



**ORIGINAL RESEARCH PAPER**

**Medicine**

**Study of clinical profile of old and oldest elderly individuals attending tertiary care hospital**

**KEY WORDS:** oldest, elderly, geriatrics, internal medicine, clinical profile

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**ABSTRACT**

Old age constitutes one of the major challenges confronted by the societies in the present century .The growing proportion of the aged and their needs were under-looked in India.

There is a real dearth of data on many areas relating to the elderly in the fields of health and morbidity, economic activity, living arrangements, domestic abuse and the pattern of care giving of this segment in general and in India in particular. The objective of this study is to look into the clinical profile of old and oldest elderly individuals.

**METHOD:** This is a prospective longitudinal observational study during the period October 2014 to August 2016. The ethical clearance was obtained from the Institutional ethical committee of JSS Medical College . 200 elderly patients 75 years and above of both sexes coming to geriatric clinic and Medicine OPD including those who were admitted during the study period October 2014 to August 2016 were enrolled in the study. Among geriatric age group, Old elderly defined as >75 years and above and oldest elderly defined as 85 years and above. A comprehensive geriatric assessment was done to identify and evaluate geriatric giants like incontinence, instability (fall risk), cognitive impairment and immobility , visual and hearing impairment using appropriate tools and scales which were not assessed or not intervened . They were also assessed for all major comorbid conditions like diabetes mellitus, hypertension, COPD and macrovascular diseases and detailed nutritional assessment was also done.

Intervention was done wherever possible and these patients were followed up for a minimum period of 6 months in geriatric clinic once a week.

The summary statistics are done by measuring mean, median, standard deviation and proportions. The inferential statistics are done using Independent t test, Pearson correlation, chi-square test, paired t-test and McNemar test. P<0.05 is considered as significant. SPSS 21.0 software is used for all calculations. Graphical representations are done using Microsoft Excel.

**CONCLUSION:**

1. Comprehensive Geriatric Assessment and Rehabilitation of older people is active process involving a co-ordinated multidisciplinary approach.
2. The process of assessment for hospital geriatric inpatients should commence at admission and continue beyond discharge.
3. Half of the elderly patients had chronic diseases like diabetes mellitus, hypertension, COPD, and macrovascular diseases.
4. 25% of the elderly patients had atleast one of the geriatric giants- instability, immobility, incontinence or intellectual decline.
5. Anemia was present in 41.5% patients which reflected poor nutritional status in old individuals.
6. 13.5% individuals had depression and was more in females due to death of spouse , neglect by care givers or emotional disconnect.
7. 61% of the elderly had osteoarthritis which correlates with national average.
8. Intervention resulted in better outcome in health status and function of patients and highlighted the importance of comprehensive geriatric assessment.

**Introduction**

Old age constitutes one of the major challenges confronted by the societies in the present century .The growing proportion of the aged and their needs were under-looked in India. The elderly account for 7% of the total population, of which two-thirds live in villages and nearly half of them in poor conditions.<sup>1</sup> By 2050, more than one in five people will be aged over 60 and the proportion of the aged above 70 and 80 would witness a five-fold increase by 2026.

The theme of the International day of older persons for 2016 was "Take a stand against ageism". According to Census of India 2001, 72.22% of elderly are in rural sector while 27% are in the urban sector. Some studies have revealed that 90% of elders in India belong to unorganised sector and are unable to access health and social services.<sup>2</sup>

There is a real dearth of data on many areas relating to the elderly in the fields of health and morbidity, economic activity, living arrangements, domestic abuse and the pattern of care giving of this segment in general and in India in particular.

Over a period of 2 years, we conducted a study under Department of General Medicine and Geriatric clinic of a tertiary care teaching hospital at Mysore, Karnataka state , South India. We set out with objective to study the clinical profile of old and oldest elderly individuals. Secondly to identify depression, nutritional status and fall risk on their quality of life and to assess improvement in quality of life after appropriate management of nutrition deficiency, fall risk, depression, incontinence and visual problems was taken.

**Materials and Methods**

This is a prospective longitudinal observational study during the period October 2014 to August 2016. The ethical clearance was obtained from the Institutional ethical committee of JSS Medical College . 200 elderly patients 75 years and above of both sexes coming to geriatric clinic and Medicine OPD including those who were admitted during the study period October 2014 to August 2016 were enrolled in the study. Among geriatric age group, Old elderly defined as >75 years and above and oldest elderly defined as 85 years and above. A comprehensive geriatric assessment was done to identify and evaluate geriatric giants like incontinence,

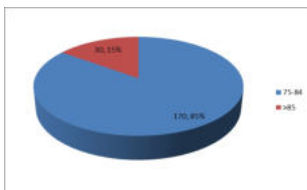
instability (fall risk), cognitive impairment and immobility, visual and hearing impairment using appropriate tools and scales which were not assessed or not intervened. They were also assessed for all major comorbid conditions like diabetes mellitus, hypertension, COPD and macrovascular diseases and detailed nutritional assessment was also done.

Intervention was done wherever possible and these patients were followed up for a minimum period of 6 months in geriatric clinic once a week. Some of the interventions were Nutritional deficiency assessment, correction and counselling. Psychiatrist intervention for depression or psychiatric disorders. Vision correction, reviewing drugs which cause postural hypotension, physiotherapy, teaching appropriate aerobic and strength training, gait retraining which could be done at home daily was taught by involving physiotherapist patients with high fall risk. Medical management for incontinence and if required referral to specialist was also considered. Social worker was involved to address social issues in geriatric people.

The summary statistics are done by measuring mean, median, standard deviation and proportions. The inferential statistics are done using Independent t test, Pearson correlation, chi-square test, paired t-test and McNemar test. P<0.05 is considered as significant. SPSS 21.0 software is used for all calculations. Graphical representations are done using Microsoft Excel.

**Results:**

Of the 200 patients, the mean age was 78 years. Maximum was 105 and minimum was 75 and inter quartile range between 75-80 years with standard deviation of 4.86. 85% (170) were in age group of 75- 84 yrs and 15% (30) were >85 yrs. 48.5% (97) were females and 51.5% (103) were males. 47% (94) were agriculturists, 7% (14) were retired government officials, 45.5% (91) were homemakers. 86% (172) were financially dependent 13.5% (27) were independent and 0.5% (1) were partially dependent. 88% (176) were vegetarian and 12% (24) consumed mixed diet. 82.5% (165) had normal BMI and 15% (30) undernourished and 2.5% (5) were obese.

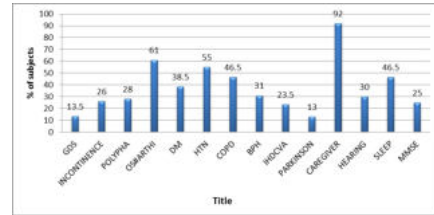


**Graph 1. Showing age distribution among study subjects**

Of the 200 patients enrolled in study, 13.5% (27) suffered from depression of which 15.5% (15) were females and 11.7% (12) were males, 26% (52) had incontinence of which 12.4% (12) were females and 38.8% (40) were males and this was statistically significant, 28% (56) had polypharmacy of which 29.9% (29) were females and 25.2% (26) were males. 61% (122) had osteoarthritis of which 59.8% (58) were females and 62.1% (64) were males and this was statistically significant, 38.5% (77) had diabetes mellitus of which 42.3% (41) were females and 35% (36) were males. 55% (110) had hypertension of which 42.3% (41) were females and 35% (36) were males, 46.5% (93) had COPD of which 16.5% (16) were females and 74.8% (77) were males, 31% (62) had BPH, 23.5% (47) had IHD/CVA 22.7% (22) were females and 24.3% (25) were males, 13% (26) had Parkinson disease of which 13.4% (13) were females and 12.6% (13) were males, 16 patients no caregivers of which 12.4% (12) were in age group of 75-84 years and 3.9% (4) were > 85 years.

30% (60) had hearing problems of which 29.2% (28) were females and 30.8% (32) were males, 53.5% (107) had sleep problems of which 46.9% (45) were females and 59.6% (62) were males. 25% (50) had abnormal MMSE of which 24.7% (24) were females and 25.2% (26) were males. 69.5% (139) had reduced vision of which 70.1% (68) were females and 68.9% (71)

were males; 12.5% (25) had normal vision and 18% (36) had normal vision with assistance of which 16.5% (16) were females and 19.4% (20) were males and was statistically significant. 26% (52) had high fall risk of which 26.8% (26) were females and 25.2% (26) were males; 57% (114) had low risk of which 58.8% (57) were females and 55.3% (57) were males; 17% (34) had moderate risk of fall of which 14.4% (14) were females and 19.4% (20) were males and was statistically significant. 45% (90) had no pallor, 41.5% (83) had mild pallor of which 42.3% (41) were females and 40.8% (42) were males; 13.5% (27) had moderate pallor of which 13.4% (13) were females and 13.6% (14) were males. With respect to Barthel's index of daily living, mean score was 14.19, median of 15. The maximum score being 20 and minimum of 2 with a range between 17 and 12 with a standard deviation of 3.66. The mean Barthel score in females was 13.9 and 14.4 in males.



**Graph 7. Showing co-morbidities and geriatric giants among study subjects**

In the age group 75-84 yrs, 84.7% (144) were financially fully dependent 14.7% (25) were independent and 6% (1) were partially dependent. Above 85 yrs, 93.3% (28) were financially fully dependent, 6.7% (2) were independent. In 75-84 yrs age group, mean BMI was 20.32 and mean Barthel index was 14.46 which was statistically significant. In patients >85 yrs mean BMI was 18.77 and mean Barthel index was 12.7 which were statistically significant.

The health issues noted in the age group of 75-84 years were as follows: 20.6% (35) had incontinence. 12.9% (22) had depression. 28.8% (49) had polypharmacy. 55.9% (95) had osteoarthritis. 38.8% (66) had diabetes mellitus. 54.7% (93) had hypertension. 44.1% (75) had COPD. 27.1% (46) males had BPH. 24.1% (41) had IHD/CVA 6.5% (11) had Parkinson disease 6.5% (11) had no caregivers 39.4% (67) had mild pallor while 12.4% (21) had moderate pallor. 67% (114) had reduced vision while 14.1% (24) had normal vision with assistance. 24.7% (18) had reduced hearing. 50.6% (21) had sleep problems. 20.6% (35) had abnormal MMSE. 20.6% (35) had high fall risk, 62.9% (107) had moderate risk of fall and 16.5% (28) had low risk of fall<sup>14</sup>.

The health issues noted in the patients >85 years were as follows: 56.7% (17) had incontinence 16.7% (5) had depression 20% (6) had polypharmacy 90% (27) had osteoarthritis 36.7% (11) had diabetes mellitus 56.7% (17) had hypertension 60% (18) had COPD 53.3% (16) had BPH 20% (6) had IHD/CVA 16.7% (5) had no caregivers. 53.3% (16) had mild pallor while 20% (6) had moderate pallor. 83.3% (25) had reduced vision while 13.3% (4) had normal vision with assistance. 60% (42) had reduced hearing. 70% (86) had sleep problems. 50% (15) had abnormal MMSE. 56.6% (17) had high fall risk, 23.3% (7) had moderate risk of fall and 20% (6) had low risk of fall.

**Post- Intervention:**

30 patients who were undernourished with low BMI (17.67) were assessed by mininutritional assessment. After nutritional counselling, these patients had BMI (18.8) in normal range and was clinically significant.

13.5% patients with depression found significant relief post CBT/medical approach with GDS scores < 5 gradually during follow up. In a study by Kirubakaran C and Kokilavani N<sup>3</sup>, 300 patients were selected by simple random sampling. The results of the study showed that in pretest, 62% of them had mild level of depression, 38% had moderate level of depression. In post-test,

34.7% of them were rated to be normal, 62.7% had mild level of depression, 2.7% had moderate level of depression after receiving cognitive behavioural therapy, and there was significant reduction in depression. Tellez Zento et al.<sup>8,9</sup> in a study conducted by Goyal A, Kajal KS for Prevalence of depression in elderly population in the southern part of Punjab, severe depressive symptoms were found to be 17% elderly while 60% were mildly depressed which compares favourably with our study

In our study all patients with mild anemia had improved Hb% levels and 37% with moderate anemia had improved Hb% following appropriate correction of type of anemia with pharmacological and non-pharmacological management. Few patients experienced improvement in their appetite, generalised weakness and sense of well being. In a study by Amit Bhasin and Medha Y Rao 30% had IDA, 3% had B12 deficiency and 2% had folate deficiency<sup>4</sup>. In another study by entire prevalence of anaemia among the surveyed subjects was 36.4% (47/129) and it was 35.4% and 37.5% among male and female respectively<sup>10,12</sup>.

There was reduction in falls of high risk from 26% to 9.6% following management of associated contributory factors to fall. This was assessed objectively by Tinetti balance and gait assessment scale with scores being in low fall risk range. Vision correction, reviewing drugs which cause postural hypotension, physiotherapy, teaching appropriate aerobic and strength training, gait retraining which could be done at home daily and nutritional advice were given to reduce risk of fall.<sup>5,11</sup>

69.5% patients had vision problems like refractive errors, uncorrected presbyopia, and cataract which were addressed with spectacle prescription, advised cataract extraction electively and supportive measures. Uncorrected refractive errors are the easiest of the public eye health challenges that can be addressed, especially in elderly people in residential care. It is cost effective and the benefit is immediate which in turn can vastly improve the quality of life of these people.<sup>6,13</sup>

### Discussion

The geriatric assessment of 200 elderly patients in this study identified problems related to aging which is not routinely evaluated and socio-economic issues in accessing health care. These problems were related to defects in vision, hearing, bowel and bladder control, the activities of daily living, leg mobility, depression and cognitive function.<sup>16</sup> Most of these age-related problems were overlooked or not detected as quite often the patient does not complain of these problems to the treating physician, unless specifically asked for.<sup>19,20</sup>

There was reduction in falls of high risk from 26% to 9.6% following management of associated contributory factors to fall. Vision correction, reviewing drugs which cause postural hypotension, physiotherapy, teaching appropriate aerobic and strength training, gait retraining which could be done at home daily and nutritional advice were given to reduce risk of fall<sup>15</sup>. In a study by Kiran et al, an interdisciplinary approach to this high-risk population and Multifaceted programs, including exercise, vision correction, environmental modification and review and adjustment of medication can considerably decrease the risk of further falls and limit functional impairment which correlates with our study.<sup>7</sup>

In our study 13.5% had depression overall with higher incidence in those >85 years. The study found that depression was more in females than males (15.5% Vs 11.5%). 26% had incontinence with higher incidence of 56% in age group >85 years as compared to 20.6% in 75-84 years group. Half of the elderly patients had chronic diseases like diabetes mellitus, hypertension, COPD, and macrovascular diseases. 25% of the elderly patients had at least one of the geriatric giants- instability, immobility, incontinence or intellectual decline.<sup>17,18</sup> Anemia was present in 41.5% patients which reflected poor nutritional status in old individuals. 13.5% individuals had depression and was more in females due to death of spouse, neglect by care givers or emotional disconnect. 61% of

the elderly had osteoarthritis which correlates with national average. Intervention resulted in better outcome in health status and function of patients and highlighted the importance of comprehensive geriatric assessment.

### Limitations of the study

- Small sample size.
- Study population was within the hospital which is not representative of community at large.
- Study was limited to south Indian ethnicity

### Conclusion

- Comprehensive Geriatric Assessment and Rehabilitation of older people is active process involving a co-ordinated multidisciplinary approach.
- The process of assessment for hospital geriatric inpatients should commence at admission and continue beyond discharge.
- Half of the elderly patients had chronic diseases like diabetes mellitus, hypertension, COPD, and macrovascular diseases.
- 25% of the elderly patients had at least one of the geriatric giants- instability, immobility, incontinence or intellectual decline.
- Anemia was present in 41.5% patients which reflected poor nutritional status in old individuals.
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