities at these government facilities. In a study by Qadri et al., majority (93.6\%) of them utilized modern medicine (allopathy), which is in agreement with our study.

The most common reasons for utilization of the health facilities were “nearer to house/less distance” in 85.19\%, “no fees for consultations” in 85.19\%, “good past experience” in 75.93\%.

Syed Qadri et al.\textsuperscript{8} found majority of the subjects (92.7\%) were utilizing nongovernment healthcare facilities. The most common reason for not utilizing government healthcare facilities were long distance from house (33\%), lack of medicine (20.6\%), and more waiting time (10.8\%).

Limitations: This study being done in an urban slum population, the results cannot be generalized to the elderly people in general. There may be instances of recall bias because of age-related reporting problems.

**Conclusion**

This study among the elderly in the urban settlement highlighted a high prevalence of morbidity, which can be attributed because of lack of family support system and compromised living conditions in the slums. Health-seeking behavior was found to be good with 91.62\% visiting a physician atleast once in the preceding year. Their healthcare-seeking behavior, preference of utilization of healthcare facility, and reasons cited for same will further help us as primary care physicians to know about their health needs.

Identification and prioritization of specialized geriatric services will further help in increased and timely uptake of medical services. With the increase in the elderly population, there is a need for specialized geriatric health services at community setups for the ease of access and utilization of these services by this group of vulnerable population.

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**Conflicts of interest**

There are no conflicts of interest.

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