A study of morbidity profile among geriatric population in Uttarakhand: A community based cross-sectional study

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ABSTRACT

Context: Population of elderly in India is growing day by day. Elderly population of India is 8.6% and in Uttarakhand it is 8.9%. Health needs of geriatric people differs from others. This study was an attempt to study the morbidity profile of geriatric people that may serve as a baseline data and also help in planning the health services. Aims: To study Morbidity profile of geriatric population in Uttarakhand. Settings and Design: A community-based cross-sectional study was conducted among geriatric people in rural and urban areas of Uttarakhand. Study participants aged 60 years and above were included in the study and a sample size of 400 was calculated. Methods and Materials: Predesigned, pretested and semistructured questionnaire was used to collect information on sociodemographic characteristics and morbidity status of study participants. Statistical Analysis Used: Data was entered into excel sheets and analyzed using SPSS version 23 utilizing appropriate statistical methods. Results: Among 400 elderly people most common organ system affected was musculoskeletal (77.20%). Other commonly affected health systems were psychological (75.90%), digestive (73.60%), eye (56.67%), endocrine (35.90%), cardiovascular (33.08%), general and unspecified health problems (32.05%), ear (24.62%) and respiratory system (19.74%). Very few elderlies had neurological (6.67%) and urological (1.28%) problems. Conclusions: As shown in the present study very high percentage of morbidities were found in the study population. As a result, there is a need to further strengthen existing geriatric health care services at primary, secondary and tertiary level.

Keywords: Elderly, geriatric, morbidity, rural, urban

Introduction

The aging process is a biological reality which is having its own dynamic and largely beyond human control.[¹] Indian Government has adopted National Policy on Older Person in January 1999, which defines elderly persons or senior citizens are those who are of age 60 years and above.[²] UN cutoff age of older person is also considered as 60 and above.[³]

Aging is a complex process which causes many physiological and biological changes in body and with passage of time elderly people face uncountable number of challenges in their daily life at physical, mental, emotional, and social level causing morbidities of different parts of body leading to disability and death.[⁴]

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It is expected that by 2025, India will have highest number of elderly people in the world which would increase burden of chronic morbidity, mortality, and disability. These chronic and disabling morbidities which call for prompt medical treatment, palliative care, rehabilitative care and physiotherapy[2] but Geriatric health care proposed in India is still a distant dream due to lack of specialized and trained workforce and absence of an infrastructure beyond tertiary care hospitals.[1,4]

The state of Uttarakhand is predominantly hilly with poor road connectivity and difficult hilly terrain. Very few studies have been conducted regarding morbidity pattern of geriatric population in Uttarakhand. Among these studies no study was conducted to assess morbidity and mortality patterns in rural and urban areas of Uttarakhand. Hence this study has been done with an objective to study morbidity profile of Geriatric population in rural and urban areas of Uttarakhand.

Elderly people have got specific needs related to health. There is increasing need for good quality geriatric health care service at the primary level to manage the commonly existing health problems in the community and it should be based on the “felt needs.”

**Subjects and Methods**

A community-based cross-sectional study was conducted in rural and urban areas of Uttarakhand. Study was conducted for a period of 6 months from June 2019 to Nov 2019. Study participants were all elderly population (60 years and above) residing in rural and urban areas of Uttarakhand. Sample size was calculated taking prevalence of morbidity in elderly population as 64.8%,[3] 95% confidence interval, absolute precision of 10% and design effect of 2, to be 183. Taking non-response rate of 10% final sample size came out to be 200. Finally, 200 elderly were taken from rural area and 200 elderly from urban area. So total respondents were 400.

**Inclusion criteria**

1) Elderly who were 60 years and above.
2) Elderly who gave consent to participate in the study.

**Exclusion criteria**

1) Elderly who showed hostile behavior and did not give consent to participate in the study.
2) Elderly who were not present at home at the time of the visit.

**Sampling technique**

Uttarakhand state was divided into two areas, rural area [comprising of 6 community development blocks (CDB) and urban area (comprising of 8 Nagar Nigams)]. In the rural area, 1 CDB Raipur was selected randomly. Raipur comprises of 3 PHCs so out of these 3 PHCs, PHC Thano was randomly selected, comprises of 7 sub-centers. So, among these sub-centers two sub-centers Thano (plain area) and Bhogpur (hilly area) was selected. Each from Thano and Bhogpur 100 participants were selected by probability proportional to sample size (PPS). Similarly, in urban area out of 8 Nagar Nigams, Rishikesh was selected randomly comprising of 26 wards. Out of these 26 wards 2 wards Chandreshwar Nagar and Sarvaharanagar were selected randomly. Out of these two wards from each of them 100 study participants were selected by PPS.

**Study method**

House to house survey was done. 200 study participants from rural area and 200 from urban area. Predesigned, pretested, and semi-structured questionnaire was made to collect data on sociodemographic characters of study participants and history on morbidity status. This was followed by complete general, physical, and systematic examination.

**Study tool**

Morbidity status of study participants according to affected health system was classified using International classification of Primary Care-2nd Edition, Wonga International Classification Committee (WICCC).

**Data analysis**

Data was entered into excel sheet and analyzed using SPSS version 23. For continuous variable mean and SD was calculated and t-test was applied to compare mean Chi-square test was applied to test proportions. P value <0.05 was considered statistically significant.

**Ethical clearance**

The study was ethically approved by ethical committee of institute. The protocol and importance of the study was explained to the participants before recruitment into the study, followed by a signed informed consent by them.

**Results**

Table 1 depicts the sociodemographic and behavioral characteristics of study participants and their association with presence of chronic morbidity in them. Out of 400 elderly people, 390 (97.5) % study participants had one or the other chronic morbidity, whereas only 10 (2.5%) did not have any chronic morbidity. All elderly in age group of 71–80 years (100.0%) and >80 years (100.0%) had chronic morbidity. Chronic morbidity was more among females (98.6%), illiterate elderly (98.2%), and those belonging to rural areas (98.0%), but these differences were not statistically significant. Morbidity was significantly more among those who were unemployed (99.5%) and dependant (99.2%). Table 2 depicts distribution of study participants according to various chronic morbid conditions. Most common health system affected was musculoskeletal (77.20%). Other commonly affected health systems were psychological (75.90%), digestive (73.60%), eye (56.67%), endocrine (35.90%), cardiovascular (33.08%), general and unspecified health problems (32.05%), ear (24.62%) and respiratory system (19.74%). Very few elderlies had
neurological (6.67%) and urological (1.28%) problems. Musculoskeletal and psychological morbidity were slightly more in rural areas as compared to urban areas (54.15% v/s 45.85%) and (54.73% v/s 45.27%). Involvement of digestive system were almost equal among elderly participants living in both urban and rural areas.

**Discussion**

In the present study maximum number of elderlies belonged to age group 60–70 years (76.0%). Mean age was 68.15 years with SD ± 10.13 and variance 102.71. Similar study was done by Saxena V, et al[6] (2012) in Dehradun showing that 74.6% elders belonged to 60–70 years age group. In the present study 45.8% were males and 54.2% were females and these findings matched with findings of Gupta A, et al[7] (2016), at Ludhiana. In the present study 58.3% elderlies were illiterate and 27.8%, 11.1% and 2.8% elderlies were educated up to primary, middle and high school, respectively. Similar results were shown by Gladius J H, et al[8] (2016) at Tamilnadu. In the present study 51.3% elderlies were unemployed and similar results were shown by Soni S, et al[9] (2016) at Bihar and Kapil U, et al[10] (2018)
at Nainital, Uttarakhand. In our study maximum number of elderslies belonged to lower middle class (52.0%) followed by 27.5% in middle class, 16.3% in lower class, 4.0% in upper middle class, and only 0.3% in upper class. Similar findings were shown by Pandve H T, et al (2010) at Pune. Also, in our study 66.0% of elderslies were dependant and almost similar results were observed in study done by Soni S, et al (2016) at Bihar where dependency was 67.2%. In the present study chronic morbidity was more among illiterate (98.2%) participants which was not significant and significantly more among unemployed (99.5%) and financially dependent elderslies (99.2%). Almost similar results were shown by Bartwal j, et al (2016) in Nainital, Uttarakhand. Study participants were inquired about their chronic morbid conditions to find out status of morbidity pattern of study population as per affected health system as per International classification of Primary Care-2nd Edition, Wonga International Classification Committee (WICCG). In the present study out of 400 elderslies, 390 (97.50%) were having chronic morbidity. Similar findings were shown by Polisetty S, et al (2017) at Visakhapatnam, reporting 99.6% morbidity among elderly people, whereas a little less prevalence (83.9%) was shown by Piramanayagam A, et al (2013) at Tamilnadu. Elderly people with chronic morbid conditions were almost equal in both urban and rural areas. On further observation after classifying the chronic morbid conditions according to affected health system we found that most common health system involved was musculoskeletal (77.20%). Other commonly involved health systems were psychological (75.90%), digestive (73.60%), eye (56.67%), endocrine (35.90%), cardiovascular (33.08%), general and unspecified health problems (32.05%), ear (24.62%) and respiratory (19.74%). Very few elderslies had neurological (6.67%) and urological (1.28%) problems. Results of my study found similarities with that of study done by Verma V, et al (3) (2016) Allahabad where they found involvement of musculoskeletal system (68.5%) was most common and other commonly involved health systems were psychological (59.75%), digestive (29.75%), ear (13%), respiratory (11.25%), Chauhan P, et al (2013) at Nellore also did a study among geriatric people and found involvement of musculoskeletal system (69.7%), digestive (16.2%) cardiovascular (38.3%) respiratory (26.9%), neurological (6.2%), psychological (12.8%) and urogenital (5.7%). In study of Mullick T H, et al (2018) at Bhubaneswar also showed similar results regarding cardiovascular diseases (31.70%).

Conclusion and Recommendation
The present study has highlighted high prevalence of morbidity. It is more in females and those elderly who are more than 70 years of age, also who are unemployed and financially dependent. So, awareness among elderly people should be created for regular medical check-ups in community as well as in all the OPDs especially at PHCs to ensure prevention and early detection of the health problems as geriatric population requires special attention in every aspect. Effort should be made to make services available, affordable, and accessible. Involvement of NGOs and voluntary organizations should be included. More health insurance schemes are needed. There is need of training and further research and larger community-based study in Geriatrics and Gerontology.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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