

## MORBIDITY PROFILE OF GERIATRICS POPULATION IN KALABURAGI DISTRICT, KARNATAKA

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### Abstract

**Background:** Population of elderly in India is increasing over period of time. Geriatric population of India is 8.32% (Census 2011) and in Karnataka it is 8.9% (NFHS 4). Health needs of geriatric persons vary from general population. This research was an attempt to learn the morbidity profile of geriatric people that may oblige as a reference point information to help in planning the health amenities to elderly population.

### Objectives:

1. To assess the socio-demographic characteristics and health status of elderly populations (aged 60 years and above) in urban and rural settings.
2. To compare the prevalence, types, and frequency of morbidities of people residing in Urban & Rural field practice area of a Medical College in Kalaburagi district.

**Settings and Design:** A community based cross-sectional study was conducted amid elderly people in urban and rural areas of Kalaburagi district, Karnataka. People aged 60 years and above were included in the study and a sample size of 370 was calculated. **Methods and Material:** Predesigned, pretested and semi-structured questionnaire was used to gather statistics on preliminary sociodemographic characteristics and morbidity status of study participants. **Statistical analysis used:** Data was computed in excel sheets Microsoft 2013 and studied using SPSS version 25.0 for analysis utilizing appropriate statistical procedures and test. **Results:** Among 378 elderly people most common organ system affected was musculoskeletal (59.26%). Other commonly affected health systems were respiratory system (7.41%), digestive (3.44%), eye (1.59%), cardiovascular (1.85%), general and unspecified health problems (6.08%). Very few elderlies had neurological (2.65%) problems. **Conclusions:** The present study has highlighted a high prevalence of morbidity midst the geriatric age group and has identified the various existing health problems. Prevalence of Musculo-skeletal pain problems in geriatric age was 59.26% & respiratory problem was 7.41%. Prevalence of Musculo-skeletal disorder and respiratory disorder were equal in urban and rural. As a result, there is a need to additional fortify existing health care services for elderly population at various levels.

**Key-words:** Geriatrics, Morbidity, Elderly, Urban population, Rural population.

### **Introduction**

The old age or elderly being most vulnerable and high-risk groups forms the crucial part of any society. The demographic transition process of declining fertility, mortality and growing survival time period has led to increased older cohorts globally.<sup>1</sup> Swift epidemiological changes like urbanization, suburbanization, nuclearization of family, and occupation overload of people has increased the necessity for elderly care in India.<sup>2</sup>

The falling in fertility level, a steady increase in the lifespan has produced primary changes in the age composition of the population, which in turn leads to the aging populations increase.<sup>3</sup> When populations age increase quickly, governments are often caught improvised to face and alleviate the consequences; this has implications for the socio-economic of society. A main section of the burden of disease for the elderly derives from prevalent chronic diseases.<sup>4</sup> In 2050, 80% of older people will be living in small and middle-income countries. The population aged more than 60 years has tripled in last 50 years in India and will persistently increase in the near future. As per 2001 census, older people were 7.7% of the total population, which amplified to 8.14% in census 2011.<sup>5</sup>

This has led to increase need for elderly social care in India.<sup>6</sup>

### **Objectives**

1. To assess the socio-demographic characteristics and health status of elderly populations (aged 60 years and above) in urban and rural settings.
2. To compare the prevalence, types, and frequency of morbidities of people residing in Urban & Rural field practice area of a Medical College in Kalaburagi district.

### **Subjects and Methods:**

#### **Sources of Data**

The present study was carried out in the areas of urban health training centre at Rajapur and rural health training centre at Hebbal, attached to Department of Community medicine, MR Medical College, Kalaburagi.

**Study Design:** Cross sectional study

#### **Study Population**

#### **Inclusion criteria:**

1. Individual above the age 60 years of either sex who are permanent resident for 5 years of age in field practice area.
2. People who are willing to participate.

#### **Exclusion criteria:**

1. Elderly who are terminally ill.
2. Non cooperative and non-responsive.

#### **SAMPLE SIZE: 370**

#### **Sampling technique**

The total sample size was calculated to be 370 which will be equally divided into urban and rural field practice area for collection of elderly population 185 each selected area.

A house-to-house survey was conducted and the number of persons aged 60 years and above was interviewed. Systematically random sampling technique was used. (Every alternate person aged 60 years and above will be included into study) To avoid the error 10% extra sample cases were added to sample size.

#### **Collection of data:**

The study was ethically approved by ethical committee of Institution. After obtaining informed consent regarding, the nature, purpose and objectives of the study, the eligible

participants for the study. The person was interviewed using the pre- tested, pre validated proforma. Consisting of socio-demographic details, then general physical and systemic examination was conducted.

### Data Analysis

The data will be entered in Microsoft 2013 excel sheet and the will be analyzed using IBM SPSS version software 25.0. The data will be expressed in terms of frequency, mean and standard deviation and for qualitative data chi-square test and Fischer exact test will be applied and for quantitative data t-test will be applied to test the significance. A p-value of less than 0.05 will be considered as significant.

### Results

Table 1 depicts that the rural population is slightly younger on average (64.23 years) compared to the urban population (66.91 years). A higher proportion of the oldest age group (>80 years) is found in urban areas (69.57% urban vs 30.43% rural). Rural areas have a higher proportion of married individuals (59.86% of married participants are rural). Urban areas have a significantly higher proportion of widowed individuals (75.58% of widowed participants are urban). All unmarried participants in the study are from urban areas. While illiteracy is high in both areas, urban areas have a higher proportion of literate individuals (71.74% of literate participants are urban). Higher socioeconomic classes (Upper, Upper Middle, Lower Middle) are more prevalent in urban areas. Lower socioeconomic classes (Upper Lower, Lower) have a more balanced distribution between urban and rural areas, with a slight tilt towards rural areas. Nuclear and joint families are fairly evenly distributed between urban and rural areas. Three-generation families and broken families are more common in urban areas (62.86% and 77.78% respectively are urban).

These differences suggest that the urban population in this study tends to be slightly older, more educated, and of higher socioeconomic status compared to the rural population. Urban areas also show more diversity in family structures and marital statuses. The rural population, on the other hand, has a higher proportion of married individuals and tends to fall into lower socioeconomic categories.

Table 2 and 3 shows the prevalence of any morbidity in last one month. Overall majority i.e., 302 people out of 378 (79.89%) had suffered by any illness in last 1 month. Among them more were from rural area 170 (56.29%) compared to urban area 132 (43.71%). Rural elderly are more likely to have experienced illness in the last month compared to their urban counterparts. Rural populations are more likely to experience illness once (75.88% vs 52.27% in urban). Urban populations have a higher percentage of individuals experiencing illness twice or more often (47.73% vs 24.12% in rural).

Table 4 provides the information about the type of morbidity suffered by the elderly in last 1 month. The most Common Disorder was Musculo-Skeletal Pain: 224 cases (59.26% of total population) followed by Respiratory Disorder: 28 cases (7.41%) and Fever and related Symptoms: 23 cases (6.08%). When it comes to Urban vs. Rural Comparison some morbidities were equally Distributed like Musculo-Skeletal Pain, Respiratory Disorder, Skin Disorder, and Ear ache. The diseases that are higher in rural areas compared to rural areas are Fever and related Symptoms (60.87% rural), Gastro intestinal Disorder (53.85% rural), CNS Disorder (Giddiness) (80% rural), Ophthalmological Disorder (66.67% rural) and Injury by Inanimate object (75% rural). There was 1 case of Amputation of toe due to Gangrene and it was from rural area. The diseases that were higher in Urban Areas were Cardiovascular Disorders (57.14% urban) and Accident/Fall injury.

**Table 1: Socio-demographic and characteristics of study participants n=378**

| <b>Sociodemographic Variable</b>                    | <b>Frequency n (%)</b> | <b>Urban (n=185) n(%)</b> | <b>Rural (n=193) n(%)</b> |
|-----------------------------------------------------|------------------------|---------------------------|---------------------------|
| <b>Age groups (years)</b>                           |                        |                           |                           |
| 60-70                                               | 296(78.3%)             | 136(45.95%)               | 160(54.05%)               |
| 71-80                                               | 59(15.6%)              | 33(55.93%)                | 26(44.07%)                |
| >80                                                 | 23(6.1%)               | 16(69.57%)                | 7(30.43%)                 |
| Mean age                                            | 65.57 + 6.21           | 66.91 + 6.8               | 64.23 + 5.62              |
| <b>Gender</b>                                       |                        |                           |                           |
| Male                                                | 209(55.3%)             | 101(48.33%)               | 108(51.67%)               |
| Female                                              | 169(44.7%)             | 84(49.70%)                | 85(50.30%)                |
| <b>Marital Status</b>                               |                        |                           |                           |
| Married                                             | 284(75.1%)             | 114(40.14%)               | 170(59.86%)               |
| Unmarried                                           | 3(0.8%)                | 3(100.00%)                | 0(0.00%)                  |
| Widow                                               | 86(22.8%)              | 65(75.58%)                | 21(24.42%)                |
| Divorced                                            | 5(1.3%)                | 3(60.00%)                 | 2(40.00%)                 |
| <b>Educational status</b>                           |                        |                           |                           |
| Illiterate                                          | 332(87.8%)             | 152(45.78%)               | 180(54.22%)               |
| Literate                                            | 46(12.2%)              | 33(71.74%)                | 13(28.26%)                |
| <b>Socioeconomic status (modified Kuppaswamy's)</b> |                        |                           |                           |
| Upper                                               | 5(1.3%)                | 4(80.00%)                 | 1(20.00%)                 |
| Upper Middle                                        | 23(6.1%)               | 16(69.57%)                | 7(30.43%)                 |
| Lower Middle                                        | 30(7.9%)               | 22(73.33%)                | 8(26.67%)                 |
| Upper Lower                                         | 74(19.6%)              | 34(45.95%)                | 40(54.05%)                |
| Lower                                               | 246(65.1%)             | 109(44.31%)               | 137(55.69%)               |
| <b>Type of Family</b>                               |                        |                           |                           |
| Three generation                                    | 35(9.3%)               | 22(62.86%)                | 13(37.14%)                |
| Nuclear                                             | 190(50.3%)             | 83(43.68%)                | 107(56.32%)               |
| Joint                                               | 135(35.7%)             | 66(48.89%)                | 69(51.11%)                |
| Broken                                              | 18(4.8%)               | 14(77.78%)                | 4(22.22%)                 |

**Table 2: Magnitude of the Disease.**

| <b>Illness in last 1 month</b> | <b>Total</b> | <b>Urban</b> | <b>Rural</b> |
|--------------------------------|--------------|--------------|--------------|
| Yes                            | 302          | 132 (43.71%) | 170 (56.29%) |
| No                             | 76           | 53 (69.74)   | 23 (30.26 )  |

**Table 3: Number of time disease occurred and Visited Health care Facility.**

|              | <b>No. of time Illness in last 1 month</b> | <b>Frequency</b> | <b>Urban</b> | <b>Rural</b> |
|--------------|--------------------------------------------|------------------|--------------|--------------|
| If yes times | 1                                          | 198              | 69           | 129          |
|              | 2                                          | 93               | 55           | 39           |

|  |    |     |     |     |
|--|----|-----|-----|-----|
|  | ≥3 | 9   | 8   | 2   |
|  |    | 132 | 132 | 170 |

**Table 4: Morbid conditions suffered from during disease.**

| Disorder's                    | Area        |            |             |            | Total<br>n=378 |
|-------------------------------|-------------|------------|-------------|------------|----------------|
|                               | Urban n=185 |            | Rural n=193 |            |                |
|                               | No.         | Percentage | No.         | Percentage | No.            |
| Musculo-Skeletal Pain         | 112         | 50.00%     | 112         | 50.00%     | 224            |
| Respiratory Disorder          | 14          | 50.00%     | 14          | 50.00%     | 28             |
| Fever and related Symptoms    | 9           | 39.13%     | 14          | 60.87%     | 23             |
| Gastro intestinal Disorder    | 6           | 46.15%     | 7           | 53.85%     | 13             |
| CNS Disorder (Giddiness)      | 2           | 20.00%     | 8           | 80.00%     | 10             |
| Cardiovascular Disorder       | 4           | 57.14%     | 3           | 42.86%     | 7              |
| Ophthalmological Disorder     | 2           | 33.33%     | 4           | 66.67%     | 6              |
| Skin Disorder (Itching/ulcer) | 3           | 50.00%     | 3           | 50.00%     | 6              |
| Regular Check-up**            | 2           | 40.00%     | 3           | 60.00%     | 5              |
| Injury by Inanimate object    | 1           | 25.00%     | 3           | 75.00%     | 4              |
| Ear ache                      | 1           | 50.00%     | 1           | 50.00%     | 2              |
| Accident/Fall injury          | 2           | 100.00%    | 0           | -          | 2              |
| Amputation of toe (Gangrene)  | 0           | -          | 1           | 100.00%    | 1              |
| Nose Disorder (Epistaxis)     | 1           | 100.00%    | 0           | -          | 1              |

**\*\*Regular Check-up consist of Known case of filariasis, HTN, DM.**

\*Multiple Response Table. Morbidity pattern of study population: International Classification of Primary Care (Wonga International Classification Committee-2nd edition)

## Discussion

This study provides a comprehensive overview of the socio-demographic characteristics and health status of the elderly population in both urban and rural settings. The total sample size of 378 participants offers valuable insights into the challenges faced by the aging population in India.

## Age and Gender Distribution

In our study, 78.3% of participants were in the 60-70 year age group, 15.6% in the 71-80 year group, and 6.1% were 80 years and above. This decreasing proportion of elderly with increasing age is consistent with other studies, such as Goel PR *et al.*<sup>7</sup> (2003) at Meerut, Lena A *et al.*<sup>8</sup> (2009) at Udupi, and Surekha Kishore *et al.*<sup>9</sup> (2007) at Dehradun. The mean age was  $65.57 \pm 6.21$  years, with urban elderly ( $66.91 \pm 6.8$  years) being slightly older than rural elderly ( $64.23 \pm 5.62$  years). This could be due to migration of older individuals to urban areas for better healthcare or to live with children, or potentially lower life expectancy in rural areas.

Regarding gender, our study found 55.3% males and 44.7% females, which differs slightly from some other studies. For instance, Liss Maria Scaria *et al.*<sup>10</sup> (2016) at Kottayam, Kerala, reported 46.7% males and 53.3% females. This variation might be due to regional differences or sampling methods.

## Marital Status and Family Structure

We found that 75.1% of the elderly were married, 22.8% were widowed, 0.8% unmarried, and 1.3% divorced. These findings align closely with Karmakar N *et al.*<sup>11</sup> (2017)

at Tripura. Interestingly, our study revealed a higher proportion of widowed individuals in urban areas (75.58% of all widowed participants), which could reflect differences in life expectancy or migration patterns.

The family structure showed variations between urban and rural settings. While nuclear families were the most common (50.3%), we observed a higher prevalence of three-generation families (62.86%) and broken families (77.78%) in urban areas. This could reflect differences in life expectancy, cultural norms, or migration patterns (e.g., widowed individuals moving to cities to live with children).

### **Educational Status and Socioeconomic Conditions**

Our study revealed a high illiteracy rate of 87.8%, with a higher proportion in rural areas (54.22% of illiterates). This is notably higher than some other studies, such as Shraddha K *et al.*<sup>13</sup> (2013) at Mysore (50.4% illiteracy) and Anil Jacob *et al.*<sup>14</sup> (2006) at Tamil Nadu (78.7% illiteracy). The disparity between urban and rural literacy rates (71.74% of literate participants were urban) underscores the need for focused educational initiatives in rural areas.

Socioeconomically, 65.1% of participants belonged to the lower class, with a higher concentration in rural areas. The urban population showed a greater representation in higher socioeconomic classes, reflecting the urban-rural economic divide.

### **Health Status and Morbidity**

A significant finding was that 79.89% of participants reported experiencing illness in the last month, with a higher prevalence in rural areas (88.08%) compared to urban areas (71.35%). This health disparity aligns with the socioeconomic and educational differences noted earlier.

Musculoskeletal pain emerged as the most common morbidity, affecting 56.93% of the elderly. This finding is consistent with other studies, including the GOI & WHO multi-centric study and research by Lena *et al.*<sup>8</sup>, Goswami *et al.*<sup>15</sup>, and Sarkar *et al.*<sup>16</sup>, which reported arthritis prevalence ranging from 36.1% to 57.2%.

The frequency of illness episodes showed an interesting urban-rural divide. While rural elderly were more likely to report at least one illness episode (75.88% vs 52.27% in urban), urban elderly reported more frequent multiple illness episodes (47.73% reporting 2 or more episodes vs 24.12% in rural).

Other significant health issues included respiratory disorders (7.41%), fever-related symptoms (6.08%), and gastrointestinal disorders. Notably, some conditions showed marked urban-rural differences. For instance, CNS disorders (giddiness) were more prevalent in rural areas (80%), while cardiovascular disorders were more common in urban areas (57.14%).

Rural elderly are more likely to report at least one illness episode, urban elderly tend to report more frequent illness episodes. This could reflect true health differences, or differences in health awareness, reporting, and healthcare access between urban and rural populations.

### **Conclusion and Recommendation**

This study highlights significant disparities in the health and socioeconomic status of elderly populations in urban and rural settings.

- The prevalence of Musculo-skeletal pain problems in geriatric age was 59.26%. These orthopaedic problems were equal in urban & Rural Region but more common in female elderly.

- The percentage of respiratory problem was 7.41%. 2<sup>nd</sup> common illness. This was equal in urban and rural area.
- The high prevalence of musculoskeletal issues, coupled with the urban-rural differences in health status and healthcare utilization, underscores the need for targeted interventions.
- The findings suggest a need for improved healthcare access in rural areas, specialized geriatric care focusing on prevalent issues like musculoskeletal pain, and socioeconomic support systems for the elderly, particularly in rural regions.
- Regular screening program for detecting chronic morbidities at the earliest should be carried out.
- Geriatric care should become an integral part of the primary health care delivery system.
- PHCs can play an important role in providing close supervision & follow up of geriatric patients with chronic diseases.

#### **Declaration of patient consent**

The authors certify that they have got all relevant patient consent forms. In the form the patient(s) has/have agreed to accord for his/her/their descriptions and other clinical data to be reported in the journal. The persons understood that their names and initials will not be published and due efforts will be made to secrete their individuality, but secrecy cannot be guaranteed.

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Nil.

#### **Conflicts of interest**

There are no conflicts of interest.

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