

## Assessment of various domains in quality of life of the rural elderly population of Karnataka

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### Abstract

The present study was intended to study the quality of life of elderly people living in rural Karnataka. The study subjects consist of population aged 60 years and above residing in the study area. This study involved 441 subjects, out of which 55.3% were males and 44.7% were females, with a mean age of the study subjects was  $69.2 \pm 6.9$  years. 63.9% of the study subjects felt that they enjoy a good quality of life and 72.3% were satisfied with their health. The raw scores of the World Health Organization Quality of Life Instrument (WHO-QOL BREF) was transformed into individual scores under the four domains, physical domain, psychological domain, social domain and environmental domain to the scores out of

100 and were assessed to the group, who scored better and who didn't among the group. The mean scores of the subjects under the physical domain were  $63.18 \pm 11.38$ . Under the psychological domain, the mean score was  $63.92 \pm 12.01$ . Social dimension scores were  $40.85 \pm 10.24$  and the environmental domain scores were  $58.01 \pm 10.43$ . The overall mean scores in the physical and psychological domains of the study subjects were higher compared to the social and environmental domains.

**Keywords:** Elderly population, quality of life, physical domain, psychological domain, social domain, environmental domain

### Introduction

Ageing affects every aspect of the human body bringing several 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 the day to day activities, attitude, behavior and lifestyles. Health problems will start to accompany as age progresses. These changes are expected to affect the quality of life of the elderly.<sup>1,2</sup>

In Karnataka, the estimated elderly population was 3,837,000 in 2001 and projected to be 9,681,000 by 2026.<sup>3</sup> This increasing number of elderly has a great demand on the health services and social security measures.

Some factors like 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, a qualitative assessment will give a better picture of a situation. Presently, we need to focus on the quality of life. Among the elderly, the quality of life is likely to be compromised because of their social and economic vulnerability.

According to World Health Organization (WHO), "Quality of life is defined as individual's perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns."<sup>4,5</sup> It is a vast concept covering the individual's physical health, mental state, social relationships and their relationship to the environment. The health of an individual is an important factor that plays a major role in deciding the quality of life. The WHO - quality of life (QOL) assessment questionnaire was developed by the WHOQOL Group in an attempt to develop a tool for assessment of the quality of life that would be applicable cross-culturally.<sup>6,7,8</sup>

WHO's initiative to develop a quality of life assessment necessitated because in recent years there has been a broadening of focus in the measurement of health, beyond traditional health indicators such as mortality and morbidity, to include measures of the impact of disease and impairment on daily activities and behavior, perceived health measures and disability/ functional status measures. The increasingly mechanistic model of medicine, concerned only with the eradication of disease and symptoms, reinforces the need for introducing a humanistic element into health care.

A very few studies have been conducted to assess the QOL among the elderly in India. Many studies were conducted on QOL among the elderly in other countries. It is known that socio-demographic factors like age, education, marital status and family structure influence the QOL among the elderly population. In addition, various studies have shown that chronic morbid conditions are also associated with low QOL.<sup>4,9</sup>

Thus, the current statistics on the elderly in India give 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 northern 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 northern 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:**

The study was conducted from 2018 to 2020 in 11 neighboring villages utilizing the health services of rural field practice area, Department of Community Medicine, K.S.Hegde Medical Academy. 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.

Subjects were evaluated for assessment of the quality of life using the WHO-QOL BREF questionnaire.

### **Statistical analysis:**

WHOQOL-BREF scores were expressed as mean, median and standard deviation.

The Chi-square test was applied to find out

any association between two attributes. As the scores on quality of life were on the ordinal scale, non-parametric tests like the Mann-Whitney test and Kruskal-Wallis tests were applied and an association between WHOQOL-BREF domains. The statistical level of significance was set at 5%. ( $p < 0.05$ ).

## Results

In the present study, none perceived that their quality of life was very poor. 18 (4.1%) subjects perceived it to be poor, 129 (29.3%) of the subjects perceived it to be neither poor nor good. But the majority of the subjects felt their quality of life to be good. 282 (63.9%) of the subjects perceived it good. Only 12 (2.7%) perceived it to be very good.

When it was about the subject's perception of overall health, none of the subjects were very dissatisfied. Around 20 (4.5%) of them were dissatisfied with their health status. 89 (20.2%) of the subjects were neither satisfied nor dissatisfied with

their health. But most of the subjects, 319 (72.3%) of the subjects were satisfied with their present health status and 13 (2.9%) subjects were very satisfied with their health status.

The raw scores of WHO-QOL BREF were transformed into individual scores under the four domains, physical domain, psychological domain, social domain and environmental domain to the scores out of 100 and were assessed to the group, who scored better and who didn't among the group (Table-1). The score was higher in the physical domain, lowest in the social domain.

In the physical domain, the social domain male subjects had better scores than female subjects and this difference in scores was statistically significant ( $p = 0.002$ ). Male subjects scored higher in the rest of the two domains as well. But no statistically significant difference was found in the psychological and environmental domain (Table-2).

**Table 1: Distribution of overall transformed scores among the subjects (Domain's maximum score = 100)**

Domains	Mean $\pm$ SD
Physical domain	63.18 $\pm$ 11.38
Psychological domain	63.92 $\pm$ 12.01
Social domain	40.85 $\pm$ 10.24
Environmental domain	58.01 $\pm$ 10.43

**Table 2: Distribution of scores of various domains in quality of life concerning gender**

Descriptive	Domains							
	Physical		Psychological		Social		Environmental	
Sex	Median	Mean rank	Median	Mean rank	Median	Mean rank	Median	Mean rank
Male	64.23	238.2	66.67	237.1	41.67	235.5	59.37	229
Female	64.23	199.7	62.50	201	41.67	203.6	59.37	211
<i>Mann-Whitney U test</i>	U=19837 & p=0.002		U=20101 & p=0.139		U=20497 & p=0.006		U=20101 & p=0.139	

**Table 3: Distribution of scores of various domains in quality of life concerning age**

Descriptive	Domains							
	Physical		Psychological		Social		Environmental	
	Median	Mean rank	Median	Mean rank	Median	Mean rank	Median	Mean rank
Age								
60-64	67.85	250.2	66.66	245.1	41.67	227.4	62.5	259.4
65-69	64.28	235.7	66.66	232.8	41.67	242	59.37	229.6
70-74	64.28	207.4	66.66	217	33.33	182.7	46.88	175.2
75-79	64.28	185.2	66.66	202.4	33.33	168.3	59.37	214.7
80+	60.71	164.7	58.33	156.7	41.67	237.4	56.25	162.5
<i>Kruskal Wallis Test</i>	$\chi^2 = 24.218$ df = 4 p < 0.001		$\chi^2 = 20.916$ df = 4 p < 0.001		$\chi^2 = 21.524$ df = 4 p < 0.001		$\chi^2 = 29.927$ df = 4 p < 0.001	

**Table 4: Distribution of scores of various domains in quality of life regarding marital status**

Descriptive	Domains							
	Physical		Psychological		Social		Environmental	
	Median	Mean rank	Median	Mean rank	Median	Mean rank	Median	Mean rank
Marital status								
Married	67.86	239.8	66.67	239	41.67	230	59.38	237.3
Divorced/ Separated	64.23	217.5	66.67	235.5	41.67	258.7	43.75	67.7
Widowed	60.71	171.8	58.33	172.9	41.67	195.4	56.25	185.8
<i>Kruskal Wallis Test</i>	$\chi^2 = 24.992$ df = 2 p < 0.001		$\chi^2 = 23.783$ df = 2 p < 0.001		$\chi^2 = 7.481$ df = 2 p = 0.024		$\chi^2 = 23.225$ df = 2 p < 0.001	

When the study subjects were categorized into age groups with an interval of 5 years and analyzed, statistical significance was found between the groups in all four domains. The age group of 60 to 64 years scored better and the age group of above 80 years scored the least in physical, psychological and environmental domains.

In the social domain, the age category of 65 to 69 years scored better than the rest of the categories and the category of 75 to 79 years scoring the least (Table-3).

When the QOL domain scores were analyzed according to the subject's marital status, married and with a living spouse category scored better in Physical, Psychological and Environmental domains and separated or divorced subjects scored better in the social domain. The widowed group scored least in physical, psychological and social domain and the divorced group scored least in environmental domain (Table-4).

**Table 5: Distribution of scores of various domains in quality of life with respect to occupation**

Descriptive Occupation	Domains							
	Physical		Psychological		Social		Environmental	
	Median	Mean rank	Median	Mean rank	Median	Mean rank	Median	Mean rank
Unemployed	50	38.7	54.17	66.6	33.33	68.5	62.5	162
Unskilled	64.29	277	75	303.2	50	333.9	68.75	337.2
Semi-skilled	67.86	252.3	68.75	264.5	50	266.7	65.63	277.7
Skilled	71.42	305.9	70.83	292.4	50	276.4	62.5	248.2
Professional	57.14	198.6	70.83	315	41.67	246.9	68.75	343.8
Housewife	64.23	208	66.67	207.1	41.67	211.5	57.8	207.6
Agriculture	64.28	226.1	66.67	217	41.67	215	59.38	208.2
Others	71.43	290.7	79.17	391	50	327.2	73.48	417.67
P value	p < 0.001		p < 0.001		p < 0.001		p < 0.001	

When subjects' quality of life was analyzed according to their occupations, skilled workers had the highest scores and unemployed scored the lowest. There was a statistically significant difference between the categories ( $p < 0.001$ ). In the psychological domain, subjects who belonged to the others category had the highest score and unemployed subjects scored the least ( $p < 0.001$ ). In the social domain, unskilled workers scored highest and unemployed subjects scored lesser, with a statistical significance ( $p < 0.001$ ). In the environmental domain, those who belonged to the others category scored the highest and unemployed subjects scored the least (Table-5).

When the quality of life was assessed according to their education level, subjects who had studied till intermediate scored better in the physical domain and illiterates scored least among the

categories. In the psychological domain, subjects who studied till intermediate scored the highest and graduates scored the least. In the social domain, both illiterates and school attended subjects scored highest and in the environment domain, graduates scored the highest. It might be because higher education of the subjects, which means better chances of knowing sanitation, might have contributed to the better scores in the environmental domain. However, there was no statistically significant difference between the categories in any domain (Table-6).

When the quality of life was assessed according to their socio-economic status (SES), subjects from Class I according to modified BG Prasad classification scored highest in all 4 domains, Class V subjects scored the least in physical, psychological and environmental domains and Class II subjects scored the least in the social domain (Table-7).



**Table 6: Distribution of scores of various domains in quality of life with respect to educational status**

Descriptive	Domains							
	Physical		Psychological		Social		Environmental	
	Median	Mean rank	Median	Mean rank	Median	Mean rank	Median	Mean rank
<b>Illiterate</b>	64.23	215	66.67	216.4	41.67	222.1	59.38	218.5
<b>Schooling</b>	64.23	227	66.67	227.3	41.67	222	59.38	221.5
<b>Pre University</b>	64.23	257.6	70.83	262.3	50	202.1	62.5	215.5
<b>Graduate</b>	67.86	225.6	70.83	193.3	41.67	208	68.75	265.6
<b>Kruskal Wallis Test</b>	$\chi^2 = 2.043$ df = 3 p = 0.564		$\chi^2 = 2.786$ df = 3 p = 0.426		$\chi^2 = 0.487$ df = 3 p = 0.922		$\chi^2 = 1.857$ df = 3 p = 0.603	

**Table 7: Distribution of scores of various domains in quality of life regarding Socioeconomic status**

Descriptive	Domains							
	Physical		Psychological		Social		Environmental	
	Median	Mean rank	Median	Mean rank	Median	Mean rank	Median	Mean rank
<b>SES I</b>	71.43	335	79.17	410.5	50	349	75	433.5
<b>SES II</b>	67.86	265.4	66.67	204.8	41.67	174.5	65.63	287.3
<b>SES III</b>	64.23	247.4	66.67	205.5	41.67	177.7	57.8	212.7
<b>SES IV</b>	64.23	219.6	66.67	243.3	41.67	227.7	59.38	236.28
<b>SES V</b>	60.7	182.7	66.67	195.83	50	345.8	59.38	174.2
<b>No information</b>	64.23	205.9	58.33	180.6	41.67	197.5	56.25	183
<b>Kruskal Wallis Test</b>	$\chi^2 = 11.366$ df = 5 p = 0.045		$\chi^2 = 26.478$ df = 5 p < 0.001		$\chi^2 = 47.816$ df = 5 p < 0.001		$\chi^2 = 29.718$ df = 5 p < 0.001	

## Discussion

Quality of life is higher in the male subject when compared with female subjects. This might be because, in our male dominant society, males enjoy better privileges compared to females. Similar results were seen in a study done by Qadri S *et al*, the quality of life scores was better among elderly males in all the domains ie; physical, psychological, social and environmental respectively as compared to elderly females.<sup>10</sup>

In contrast to the present study, a study by Barua A *et al*, in the year 2003 to study the quality of life of a geriatric population, the mean scores in each of the 4 domains for both males and females were similar. The difference between the two groups was not found to be statistically significant for any of the 4 domains.<sup>11</sup>

There is a significant difference in QOL scores among the age groups. The age groups 60-64 years score better and

the age group above 80 years scored the least in the physical, psychological and environmental domains. In a study by Chandrika S *et al.*, in Vishakapatnam, as age increased the mean QOL scores of physical, psychological, and social domains were decreasing and it was found to be statistically significant, and the mean QOL score of the environmental domain was also decreasing but it was found to be not statistically significant.<sup>12</sup> In a study done by Sowmiya KR at Mettupalyam, the age category of 60-69 years had better QOL scores in all 4 domains, when compared to 70-79 years and 80 & above.<sup>13</sup>

Married subjects scored high QOL scores in the physical, psychological, and environmental domains. The widowed group scored least in the physical, psychological, and social domains. The divorced group scored least in the environmental domain. In a study done by Qadri S *et al*, the mean score of quality of

life was highest in currently married (and staying with a spouse) and higher in elderly subjects living in extended families as compared to other categories like unmarried, divorced, and separated elderly subjects and the difference was found to be significant.<sup>10</sup> In a study done by Barua A *et al*, the mean scores of the two groups of single and married differed significantly in the domains of environmental and social relations and the overall well-being was significantly affected for those who were singles (unmarried and widowed).<sup>11</sup> In a study done by Hameed S *et al*, married elderly people scored better than those subjects who didn't have spouses in all 4 domains and it was found to be statistically significant.<sup>1</sup>

In the present study, skilled workers scored highest in the physical domain and unskilled workers had better social domain. Subjects who did other types of jobs had a better quality of life in psychological and environmental domains. In a study done by Praveen V *et al*, at

Thiruvalluvar district of Tamil Nadu, in the year 2015, to study the quality of life among the elderly, there was no statistically significant difference between those subjects who were then currently working and not working.<sup>14</sup> In a study done by Thadathil SE *et al*, at Kollam, Kerala to study the quality of life and its determinants, the elderly subjects who were then currently employed scored better than the unemployed elderly subjects in all 4 domains and the difference was statistically significant.<sup>15</sup>

In the present study subjects who studied till intermediate or PUC had better scores in physical and psychological domains and graduate subjects scored highest in the environmental domain. In a study done by Thadathil SE *et al*, at Kollam, elderly subjects who had studied high school and above scored more than the rest other categories in all 4 domains and there was a statistically significant difference between the categories.<sup>15</sup> In a study done by Kumar SG *et al*, at

Puducherry, subjects who had done schooling scored better than illiterates in overall quality of life scores and it was statistically significant.<sup>9</sup>

In the present study, subjects who were from Class I socioeconomic status scored highest in all 4 domains of quality of life. In a study done by Hameed S *et al*, the subjects who had BPL (Below poverty line) cards scored less in psychological, social and environmental domains, which had statistically significant differences between the groups but in the physical domain, though they scored less, there was no statistically significant difference between both the group.<sup>1</sup> In a study done by Chandrika S *et al*, at Vishakapatnam, elderly subjects from Class I scored higher than the rest other Classes in all 4 domains, and subjects from Class V scored least in all 4 domains but there was no significant statistical difference between the different socio-economic classes.<sup>12</sup> In a study done by Sowmiya KR at Mettuplayam, the mean QOL domain

scores were high for Socioeconomic Class I elderly than the others. The elderly in class V socioeconomic status had the least mean QOL scores in all the domains.<sup>13</sup>

## Conclusion

The overall mean scores in the physical and psychological domains of the study subjects were higher compared to the social and environmental domains. Male subjects had scored higher than female subjects in all 4 domains. The age group of 60-64 years and married subjects scored higher in physical, psychological, and environmental domains compared to other categories.

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