



## HOSPICE CARE IN A TERTIARY CARE HOSPITAL- AN OBSERVATIONAL STUDY

<b>Dr Udaya</b>	MBBS Graduate, Rajarajeswari Medical College and Hospital, Bangalore 560074.
<b>Dr Manish M</b>	MBBS Graduate, Rajarajeswari Medical College and Hospital, Bangalore 560074.
<b>Dr Anish B S</b>	MBBS Graduate, Rajarajeswari Medical College and Hospital, Bangalore 560074.
<b>Dr Naresh F Rathod*</b>	MD, LLB, Senior Resident, Department of Pharmacology, Vijayanagar Institute of Medical Science, Ballari 583104. *Corresponding Author

**ABSTRACT** The branch of geriatrics presents with challenges in various aspects requiring special medical and social support skills. Usually, elderly patients are diagnosed with conditions due to changes that are either an extension of their physiology or underlying pathology. This is an observational clinical research study focusing on 60 patients for a duration of 6 months. The parameters that were studied in our research are quality of life, nutrition, behavioral assessment, frequency of hospitalization, procedural requirement, co-morbidities. The objectives of the study are assessment and evaluation of quality of life of patients, quality and satisfaction of nursing care provided and the assessment of different comorbidities among geriatric patients. This study leads us to scientifically believe that hospice care has a positive impact on the quality of life (with regard to the aforementioned parameters) and the care received by these patients. A difference in the pattern of different co-morbidities has been observed in the study population.

**KEYWORDS :** Geriatrics, Hospice Care, Quality of Life, Elderly, Co-morbidities

### INTRODUCTION

Geriatrics is a branch of General medicine that is concerned with the clinical, preventative, remedial and social aspects of illness in old age. The challenges of frailty, complex comorbidity, different patterns of disease presentation, slower response to treatment and requirements for social support call for special medical skills. The purpose is to restore an ill and disabled person to a level of maximum ability and whenever possible return the person to an independent life at home.<sup>[1]</sup> A person aged 65 years or more is often referred to as 'elderly'. However, the ageing process is not uniform across the population due to differences in genetics, lifestyle, and overall health [2].

Older patients differ from younger ones in five major ways: heterogeneity, homeostenosis, comorbidities, different disease presentations, and the difference between acute and chronic diseases. As a result of these five major differences, older patients cannot simply be treated like their younger counterparts. Usually, elderly patients are diagnosed with co-morbid conditions due to many changes in the elderly that are either physiologic or pathologic.<sup>[3][4]</sup> Decreased compliance and poor cooperation in elderly patients which lead to multiple hospitalizations and recurrences of it as well permanent institutionalization and eventual death maybe derivative of the physiological weakness, lack of strength and immunity as well as multiple comorbidities that are common in the elderly patients. Patients with cognitive and sensory impairment are less likely to adhere to dietary restrictions, prescribed medications, weight monitoring, and timely reporting of symptoms.<sup>[5][6]</sup>

Optimal health outcomes for persons with chronic diseases depend heavily on medical self-management. Improvements in medical self-management processes correlate with improved health outcomes. Conversely, barriers to medical self-management negatively affect disease specific outcomes, mortality, and quality of life. Barriers reported in these investigations have included inadequate social support, difficulties with time management, troubled emotional state, low self-efficacy, conflicting personal health beliefs, physical limitations, lack of knowledge about their medical conditions, and the presence of comorbid diseases.<sup>[7]</sup>

Several potential reasons exist to explain the poor outcomes and high costs associated with these multiple comorbid conditions. First, there is limited understanding of what constitutes optimal care of this burgeoning population. The majority of clinical guidelines do not contain specific recommendations for patients with comorbid conditions, so clinicians tend to follow several single-disease-specific guidelines, increasing the risk of adverse drug events and disease-disease interactions.<sup>[9]</sup>

Many of these comorbidities especially those caused by side effects of

drug therapy and treatment like hypertension, diabetes, and coronary heart disease, osteoporosis, pneumonia, urinary tract infection, acute delirium, dementia, depression, anxiety or other neurological issues, bed sores, infections due to trauma, cognitive and sensory impairment etc.,<sup>[5][6]</sup> and more importantly their effect on the quality of life of patients are discussed in this paper.

### Objectives

1. Assessment and Evaluation of Quality of life of the patients.
2. Quality and satisfaction of nursing care provided.
3. Identify, quantify and assess the different comorbidities that geriatric patients are affected by.

### Methodology

#### Institution:

Rajarajeswari Medical college and hospital, a healthcare organization based in Bangalore, Karnataka, India.

Patients under direct supervision and treatment of a team headed by Dr. Krishna M.V as the chief supervising authority at the department of medicine RRMCH.

**Type Of Study:** Prospective non-interventional clinical research study.

**Study Population:** Study will be conducted on geriatric patients with different comorbidities.

**Sample Size:** 60 patients

**Duration Of Study:** 6 months (Jan 2018 – June 2018)

### Patient Selection Criteria:

#### Inclusion Criteria

- Geriatric patients over 60 years of age.
- Immobile or bedridden patients.
- Patients requiring in house medical care.
- Patients of both genders included.

**Frequency Of Doctor Visits:** 3 times a week

**Frequency Of Nurse Visits:** In-house / Thrice weekly (as appropriate)

### Ethical Considerations:

- Consent of respective families
- Consent from patients (where ever applicable)
- Ethical committee clearance from the Hospital
- Explanation of the purpose of the study to the patients and families

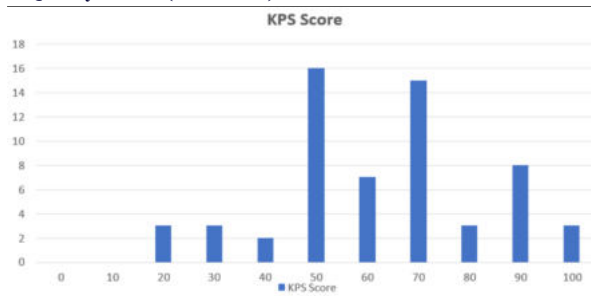
### Parameters Of Study:

- 1) Quality of Life - Karnofsky Performance Scale Score (100 to 0)

- 2) Nutrition – BMI assessment
- 3) Frequency of Hospitalization in last 3 months: 1 2 3 3+ None
- 4) Behavioral Assessment - Mini Mental Scale Examination (MMSE)
- 5) Procedural requirement –
  - a) Metabolic – IV Fluids / Total Parenteral Nutrition (TPN)
  - b) GI – NGT feeds / Gastrostomy / Jejunostomy / Colostomy
  - c) Thoracic – Chest Physiotherapy / Spirometry
  - d) Miscellaneous – Prosthetics
- 6) Co-Morbidities developed (during the course of disease):
  - a) Bedsores
  - b) Malnutrition
  - c) Type 2 Diabetes Mellitus
  - d) Hypertension
  - e) Tuberculosis
  - f) Seizures
  - g) Asthma
  - h) Miscellaneous

**RESULTS/OBSERVATIONS:**

**1. Quality Of Life (KPS Score)**



**2. BMI**

Less than 18.5	Underweight	16
18.5 – 24.9	Normal	23
25- 29.9	Overweight	7
30 – 34.9	Obese-1	8
35 – 40	Obese-2	3
Greater than 40	Morbidly Obese	3

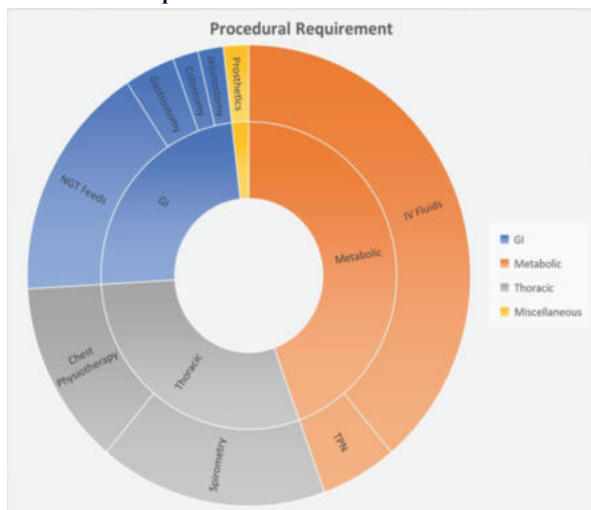
**3. Frequency of Hospitalization in the last 3 months**

- None – 23 patients
- 1 time – 12 patients
- 2 times – 13 patients
- 3 times – 7 patients
- More than 3 times – 5 patients

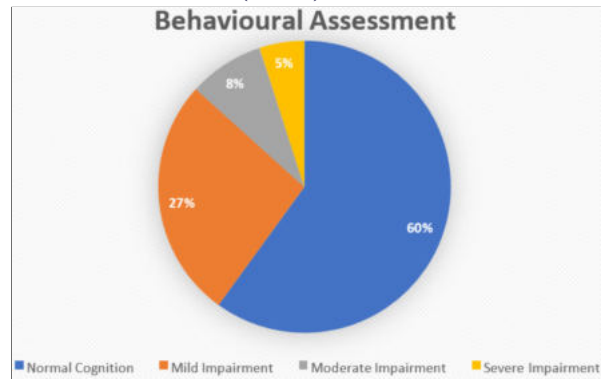
**MMSE Scoring System:**

Normal Cognition	Greater than 24 points
Mild Impairment	19-23
Moderate Impairment	10-18
Severe Impairment	Less than 9

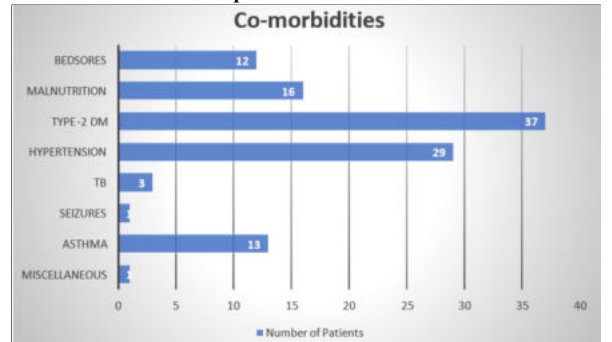
**4. Procedural Requirement**



**3. Behavioral Assessment (MMSE)**



**5. Co-morbidities Developed**



The most prevalent among comorbidities are hypertension, seen in 29 patients among those examined and Type 2 diabetes mellitus in 37 patients. Of the elderly patients 16 patients suffered from malnutrition whereas 13 patients were on treatment for asthma and 12 patients had developed bedsores.

It was observed that among the patients considered in this study, 23 patients had no hospitalizations in the last 3 months, 12 patients were hospitalized once, and 13 patients twice and only 5 patients were hospitalized more than 3 times in the last 3 months.

On measurement of BMI, 23 patients had values in the normal range of 18.5- 24.9, whereas 16 patients had a BMI less than 18.5. 7 patients were found to have a BMI of more than 25, 3 patients had values in between 30-34.9 and 3 patients were found to be morbidly obese with a BMI greater than 40.

On evaluation of the patients under Mini Mental Scale Examination (MMSE), it was observed that in the 60 elderly patients examined, 60% have normal cognition, 27% having mild impairment, and 8% having moderate impairment whereas 5% of the patients have severe cognitive mental impairment.

When the Karnofsky Performance Scale (KPS) score was calculated, 18 patients had a KPS score of 80-100 points, whereas 38 patients had a KPS score of 50-70 points. Only 8 patients had a KPS score below 50 points.

**DISCUSSION**

This study was undertaken for the assessment and evaluation of the quality of life in those under hospice care or those undergoing end of life care support, especially analysing the comorbidities developed during the same.

Millions of people have two or more conditions that last a year or more and require ongoing medical attention or limit activities of daily living. The combined effects of increasing life expectancy and the aging of the population undoubtedly will further increase the associated societal burden of chronic illnesses among future populations of older people. These chronic illnesses include a broad array of physical illnesses, such as arthritis, asthma, chronic respiratory conditions, diabetes and its complications, heart disease, human immunodeficiency virus infection, and hypertension. Also included are the panoply of behavioural conditions, such as substance use and addiction disorders, mental illnesses, dementia and other cognitive impairment disorders,

and developmental disabilities.<sup>[7][8]</sup>

Patients with multiple chronic conditions have on average a higher level of morbidity, poorer physical functioning and quality of life, a greater likelihood of persistent depression and lower levels of social well-being. Such patients incur increased risks of adverse drug events and mortality.

The number of chronic conditions in an individual is directly related to risks of adverse outcomes ranging from mortality, poor functional status, unnecessary hospitalizations, adverse drug events, and duplicative tests. Complicating this picture is that some combinations of conditions, or clusters, have synergistic interactions.<sup>[8]</sup>

Frailty and multiple comorbidities possibly contribute to non-compliance in elderly patients leading to higher rate of hospitalization, rehospitalization, and ultimately institutionalization and death. They may have more limited access to healthy food, and medical follow-up. Patients with cognitive and sensory impairment are less likely to adhere to dietary restrictions, prescribed medications, weight monitoring, and timely reporting of symptoms.<sup>[5][6]</sup>

In 2005, 21% or roughly 63 million Americans had more than 1 chronic condition, or multiple illnesses or impairments expected to last a year or longer. A persons' risk of having more than 1 chronic condition, henceforth referred to as multiple chronic conditions or MCC, increases with age: 62% of Americans over 65 have MCC. With the aging of the US population, the number of Americans with MCC is projected to be 81 million by 2020.<sup>[10]</sup>

The 2009 American Recovery and Reinvestment Act identified patients with multiple chronic conditions as a priority population for patient-centred health research (Department of Health and Human Services Agency for Healthcare Research and Quality, 2009). Among Medicare beneficiaries 83% have at least one chronic condition. The 23% who have five or more such conditions account for 68% of Medicare expenditures. 73.9% of all patients examined had Hypertension.

According to a cross-sectional study conducted in both the urban and the rural field practice areas of a medical college in Pune, India (2013). Of all the elderly examined, 20.4% had Body mass index (BMI) below 18.5, while 26.1% had BMI above 25. The prevalence of known hypertension was reported in 30.7% of the total study population. Among those interviewed, 12% reported having diabetes.

In this study which was conducted, the comorbidities considered are Type 2 Diabetes Mellitus, hypertension, bedsores, malnutrition, tuberculosis, seizures, asthma as well as others like urinary and respiratory tract infections and osteoporosis categorised under miscellaneous. Conditions of cognitive and sensory impairment as well delirium, dementia, anxiety and depression have also been evaluated in these patients.

On our evaluation of the patients (a sample size of 60), it has been observed that the most prevalent among comorbidities are hypertension, seen in 48.3% of those examined and Type 2 diabetes mellitus in 61.6% of those evaluated. Of the elderly patients examined in our study 26% suffered from malnutrition whereas 21.6% were on treatment for asthma and 20% had developed bedsores during their hospitalization.

Patient compliance as well as their perceived feeling of their quality of life also was found to be largely dependent on number of recent hospitalizations as well as procedures done. Based on their history and records of treatment, it was found that 38.3% of the patients had no hospitalizations in the last 3 months, 20% were hospitalized once and only 8.3% were hospitalized more than 3 times in the last 3 months.

Their medical history was taken and procedures done were categorized as Metabolic (Transfusion of IV fluids, total parenteral nutrition and blood in those indicated), Gastrointestinal (insertion of nasogastric tube/ Ryle's as well as administration of feeds through it, application of gastrostomy, jejunostomy/ileostomy and colostomy), Thoracic (application of physiotherapy of chest and spirometry) and implantation of prosthetics.

The patients' quality of life as well as physical and mental health were analysed using three parameters – Nutritional status via assessment of

BMI, quality of life through Karnofsky

Performance Scale (KPS) score and mental impairment through the Mini Mental Scale Examination (MMSE)

On assessment of BMI, 38% were found to be within the normal scale of 18.5- 24.9, whereas 26.6% were found to be have a BMI less than 18.5 and thus underweight. 11.6% of patients were found to have a BMI of more than 25 and were overweight, and 5% were found to be morbidly obese with a BMI greater than 40.

The Mini Mental Scale Examination (MMSE) was done to analyse the mental status and observe for any signs of mental impairment. It is thus graded in the following manner- greater than 24 points being normal cognition, 19-23 points signifying mild, 10-18 points meaning moderate and less than 9 points signifying severe mental impairment. According to our study, in the 60 elderly patients examined, 60% have normal cognition, 27% having mild impairment, and 8% having moderate impairment whereas 5% of the patients have severe cognitive mental impairment.

Lastly, to measure the quality of life of these patients, the Karnofsky Performance Scale (KPS) score was calculated. 30% of those examined had a high KPS score of 80-100 points, whereas 63.3% of the total patients had a good KPS score of 50-70 points. Only 13% had a KPS score below 50 points. Thus, more than 50% of patients were observed to have and experience an above average or good quality of life as a result of their care.

The results, by quantifying the prevalence of comorbid conditions at specific ages, offer a starting point toward characterizing medically complex patients beyond enumerating the number of morbidities they might have.

Thus, our study shows that the mental and physical condition of the patients examined are above average as more than 50% have scored above the average on the Mini Mental Scale Examination and the Karnofsky Performance Scale. Physiologically, their immunity and strength are observed to be good and it seen that roughly 40% have a normal and healthy Body Mass Index.

From this it can be derived that the quality of care is on par and not to be diminished as well as treatment of these patients by healthcare workers is professional and sufficiently caring. Most of the patients have and are experiencing a good quality of life according to the observations made in our study. According to this, we can also quantify which areas need more development, improvement and closer attention and rectify as needed.

## CONCLUSION

This study leads us to conclude with correlation to previous studies that among those with the above co-morbidities, the quality of life and the care received by these patients was far above the average, with a much smaller percentage than what was expected due to the above average score on the parameters analyzed.

Also, it leads us to observe that the co-morbidities that may be debilitating or irrational to patients like malnutrition or bedsores are much lesser in number.

On the contrary there seems to be an increase in Type 2 DM and Hypertension which could lead to a larger number of complications during treatment and limit the therapeutic options available to clinicians in treating patients receiving end of life care support. The increase in Hypertension could also be a significant risk factor in the development of future cardiovascular disease.

It is observed on the basis of the Karnofsky Performance scale (KPS) and the Mini Mental Scale Examination (MMSE), in which more than 50% of the elderly patients examined in a sample size of 60 patients are found to have above average results. The study results are thus promising, give insight into complications and comorbidities suffered by these patients as well as a statistical analysis of the incidence of these comorbidities and can help to improve and rectify the problems observed during the course of this study.

**Conflict Of Interest:** The Authors does not declare any competing conflict of interest.

**Acknowledgements**

We would like to thank the faculty of Department of Medicine, Rajarajeswari Medical College and Hospital, Bangalore, for directly or indirectly supporting us to carry out this research.

We thank Managing Director Invictus Scientifics “Academy Of Research Excellence” for editing and fine tuning the manuscript for publication.

**Funding & Sponsorship:** This study was carried out solely by the authors and no funding or sponsorship of any kind was taken for carrying forward this current research study.

**REFERENCES**

- [1] British Geriatrics Society [Internet]. Bgs.org.uk. 2018
- [2] Shamsheer Singh, B. *Defining 'elderly' in clinical practice guidelines for pharmacotherapy.* (2018)
- [3] Bludau J. Geriatric Medicine and why we need Geriatricians! [Internet]. Elliothospital.org. 2018
- [4] Razavi SM, Razavi MS, Pirhosseinlou M (2017) A Preventive Approach to Elderly People Health Problems. *J Gerontol Geriatr Res* 6: 450.
- [5] Davis, James W, Richard Chung, and Deborah T Juarez. “Prevalence of Comorbid Conditions with Aging Among Patients with Diabetes and Cardiovascular Disease.” *Hawaii Medical Journal* 70.10(2011): 209–213.
- [6] Murad, Khalil, and Dalane W Kitzman. “Frailty and Multiple Comorbidities in the Elderly Patient with Heart Failure: Implications for Management.” *Heart failure reviews* 17.0(2012): 581–588. *PMC*. Web. 9 June 2018.
- [7] Bayliss, Elizabeth A., Jennifer L. Ellis, and John F. Steiner. “Barriers to Self-Management and Quality-of-Life Outcomes in Seniors With Multimorbidities.” *Annals of Family Medicine* 5.5(2007): 395–402. *PMC*. Web. 24 Aug. 2018.
- [8] Parekh, Anand K. et al. “Managing Multiple Chronic Conditions: A Strategic Framework for Improving Health Outcomes and Quality of Life.” *Public Health Reports* 126.4(2011): 460–471. Print.
- [9] Benjamin, Regina M. “Multiple Chronic Conditions: A Public Health Challenge.” *Public Health Reports* 125.5(2010): 626–627. Print.
- [10] Vogeli, Christine et al. “Multiple Chronic Conditions: Prevalence, Health Consequences, and Implications for Quality, Care Management, and Costs.” *Journal of General Internal Medicine* 22.Supp3(2007): 391–395. *PMC*. Web. 24 Aug. 2018.