

## Assessment of socio-demographic parameters and morbidity profile of the rural geriatric population of Karnataka

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### Abstract

The present study was intended to study the social demographic factors, quality of life, and morbidity pattern of elderly residing in rural areas of Karnataka. This was a community based cross-sectional study and involved 441 subjects. The study subjects consist of population aged 60 years and above residing in the study area. This study involved 441 subjects, out of which 244 (55.3%) were males and 197 (44.7%) were females, with a mean age of the study subjects was  $69.2 \pm 6.9$  years. The highest density of study subjects were from the age group of 65-69 years and the second-highest from the age group of 60-64 years. 71.4% of the elderly were married and had a living spouse and 27.2% were widowed. And 1.4% of the subjects were separated or divorced. More than half of the study subjects were illiterate

(57.1%) and 36.7% of the subjects had done schooling. Almost half of the study subjects (49.4%) were doing agriculture related work and 34.5% of the female subjects were housewives. Most of the elderly had less information about the total family income. 22.6% of the subjects admitted that they don't have any information about the family's total income. Cataract was the most prevalent morbidity, accounting for 56.5% and the second most prevalent was anemia accounted for 55.1%. 39.9% of the subjects had complaints of osteoarthritis (OA) of knee.

**Keywords:** Geriatric population, elderly population, morbidity profile, socio-demographic parameters.

## Introduction

Ageing affects every aspect of the human body bringing many changes in the physical, psychological, hormonal and social conditions. These changes are known to affect the quality of life of the elderly. There will be changes in the body morphology, reduced ability of functioning of body organs, change in interests towards day to day activities, attitude, behaviour and lifestyles. Health problems will start to accompany as the age progresses. These changes are expected to affect the quality of life of the elderly.<sup>1</sup>

In Karnataka, the estimated elderly population was 3,837,000 in 2001 and projected to be 9,681,000 by 2026 (Census of India, 2001).<sup>2</sup> This increasing number of elderly has a great demand on the health services and social security measures. At present, ageing has become a social problem as the socioeconomic shifts are affecting the family to continue with the care of their age. Traditionally our Indian families had always borne the responsibility of looking after the aged but the changing times and industrialization has threatened this yesteryear culture. As a result family care of the elderly becomes more and more difficult and is leaving the aged to feel lonely, dependent and marginalized.<sup>3</sup>

Chronic morbid conditions that generally accompany the elderly are associated with an increased prevalence of social and psychological disturbance. These problems in turn can aid in precipitating, exacerbating, and aggravating the physical illness leading to a vicious cycle. So the factors such as health status, the extent of disability, perceptions about one's illness, availability of familial support, social security, medical care, and psychological well-being are important determinants of the quality of life of the elderly.

Recently there has been a change in the approach towards public health problems. Along with quantitative measurements of a problem, the qualitative assessment will give a better picture of a situation.

Thus, the current statistics on the elderly in India gives a new dimension for the medical, social and economic problems that might explode if a timely initiative is not taken by the policymakers, in this direction. There is a dearth need to highlight the medical and psychosocial problems faced by the aged population in India. Strategies for bringing about an overall improvement also need to be explored. In Karnataka, very few studies have been done to date to reveal the health status of the elderly population. This study is an attempt to unravel the variables

affecting the old age people residing in the rural areas of Karnataka. This may serve as baseline data and help in future planning of the services for this section of the elderly population.

#### **Materials and methods:**

This was a community based cross-sectional study. The study was conducted from August 2017 to July 2019 in 11 neighbouring villages utilizing the health services of the rural field practice area, Department of Community Medicine, Srinivas Institute of medical sciences. The study subjects consist of population aged 60 years and above residing in the study area.

**Inclusion criteria:** Individuals who were aged 60 and above residing in the study area and willing to give consent to be a part of this study.

**Exclusion criteria:** The study excluded those individuals who were:

- a) Individuals who are aged around 60 but age could not be validated that the age is above 60.
- b) Individuals who didn't want to reveal their details about their health.
- c) Families who refused to let their elderly family members be a part of the study.

#### **Results**

Among the total subjects, the age category of 65 to 69 had the highest density of subjects with 161 (36.5%) members. The category of 60 to 64 years had 117 (26.5%) members. Category of 70 to 74 years had 52 (11.8%) subjects, 75 to 79 years had 57 (12.9%) members and 80 years and above category had 54 (12.2%) members (Table-1).

#### **Marital status**

In the present study all the subjects were married and the majority of subjects were having a living spouse. This accounted to 205 (46.5%) males and 110 (24.9%) females, which accounted to 71.4%. The category of widowed subjects accounted to 33 (7.5%) males and 87 (19.7%) females. This may be due to the prevalent practice of men getting married to women of relatively much lower age groups, especially in the olden days. The category of divorced and separated elderly individuals accounted to 6 (1.4%) males and none among female subjects (Table-2).

#### **Occupations**

As the study area was a rural field practice area, the most common occupation was agriculture. As the subjects were elderly, they couldn't take part actively in all agricultural activities and their involvement was very limited. This

was found in the rest of the occupations even. 190 (43%) of the male subjects and 28 (6.3%) females did agriculture related jobs mainly, accounting to (49.4%) which constituted the biggest group.

Among female subjects, 152 (34.5%) predominantly did household activities, which comprised the second highest group among the subjects. The number of elderly who were willing to

work but couldn't and were labeled as unemployed accounted for 10 (2.3%) females and none from males. Males who did unskilled works were 14 (3.2%) and females were 3 (1.7%). Semiskilled works were done by 24 (5.4%) males and 2 (0.5%) females. Skilled jobs were done by 7 (1.6%) males and professional jobs by 5 (1.1%) males. Other types of jobs were done by 4 (0.9%) males and 2 (0.5%) females.

**Table 1: Age and sex distribution of the study subjects. (n =441)**

Age in years	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
60- 64	63	14.3	54	12.2	117	26.5
65-69	99	22.4	62	14.1	161	36.5
70-74	32	7.3	20	4.5	52	11.8
75-79	27	6.1	30	6.8	57	12.9
80+	23	5.2	31	7.0	54	12.2
Total	244	55.3	197	44.7	441	100

**Table 2: Marital status of the study subjects**

Marital status	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Married	205	46.5	110	24.9	315	71.4
Separated/Divorced	6	1.4	0	0	6	1.4
Widowed	33	7.5	87	19.7	120	27.2
Total	244	55.3	197	44.7	441	100

## Socio economic status

**Table 3: Distribution of socio-economic status among the study subjects**

Socio economic status	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
<b>Class I</b>	3	0.7	0	0	3	0.7
<b>Class II</b>	8	1.8	10	2.3	18	4.1
<b>Class III</b>	47	10.7	13	2.9	60	13.6
<b>Class IV</b>	133	30.2	98	22.2	231	52.4
<b>Class V</b>	25	5.7	4	0.9	29	6.6
<b>No information</b>	28	6.3	72	16.3	100	22.6
<b>Total</b>	243	55.3	197	44.7	441	100

To assess the socio-economic status of the elderly, modified BG Prasad classification was used. As the subjects were elderly, they were least informed about the individual earnings of the other family members. 22.6% of the subjects admitted that they didn't have any idea about the earnings of the family members.

The majority of the study subjects belonged to Class IV status. It comprised of 28 (6.3%) males and 98 (22.2%) females, adding it to 52%. 3(0.7%) males belonged to Class I, 8(1.8%)males and 10 (2.3%) females belonged to Class II. 47(10.7%) males and 13(2.9%) females belonged to Class III. 25(5.7%) males and 4 (0.9%) females belonged to Class V.

As the study subjects were from a rural area, predominantly with agricultural dependency, their socio-economic condition was more towards Class IV (Table-3).

### **Status of elderly in the family**

Subjects were assessed for their position in the family with regards to relationships with their family members, how they were treated by them. The maximum number of the subjects were loved and respected by the family members. Out of them 106 (24%) were males and 121 (27.4%) were females accounting for 51.5%. 3 (0.7%) males and 15 (3.4%) females felt rejected by the family. 1 (0.2%) male and 20 (4.5%) females felt they were still with the family

but unwanted by their family members. 33 (7.5%) male subjects and 24 (5.4%) female subjects felt they were just tolerated when it came to relations. Then the number of elderly who were still heading and controlling the family unit comprised of 96 (21.8%) males and 15 (3.4%) females. It might be due to the majority of this population was below 69 years and many must have continued to head the family.

However, 5 (1.1%) males and 2 (0.5%) females felt they had no family at all. It was observed that some subjects, who had strained relationships with living family members also preferred to state that they had no family.

### **Morbidity profile**

The last objective of the study was to assess the morbidity profile of the study subjects, which was mainly assessed by history and clinical examination to arrive at the provisional diagnosis. As a part of history taking, subjects were assessed for the presence of symptoms according to the physiological system. Many subjects had multiple system involvement. For each system, if the subject had at least one symptom affecting on a long run, then they are represented in the table as 'Yes' in the rows or else as 'No.'

10.7% out of 441 subjects had at least one symptom of morbidities related

to the Central nervous system. The most common symptom was forgetfulness, 11.8% of the total subjects had complaints related to the Respiratory system like cough and expectoration, 4.8% had complaints related to the Cardiovascular system and the most common complaints were chest pain and exertional breathlessness, 17.2% had at least one symptom related to Gastrointestinal system like gastritis, 7.7% of the total subjects complained related to Genito-urinary system. Among males, benign prostatic hypertrophy related symptoms were most common (Table-4).

The maximum number of subjects had complaints of the Musculoskeletal system. 96 male subjects and 107 female subjects had at least one complaint about the same, which accounted for a total of 203 (46%) subjects in total. The most common complaint was knee pain, body ache and backache were the common complaints.

2.9% had nonspecific morbidity complaints and there was no statistically significant association. The non-specific complaints included symptoms like non-healing ulcer, itching, fever, or swelling. The second highest complaints were Vision related. Common complaints included diminution of vision, either for distant vision or near vision or for both. 118 male and 79 female elderly subjects

had complaints related to their vision, which accounted for 197 (44.7%) subjects. However, there was no statistically significant association.

17.7% had complaints related to hearing like reduced hearing or total

deafness, 14.5% of total subjects had dental related complaints. The most common dental complaint was troubling loosened teeth and pain. These findings can be compared with other studies done in India.

**Table 4: Cross table showing the association between clinical symptoms with gender**

Symptom	Gender		Total	Percent	$\chi^2$	p value
	Male	Female				
CNS	NO	214	180	394	10.7%	1.538
	YES	30	17	47		
RS	NO	224	165	389	11.8%	6.786
	YES	20	32	52		
CVS	NO	237	183	420	4.8%	4.316
	YES	7	14	21		
GIS	NO	207	158	365	17.2%	1.640
	YES	37	39	76		
GUS	NO	217	190	407	7.7%	8.645
	YES	27	7	34		
MSS	NO	148	90	238	46%	9.833
	YES	96	107	203		
Non-specific Complaints	NO	234	194	428	2.9%	2.527
	YES	10	3	13		
Visual Complaints	NO	126	118	244	44.7%	3.008
	YES	118	79	197		
Hearing Complaints	NO	195	168	363	17.7%	2.152
	YES	49	29	78		
Dental Complaints	NO	210	167	377	14.5%	0.147
	YES	34	30	64		

## Discussion

63% of the study subjects were from the age group of 60 to 69 years in the present study. 26.5% belonged to 60-64 years, 36.5% were 65-69 years of age. In a study done by Quadri S *et al*, at Ambala, Haryana, 28.2% of subjects belonged to both the categories of 60 to 64 years and 65 to 69 years. The category of 70 to 74 years had 22.2% subjects with 75 years and the above category had 21.4% subjects.<sup>4</sup>

In a study done at Shimoga, Karnataka, by Kumar NP *et al*, in the year 2012-13 to study the morbidity profile of elderly had 39.6% males and 37.2% females in the age category of 60 to 70 years, 20.8% males and 31% females in the age category of 71 to 80 years, 20.8% males and 28% females in the age category of 81 to 90 years and above 90 years category had 18.8% males and 7% females.<sup>5</sup>

In a study done by Nikumb V *et al*, in Mumbai, Maharashtra, in the year 2013 to study the morbidity profile, 70% of the subjects belonged to 60 to 69 years age group.<sup>6</sup>

71.4% were married, 1.4% were divorced/separated, 27.2% were widowers in the present study. Contrasting findings were observed in a study at Udipi, Karnataka, by Lena A *et al*, in the year

2003, who studied the health and social problems of the elderly. The elderly who were married and had a living spouse accounted for only 47.4% and 43.66% of them were widowed. Those who were separated accounted for 6.6% and singles accounted to 2.3% of the study subjects.<sup>7</sup>

In a study done by Kumar R at Perambalur, Tamil Nadu, in the year 2013, to assess the morbidity of the elderly, 97.2% of the elderly subjects were married and living with spouses.<sup>8</sup>

Occupational status in the present study results are contrast to a study done by Patle RA at Maharashtra, to study the health seeking behavior of elderly had 29.2% males and 81.8% females as unemployed and 59.3% males and 13.3% females were employed. The probable reason for this is the criteria followed to designate the occupational status might be different in both the studies as in the present study, even those who are not actively participating in the works regularly were also listed under employed category<sup>9</sup>.

In a study done by Yerpude YN *et al*, in the year 2011 at Andhra Pradesh, to evaluate the health problems and health seeking behavior of the elderly, only 20.5% were still working and 79.5% were not working.<sup>10</sup>

In a study done at Kurnool district of Andhra Pradesh, by Subhaprada S C, to



study the morbidity pattern of elderly found that among the study subjects, 67.35% were employed and 32.65% were unemployed.<sup>11</sup>

A study done by Manda PK *et al*, in rural West Bengal, to study the morbidity and disability among elderly, which comprised 3.8% of subjects belonging to Class I, 7.3% belonging to Class II, 34.9% from Class III group, 26.8% from Class IV group and 27.2% from Class V group of Modified BG Prasad classification.<sup>12</sup>

In a study done by Hakmaosa A *et al*, the elderly subjects were mainly from Class IV socio-economic status, constituting 48.2%, which was similar to our studies. There were none from Class I. Class II comprised of 8.5%, Class III comprised of 40.5% and Class V had 2.8% of the population<sup>13</sup>

A study was done by Aras R *et al*, in Mangalore, Karnataka in the year 2011 to study the social aspects of geriatrics found that 96.3% of the subjects had a good relationship with their children.<sup>14</sup>

In a study done by Barman SK *et al*, at Kishanganj, Bihar in the year 2013, to study the morbidity profile of the elderly found that 31.25% of the population felt neglected by the family members and 26.88% of the subjects felt loneliness.<sup>15</sup>

In a study done at Nanded, Maharashtra, by Ubaidullah M *et al*, to study the medical and psychosocial profile of the elderly, 29.94% of the subjects felt they were treated respectfully in the family. 47.74% of the subjects felt they were treated in a normal way. 22.32% of them felt they were neglected.<sup>16</sup>

In a study done by Paul SS *et al*, to study the health of the geriatric population in northern Tamil Nadu, 48.8% of the population had complaints of joint pain, 33.2% of them complained of poor vision, 9.7% of them complained about poor hearing. These results matched the results of the present study.<sup>17</sup>

In a study done by Purty AJ *et al*, to study the morbidity pattern in rural elderly, in the year 2002-03 at rural Tamil Nadu, 43.4% of the elderly had complaints of joint pain, 42.1% of them had oral cavity morbidities, 24.6% of them had a refractory error, 11.3% had a chronic cough and 5.9% had asthma symptoms and 5.6% of the subjects had genitourinary system related symptoms.<sup>18</sup>

In a study done by Subhapradha SC, 44% of the subjects had musculoskeletal system symptoms, 10.2% of the subjects had morbidities of special senses (eye, ear), 18.36% of the subjects had morbidities of the nervous system, and 38.78% of the subjects had morbidities of

cardiovascular & respiratory system. 6.2% of the subjects had morbidities of the gastrointestinal system. 8.6% of the subjects had morbidities of genitourinary system.<sup>11</sup>

In a study done by Srinivas PJ, to study the morbidity pattern of elderly at Vishakapatnam, Andhra Pradesh, 0.16% of rural elderly had symptoms of the nervous system, 27% had symptoms of morbidities of the eye, 8% had morbidities related to the ear, 245 had morbidities related to the circulatory system, 4% had respiratory system morbidities, 2% had digestive system morbidities and 38% had musculo-skeletal system morbidities.<sup>19</sup>

### Conclusion

The highest number of morbidity symptoms were reported of Musculoskeletal system (46%) and the second highest was about visual disturbances. Among the provisional diagnosis, Cataract was present in 56.5% of subjects, Anemia was present in 55.1% of subjects, Hypertension in 16.6%, Diabetes mellitus in 5.9%, COPD in 11.3%, Gastritis in 9.8%, BPH in 11.4% males, Osteoarthritis of the knee in 39.9%, Dementia in 29.9%, Senile deafness in 17.08% of the study subjects

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