Study on morbidity pattern among elderly in urban area of Barpeta, Assam, India

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Background: Degenerative diseases most commonly affect the elderly. The management of these chronic diseases is also very expensive, thereby making it out-of-pocket expenditure for elderly persons. As the elderly population is likely to increase in the future, the concept of active and healthy aging needs to be promoted among the elderly. Objectives: To estimate the morbidity pattern of the elderly in an urban population of Barpeta, and to evaluate the different morbidity patterns of the young old and old old. Methods: The study was conducted in eight urban wards of Barpeta town using multistage sampling. From the urban wards, 150 elderly persons were selected according to proportionate to the size of the urban wards. Pretested and predesigned proforma was used to assess the morbidity pattern of the elderly. Result: Most of the system disorders were almost equally distributed among elderly males and females. Most common disorders were diseases of the eye and adnexa (46%) followed endocrine, nutritional, and metabolic (37.3%) diseases, and disease of the circulatory system (34.7%). Diseases of the respiratory system (10.1%) and genitourinary system (10.1%) were more common in males, whereas cataract (29.6%) and hearing impairment (9.9%) were more common in females. Conclusion: The prevalence of morbidity increases with increasing age. Early detection of morbidities among elderly and timely referral to secondary or tertiary care facilities by enhancing the capacity of primary health care providers are required to promote active and healthy aging.

Keywords: Capacity building, elderly people, geriatric, morbidity, system disorders, urban

Introduction

The population aging around the world is increasing very significantly. The life span of people is increasing worldwide, and most people can expect to live beyond the sixties. The world population, 60 years or older is expected to be 2 billion by 2050. The elderly will outnumber children below 14 years of age, and 80% of all elderly will live in low- and middle-income countries. The definition of elderly is variable depending on various communities in the world. However, a person aged 60 years or more, is referred to as “elderly” in India. India, the second-largest country in the world, has a 72 million elderly population. The elderly population accounted for 8.2% of the total population in 2011. The share and size of the elderly population are gradually increasing over time from 5.6% in 1961 and are expected to rise to 12.4% by 2026. Degenerative diseases or chronic illnesses, commonly affect the elderly population and most of them suffer from multiple medical conditions. Elderly people suffer from two types of health problems i.e., medical and psychosocial. Common medical problems are visual, cardiovascular, musculoskeletal, and gastrointestinal diseases. The psychosocial problems commonly

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reported are impaired memory and intelligence, anxiety, depression, the rigidity of outlook, lack of occupation and earning, dependency and non-satisfaction with family members.\(^8\)

Management of diseases in the elderly is always expensive, as it requires continuous medication and follow-up, leading to out-of-pocket expenditure. As the elderly population is likely to increase in the future, there will be a definite shift in the disease pattern, i.e., from communicable to noncommunicable. So, this is high time that the primary health care system gears up for the growing health needs of the elderly in an equitable, optimal, and comprehensive manner. The concept of healthy aging needs to be addressed and promoted among the elderly, which includes promotive, preventive, curative, and rehabilitative aspects of health.\(^8\)

**Justification of the study**

Though many studies are available on morbidity patterns amongst the elderly, yet no study has been done in Barpeta district, Assam. In light of the above facts, the present study was conducted with the objective to estimate the morbidity pattern of the elderly in an urban area of Barpeta, and to evaluate the different morbidity patterns of the young old and old old.

**Materials and Methods**

A community-based cross-sectional study was carried out in an urban area of Barpeta town from 1st January 2021 to 30th April 2021. The study population comprised all elderly people of age ≥60 years, who have resided in the study area for at least 1 year. The study was conducted using the multistage sampling method. There are 22 urban wards in Barpeta town, from which 8 urban wards were selected randomly and from each urban ward, households were selected by using systematic random sampling.

The sample size was calculated by using the formula \(n = Z^2pq/d^2\), where, \(Z = 1.96\) (Considering 95% confidence interval), \(P = \text{Prevalence, } q = (1 - p)\), \(d = \text{allowable error. Taking default prevalence } P = 50\%\) and taking 8% allowable error, the sample size was calculated to be 150.

**Inclusion criteria**

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

**Exclusion criteria**

1. Elderly persons who were found to be noncooperative and did not give consent to participate in the study.
2. Elderly who were not present at home at the time of visit.

**Sampling procedure**

From the selected urban ward, samples were collected according to proportionate to the size of the urban ward. In the urban wards, systematic sampling was adopted to select the households, and the first household were selected randomly. From the selected household, only one elderly person was included randomly. The process was repeated till the desired sample size was obtained.

If the selected household did not have an elderly person or in case of nonresponse, immediate next household was selected. The elderly persons of the sampled population were interviewed by using predesigned and pretested proforma after taking informed consent. Information on selected sociodemographic characteristics: age, religion, types of family, socioeconomic status (SES), and morbidity pattern were collected by taking history and examining the selected elderly person or from the existing medical records.

Collected information was cleaned thoroughly and entered into MS Excel spreadsheets, and analyses were carried out using proportion, percentage, and Chi-square test.

**Ethical issues**

Ethical clearance was taken from the institutional ethical review committee of Fakhruddin Ali Ahmed Medical College (FAAMCH), Barpeta before the start of the study.

**Results**

Table 1 depicts that the majority of the elderly persons (31.3%) belonged to the age group 65–69 years. The majority of study populations were Hindu (92.7%) by religion. A total of 53.3% of the elderly had been married, and only one elderly lady was never married. Most of the elderly were living in nuclear families (54%) followed by joint families (26.7%) and three-generation families (19.3%). The majority of the elderly (64%) did not receive a pension, and only 36% elderly were receiving a pension.

| Characteristics            | Male (\(n=79\)) (%) | Female (\(n=71\)) (%) | Total (\(n=150\)) (%) |
|----------------------------|---------------------|-----------------------|------------------------|
| Age (Years)                |                     |                       |                        |
| 60-64                      | 23 (29.1)           | 20 (28.2)             | 43 (28.7)              |
| 65-69                      | 26 (32.9)           | 21 (29.6)             | 47 (31.3)              |
| 70-74                      | 15 (19.0)           | 13 (18.3)             | 28 (18.7)              |
| 75-79                      | 10 (12.7)           | 13 (18.3)             | 23 (15.3)              |
| 80 and above               | 5 (6.3)             | 4 (5.6)               | 9 (6.0)                |
| Religion                   |                     |                       |                        |
| Hindu                      | 73 (92.4)           | 66 (93.0)             | 139 (92.7)             |
| Islam                      | 6 (7.6)             | 5 (7.0)               | 11 (7.3)               |
| Marital status             |                     |                       |                        |
| Married                    | 67 (84.8)           | 13 (18.3)             | 80 (53.3)              |
| Widow/Widower              | 12 (15.2)           | 57 (80.3)             | 69 (46.0)              |
| Never Married              | 0                   | 1 (1.4)               | 1 (0.7)                |
| Types of family            |                     |                       |                        |
| Nuclear Family             | 53 (67.1)           | 28 (39.4)             | 81 (54.0)              |
| Joint Family               | 14 (17.7)           | 26 (36.6)             | 40 (26.7)              |
| 3rd Generation             | 12 (15.2)           | 17 (24.0)             | 29 (19.3)              |
| Pension status             |                     |                       |                        |
| Receiving                  | 34 (43.0)           | 20 (28.2)             | 54 (36.0)              |
| Not Receiving              | 45 (57.0)           | 51 (71.8)             | 96 (64.0)              |
In Table 2, the percentage of illiterate elderly was found to be only 4.7% (male 1.2% and female 8.5%). Among the literate elderly, 19.3% did graduation and only 0.7% had a professional degree. The majority of the elderly persons (68%) were found to be currently unemployed (male 51.9% and female 87.3%). As per socio-economic status, the majority of elderly belonged to upper lower (38%) followed by lower (32%), lower middle (20.7%), upper middle (7.3%), and upper (0.7%) class.

Table 3 shows that most of the system disorders were almost equally distributed among elderly males and females. Most commonly involved systems were eyes and adnexa (46%) followed by endocrine, nutritional and metabolic (37.3%), circulatory system (34.7%), musculoskeletal (31.3%), oral cavity and salivary glands (29.3%), digestive system (24.7%), and nervous system (24%). Only 9.3% of the elderly study subjects reported disorders of ear and mastoid. Disorders of the respiratory system and genitourinary system were reported by 8.7% elderly. The prevalence of skin diseases was also found to be low (8%) among the study subjects.

Out of 150 study subjects, 46% of the elderly were found to have diseases of eyes and adnexa. Cataract was found in 26% of the elderly (male 22.8% and female 29.6%). Refractive error was found in 15.3% of the elderly (male 17.7% and female 12.7%), and other ocular morbidities were found in 4.7% of the elderly. Among endocrine, nutrition, and metabolic disorders, diabetes mellitus was found in 6.7% of the elderly (male 7.6% and female 5.6%). Anemia was found in about 22% of the respondents (male 21.5% and female 22.5%). Among the diseases of the circulatory system, hypertension was found in 25.3% (male 26.6%...

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**Table 2: Distribution of elderly based on their socio-economic status**

| Characteristics                | Male (n=79) (%) | Female (n=71) (%) | Total (n=150) (%) |
|-------------------------------|----------------|------------------|------------------|
| Literacy Status              |                |                  |                  |
| Profession or Honours         | 1 (1.3)        | 0                | 1 (0.7)          |
| Graduate                      | 24 (30.4)      | 5 (7.0)          | 29 (19.3)        |
| Intermediate or diploma       | 13 (16.5)      | 12 (16.9)        | 25 (16.7)        |
| High school certificate       | 17 (21.5)      | 16 (22.5)        | 33 (22.0)        |
| Middle school certificate     | 12 (15.2)      | 11 (15.5)        | 23 (15.3)        |
| Primary school certificate    | 11 (14.0)      | 21 (29.6)        | 32 (21.3)        |
| Illiterate                    | 1 (1.3)        | 6 (8.5)          | 7 (4.7)          |
| Occupational status           |                |                  |                  |
| Professionals                 | 1 (1.3)        | 0                | 1 (0.7)          |
| Technician and Associate professionals | 2 (2.5)  | 0                | 2 (1.3)          |
| Skilled workers and shop and market sales workers | 8 (10.1) | 6 (8.5)        | 14 (9.3)         |
| Skilled agricultural and fishery workers | 9 (11.4) | 0                | 9 (6.0)          |
| Craft and related trade workers | 3 (3.8)       | 3 (4.2)          | 6 (4.0)          |
| Plant and Machine operators assemblers | 3 (3.8) | 0                | 3 (2.0)          |
| Elementary occupation         | 12 (15.2)      | 1 (1.4)          | 13 (8.7)         |
| Unemployed                    | 41 (51.9)      | 61 (85.9)        | 102 (68.0)       |
| Socio-economic status         |                |                  |                  |
| Upper (I)                     | 1 (1.3)        | 0                | 1 (0.7)          |
| Upper Middle (II)             | 8 (10.1)       | 3 (4.2)          | 11 (7.3)         |
| Lower Middle (III)            | 15 (19.0)      | 19 (26.8)        | 34 (22.7)        |
| Upper Lower (IV)              | 32 (40.5)      | 25 (35.2)        | 57 (38.0)        |
| Lower (V)                     | 24 (30.4)      | 24 (33.8)        | 48 (32.0)        |

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**Table 3: Morbidity pattern of elderly according to system affected**

| System affected (ICD 10)       | Male (n=79) (%) | Female (n=71) (%) | Total (n=150) (%) |
|-------------------------------|----------------|------------------|------------------|
| Eye and Adnexa (H00 - H59)    | 35 (44.3)      | 34 (47.9)        | 69 (46.0)        |
| Endocrine, Nutritional and Metabolic Diseases (E00-E90) | 30 (37.9) | 26 (36.7)        | 56 (37.3)        |
| Circulatory System (I00 - I99) | 29 (36.7) | 23 (32.4)        | 52 (34.7)        |
| Musculoskeletal System (M00 - M99) | 25 (31.6) | 22 (31.0)        | 47 (31.3)        |
| Oral Cavity and Salivary Glands (K00 - K14) | 24 (30.3) | 20 (28.2)        | 44 (29.3)        |
| Digestive System (K00 - K93)  | 20 (25.3)      | 17 (23.9)        | 37 (24.7)        |
| Nervous System (G00 - G99)    | 20 (25.3)      | 16 (22.5)        | 36 (24.0)        |
| Ear and Mastoid Process (H60 -H95) | 7 (8.9)   | 8 (11.3)         | 14 (9.3)         |
| Respiratory System (J00 - J99) | 8 (10.1)    | 5 (7.0)          | 13 (8.7)         |
| Genitourinary System (N00 - N99) | 8 (10.1) | 5 (7.0)          | 13 (8.7)         |
| Skin and Subcutaneous Tissue (L00 - L99) | 7 (8.9) | 5 (7.0)          | 12 (8.0)         |
and female 23.9%). Myocardial infarction, coronary artery disease, and cardiac arrhythmias (8.7%) were found to be more in males (10.1%) as compared to females (7%). Common musculoskeletal diseases were backache (26%) and osteoarthritis (20.7%). Osteoarthritis was more common in males (8.9%) as compared to females (5.6%). Diseases of oral cavity were seen in 17.7% of the male respondents with dental caries/broken teeth against 14.1% of the female. A total of 8.9% of the male and 11.3% of the female had reported stained teeth. The overall morbidity of the digestive system was higher (24.7%) in our study. Common morbidity was gastritis (35.3%) which was reported by 31.6% of the males and 39.4% of the females. Constipation was reported by 12.7% of the males and 25.4% of the females. Other morbidities like anorexia, gall bladder (GB) stone or renal stone, indigestion, and abdominal pain were more common in females (15.5%) as compared to males (7.6%). Distribution of nervous system disorders: neuritis (16%) was more common in male (16.5%) than in male (15.5%). Other diseases of the nervous system like cerebrovascular accident (CVA) (4%), tremor (2.7%), and dementia (1.3%) were less prevalent among the study subjects. Common ear and mastoid problems were hearing impairment (8%) of which 6.3% were males and 9.9% were females. Among the diseases of the respiratory system among the study population, COPD, Cor pulmonale, allergic cough, and cold were more common (4.7%). Upper respiratory tract infection and bronchial asthma were reported by 4% of the elderly. Among the genitourinary system disorder, urinary tract infection was more common in female (5.6%) as compared to male (2.5%). The prevalence of skin diseases was found in 8% of the elderly, out of which hyperpigmentation was more common in female (5.6%) as compared to male (2.5%) as shown in Table 4.

Table 5 shows the difference in the prevalence of morbidity in young old (age <75) and old-old (age ≥75). Disorders of eyes and adnexa, metabolic disorders, and disorders of the circulatory system, digestive system, and nervous system were significantly more common among old-old as compared to young old.

**Discussion**

In the present study, the majority of the elderly populations were less than 75 years of age and Hindu by religion. The majority of them were male. Among the elderly study subjects, 53.3% had been married, 46% were widow/widower, and only one old lady was never married. Similarly, **Bhatia et al.** in their study found that 59% of the elderly were married, 39.3% were widows/widowers, and only 1% were unmarried. The majority of the elderly were found to be employed (68%). Similar findings were shown in the study done by **Soni S et al.** at Bihar and Kapil U et al. at Nainital.

In the present study, it was observed that diseases of eyes and adnexa were most prevalent (46%), and cataract (26%) was reported as the most common eye problem. A high prevalence of eye disorders was also reported by **Ajay K et al.** Similarly, **Das R et al.** in their hospital-based study at Agartala Government Medical College, Tripura, also reported 36.7% cataract cases among the OPD attendees where 51.5% were aged ≥50 years. In the current study, we observed endocrine, nutritional, and metabolic diseases were 37.3%. Anemia (22%) was found to be more prevalent. The possible reason for the high prevalence of anemia might be due to low iron content in foods consumed in Assam. **Sharma et al.** also observed a high prevalence of anemia (38.7%) which was similar to our study. In our study, diabetes mellitus was found in 6.7% of the elderly, which was more common among males (7.6%). **Sithara et al.** showed 33.25% and **Joshi et al.** showed 30% prevalence of diabetes mellitus which are contrary to our study.

In the present study, 34.7% of the elderly study subjects complained of cardiovascular problems. Hypertension was found in 25.3% of the elderly study subjects which was more common among elderly males than females. Diseases of the circulatory system were significantly more in persons of higher age group as compared to lower age group (<75 yrs). Similar findings were noted by **Shraddha et al.** in an urban population of Mysore, the prevalence of hypertension was 29.3% which was seen more among elderly males (30.4%). However, **Singh et al.** reported a higher prevalence of circulatory system disorders (67%). **Prajapati et al.** in their hospital-based study in Central India also reported a higher prevalence of hypertension (47.09%) as compared to our study.

Regarding musculoskeletal problems, most of the elderly subjects complained of backache (26%). Osteoarthritis (20.7%) was the second major disorder in musculoskeletal problems in the study. Males were affected more than females. However, arthritis was reported by **Srivastava K et al.** (22.2%) and **Prakash R et al.** (14.8%) as a common musculoskeletal problem which differed from our study. In the present study, diseases of the oral cavity and salivary gland were present in 29.3% of the cases. Dental caries/broken teeth were noted in 16% of the elderly followed by stained teeth (10%). Similar findings were also noted **Shraddha et al.** However, **Sijan P et al.** observed toothache (42.2%) as a major problem.

In the present study, digestive system disorders were found in 24.7% of the elderly study population. Gastritis (12%) was the major digestive disorder followed by constipation (6.7%). **Mehta P et al.** showed a low prevalence of GI problems where constipation was the major problem which was contrary to our study. The high prevalence of digestive system problems in our study may be because of dietary habits and consumption of tobacco in this region. Diseases of the nervous system were found in 24% of the elderly study subjects and neuritis (16%) was a common problem. **Vandana Nikumb et al.** in their study showed a lower prevalence of diseases of the nervous system (1.3%) as compared to our study.

Hearing impairment (8%) was the common problem of the ear and mastoid involvement in our study. Hearing impairment was
more common in females (9.9%) as compared to males (6.3%). Vandana Nikumb et al.\textsuperscript{20} also noted hearing impairment in 10.6% of the study subjects. The prevalence of respiratory diseases was found in 8.7% of the aged. Sharma et al.\textsuperscript{11} also reported similar findings. A total of 2% prevalence of bronchial asthma was noted in the present study. Similarly, Kumar D et al.\textsuperscript{21} reported a 3.7% prevalence of asthma. Diseases of the genitourinary system were found in 8% of the elderly population, urinary tract infection (UTI) was more common in female respondents. Shraddha et al.\textsuperscript{14} also reported similar findings.

In our study, we observed that disorders of eyes and adnexa, metabolic system, circulatory system, digestive system, and nervous system were significantly more common among old old as compared to young old. The prevalence of morbidity significantly increased with increasing age was also reported by Shraddha et al.\textsuperscript{14} and Joshi et al.\textsuperscript{13}.

Table 4: Morbidity of elderly with system-wise break up based on Involvement of different systems

| Involvement of Different Systems (system-wise break up) | Male (n=79) (%) | Female (n=71) (%) | Total (n=150) (%) |
|--------------------------------------------------------|----------------|------------------|-------------------|
| Diseases of the Eyes and adnexa                         |                |                  |                   |
| Catarract                                               | 18 (22.8)      | 21 (29.6)        | 39 (26.0)         |
| Refractive error                                        | 14 (17.7)      | 9 (12.7)         | 23 (15.3)         |
| Others (Conjunctivitis, Pterygium etc.)                 | 3 (3.8)        | 4 (5.6)          | 7 (4.7)           |
| Endocrine, Nutritional, and Metabolic Diseases          |                |                  |                   |
| Diabetes mellitus                                       | 6 (7.6)        | 4 (5.6)          | 10 (6.7)          |
| Anemia                                                  | 17 (21.5)      | 16 (22.5)        | 33 (22.0)         |
| Others (Hyperuricemia, Thyroid disorder)                | 6 (7.6)        | 7 (9.9)          | 13 (8.7)          |
| Diseases of Circulatory System                          |                |                  |                   |
| Hypertension                                            | 21 (26.6)      | 17 (23.9)        | 38 (25.3)         |
| CAD/MI/Arrhythmias                                      | 8 (10.1)       | 5 (7.0)          | 13 (8.7)          |
| Others (Varicose vein)                                  | 0              | 1 (1.4)          | 1 (0.7)           |
| Diseases of Musculoskeletal System                      |                |                  |                   |
| Osteo-arthritis                                         | 7 (8.9)        | 4 (5.6)          | 11 (7.3)          |
| Backache                                                | 10 (12.7)      | 7 (9.9)          | 17 (11.3)         |
| Myalgia                                                 | 3 (3.8)        | 5 (7.0)          | 8 (5.3)           |
| Others (Osteoporosis, Rheumatoid arthritis, Septic arthritis and joint pain) | 5 (6.3) | 6 (8.5) | 11 (7.3) |
| Diseases of Oral Cavity                                 |                |                  |                   |
| Broken teeth/Caries                                     | 14 (17.7)      | 10 (14.1)        | 24 (16.0)         |
| Stained teeth                                           | 7 (8.9)        | 8 (11.3)         | 15 (10.0)         |
| Others (Artificial teeth, Oral Ulcer, No teeth)        | 3 (3.8)        | 2 (2.8)          | 5 (3.3)           |
| Diseases of Digestive System                            |                |                  |                   |
| Gastritis                                               | 10 (12.7)      | 8 (11.3)         | 18 (12.0)         |
| Constipation                                            | 6 (7.6)        | 4 (5.6)          | 10 (6.7)          |
| Others (Anorexia, GB or Renal Stone, Indigestion and Abdominal pain) | 4 (5.1) | 5 (7.0) | 9 (6.0) |
| Diseases of Nervous System                              |                |                  |                   |
| CVA                                                     | 4 (5.1)        | 2 (2.8)          | 6 (4.0)           |
| Neuritis                                                | 13 (16.5)      | 11 (15.5)        | 24 (16.0)         |
| Tremor                                                  | 2 (2.5)        | 2 (2.8)          | 4 (2.7)           |
| Other (Dementia)                                        | 1 (1.3)        | 1 (1.4)          | 2 (1.3)           |
| Diseases of Respiratory System                          |                |                  |                   |
| Bronchial asthma                                        | 2 (2.5)        | 1 (1.4)          | 3 (2.0)           |
| URTI                                                    | 1 (1.3)        | 2 (2.8)          | 3 (2.0)           |
| Others (COPD, Cor Pulmonale, Allergic Cough and Cold)   | 5 (6.3)        | 2 (2.8)          | 7 (4.7)           |
| Diseases of Genito-Urinary System                       |                |                  |                   |
| Urinary Tract Infections                                | 2 (2.5)        | 4 (5.6)          | 6 (4.0)           |
| Other (BPH, Hydrocele, Vaginal discharge)               | 6 (7.6)        | 1 (1.4)          | 7 (4.7)           |
| Diseases of Skin and Subcutaneous tissue.               |                |                  |                   |
| Allergy/Itching                                         | 2 (2.5)        | 1 (1.4)          | 3 (2.0)           |
| Boils/Carbuncle                                         | 2 (2.5)        | 0                | 2 (1.3)           |
| Hyperpigmentation                                       | 2 (2.5)        | 4 (5.6)          | 6 (4.0)           |
| Hypopigmentation                                        | 1 (1.3)        | 0                | 1 (0.7)           |
Conclusion

The urban population of the Barpeta district is unique as it is a very confined community and their culture, tradition, and belief pattern are different from other areas of the state. The present study showed most common morbidity in the elderly are diseases of the eyes and adnexa followed by endocrine, nutritional and metabolic, circulatory, oral cavity and salivary glands, digestive and nervous system. The prevalence of morbidity increases with increasing age. The capacity building of primary health care providers will help in the early detection of morbidities among the elderly and referring the needy elderly on time to the facilities will definitely help in active and healthy aging.

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.

References

1. WHO. Newsroom/Fact sheets/Detail/Ageing and health. Ageing and health. Available from: https://www.who.int/news-room/fact-sheets/detail/ageing-and-health. [Last accessed on 2018 Feb 05].
2. Census of India. Office of the Registrar General & Census Commissioner, India. 2011.
3. Situational analysis of the elderly in India; June 2011. Central Statistics Office, Government of India.
4. Srivastava K, Gupta SC, Kaushal SK, Chaturvedi M. Morbidity profile of elderly a cross sectional study of urban Agra. Indian J Community Health 2010;22:51-5. Available from: https://www.iapsmpuk.org/journal/index.php/IJCH/article/view/168.
5. National Programme for the Health Care of the Elderly (NPHCE): An approach towards active and healthy ageing. Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India. 2011. Available from: http://www.esocialsciences.org/Download/repecDownload.aspx?fname=Document1122011240.6148035.pdf&fcategory=Articles&AId=3538&ref=repec. [Last accessed on 2021 Oct 05].
6. Bhattacharjya H. Study of health problems and loneliness among the elderly in Chandigarh. Indian J Community Med 2007;32:239-307.
7. Soni S, Kumar M, Shukla M. A study on morbidity profile among elderly in a rural population of Katihar, Bihar. Indian J Res 2016;5:101-3.
8. Kapil U, Khandelwal R, Ramakrishnan L, Khenduja P, Gupta A, Pandey RM. Prevalence of hypertension, diabetes, and associated risk factors among geriatric population living in a high-altitude region of rural Uttarakhand, India. J Family Med Prim Care 2018;7:1527-36.
9. Ajay K, Khan AM. Health status of retired elderly across different age groups. J Indian Acad Geriatr 2007;3:364-9.
10. Das R, Sengupta B, Debnath A, Bhattacharjya H. Cataract and associated factors among OPD attendees in a teaching institute of North East India: A baseline observation. J Family Med Prim Care 2021;10:3223-7.
11. Sharma MK, Swami GM, Gulati R, Bhattacharjya H, Kumar D. Lifestyle and morbidity profile of geriatric population in urban area of Chandigarh. J Indian Acad Geriatr 2005;1:122-5.
12. Sithara BV, Girija DV. Health status of the elderly. IJG 2010;24:194-209.
13. Joshi SV, Sharma DM, Dhar HL. Study of neurological disorders with emphasis on stroke and risk factor in hospitalized elderly. IJG 2008;22:154-62.
14. Shraddha K, Prashanthra B, Prakash B. Study on morbidity pattern among elderly in urban population of Mysore, Karnataka, India. Int J Med Biomed Res 2012;1:215-23.
15. Singh VB, Nayak KC, Kala A, Tundwal V. Prevalence of hypertension in geriatric population: A community based study in North-west Rajasthan. IJG 2005;19:135-46.
16. Prajapati K, Abhishek K, Abhay M, Prashil J. Morbidity pattern in the elderly population attending geriatric OPD at the rural health centre of a tertiary care medical college hospital in Central India: A descriptive study. Int J Health Clin Res 2020;3:78-83.
17. Prakash R, Choudhary SK, Singh US. A study of morbidity pattern among geriatric population in an urban area of Udaipur, Rajasthan. Indian J Community Med 2004;29:35-40.
18. Sijan P, Rao A, Shenoy R, Priya H. Utilization of dental services in a field practice area in Mangalore, Karnataka. Indian J Community Med 2010;35:424-5.
19. Mehta P, Chauhan KB, Devi C. Study on food preferences and taste sensitivity of local elderly women residing in Baroda city and evaluation of selected food items for geriatric group. IJG 2007;21:20-9.
20. Nikumb V, Patankar F, Behera A. A study of morbidity profile among geriatric population in an urban area. Sch J App Med Sci 2015;3:1365-9.
21. Kumar D, Mittal PC, Sharma MK, Jaiswal R, Yadav P. Determinants of psycho-social health conditions of elderly in urban area of Allahabad. J Indian Acad Geriatr 2007;3:57-63.