# A Community Based Assessment of Health-Related Quality of Life in the Elderly Population of Bengaluru South

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## ABSTRACT

**Background:** Globally the quality of life (QOL) among the elderly is deteriorating. Therefore, it should be considered as an important aspect to improve their health and wellbeing. **Objectives:** To assess the quality of life of elderly population in Bengaluru South. **Methodology:** A community based cross sectional study was conducted among 400 elderly subjects residing in South of Bengaluru for a period of 6 months. Their QOL was assessed by using WHOQOL-BREF instrument. Socio-demographic factors and morbidities were collected using a specially designed questionnaire. Data was analysed using SPSS version 16. The difference between the mean scores was tested using independent sample $t$ test and ANOVA. **Results:** A majority, 54.75%, of study participants were in the age group of 60-69 years. The mean scores of physical, psychological, social and environmental domains was found to be 48.60, 51.26, 48.37 and 59.66 respectively. Hypertension and vision impairment were the most prevalent ailment. The QOL was significantly lower among subjects with advancing age, with no formal education and those who were staying without a partner. Female subjects were having lower QOL than males. Those with musculoskeletal disorders and hearing impairment had significantly lower QOL. **Conclusion:** Ageing is something which cannot be prevented from happening, however one should overcome this through certain versatile activities like social and family support, frequent health examinations, legal security and unique schemes for elderly which helps them to improve their QOL.

**Key words:** Elderly, Health-related quality of life (HRQOL), WHOQOL-BREF, Quality of life (QOL), Morbidities.

## INTRODUCTION

According to WHO, Health is defined as 'A state of complete physical, mental and social well –being not merely the absence of disease. Along with measuring health and effects of health care like the effect of drugs and severity of diseases; there should be an estimation of the well-being of the patient. This can be assessed by measuring the quality of life related to healthcare.

WHO defines quality of life as an individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concern.[1] QOL among the elderly is an important area of concern which reflects the health status and well-being of this vulnerable population. In developing countries, demographic transition results in increasing life expectancy and an increase in the proportion of the elderly population in the near future.[2] India's elderly population has already crossed 100 million mark during 2011 (8.2%) and is projected to cross 177 million by the year 2025.[3]

Aging is a progressive, generalized impairment of functions resulting in loss of adaptive responses to stress and in an increasing risk of age-related diseases.[4] There are many factors which influences the quality of life of older adults and these factors differ compared to other age groups. Besides personal, economic and political factors, the elderly also equates quality of life with social contacts, dependency and health.[5]

Very few studies had been conducted to assess the QOL among the elderly in India.

Various sociodemographic factors like age, education, marital status and family structure influence the QOL among elderly population. In addition, various studies have shown that chronic morbid conditions are associated with low QOL. However, there is a paucity of information with regard to this in developing countries including India.[2,6,7]

Hence, the aim of this study was to assess the health-related quality of life (HRQOL) in elderly population of Bengaluru South.

## METHODOLOGY

This was a Community based - cross sectional study conducted among the elderly population residing in the South of Bengaluru. It was conducted for a period of 6 months from November 2017 to April 2018.The study was carried out after obtaining permission from the Ethics Committee of the institution.

The elderly subjects who had completed 60 years of age or more were included in the study and subjects with psychiatric disorders, language impairment and those who were unwilling to participate in the study were excluded.

A sample size of 400 was calculated by using the formula $Z^2_{(1-\alpha/2)} p(1-p) /d^2$.[8] After obtaining their verbal consent, the quality of life of the elderly participants was assessed using the WHOQOL-BREF. They were interviewed in the local language at public places like parks, places of worship and shopping centers. Sociodemographic factors like age, gender, education, marital status, diet and morbidity status of the study population were collected on a specially designed questionnaire by direct interview method and confidentiality of the study participants were maintained.

The WHOQOL-BREF questionnaire, which was used in the study was translated in to the local language, Kannada. The quality of life of the study group was assessed by using the translated and validated WHOQOL-BREF which is a 26-item questionnaire having four domains – physical, psychological, social and environmental. The physical domain has seven items which include; pain and discomfort, dependence on medication, energy and fatigue, mobility, sleep and rest, activities of daily living and working capacity. The psychological wellbeing domain has six items which include; positive feelings, negative feelings, spirituality, thinking, learning, memory and concentration, body image and self-esteem. The social domain has three items including; personal relationship, sexual activity and social support. The environment domain has eight items including; physical

safety and security, physical environment, financial resources, information and skills, recreational and leisure, home environment, access to health and social care and transport.[5] The raw scores for the quality of life were transformed into scores ranging from 0 to 100, where 100 is the highest and 0 is the lowest, using the instructions given in the standardized instruction manual of the WHOQOL manual.[9]

The data collected was expressed as percentage and analysed using the statistical package for social sciences (SPSS) version 16.0. Scores were expressed as mean and standard deviation. The difference between mean scores were tested using independent sample *t*-test and ANOVA. $P<0.05$ was considered as statistically significant.

## RESULTS

Majority of the study participants were in the age group of 60-69 years. Most of them were males (60.25%), 43.25% were high school educated, 55% lived in a nuclear family, 69% stayed with their partner, 54% were having a mixed diet. In our study population, Hypertension and vision impairment were the most prevalent health conditions.

Our study showed that about 48.25% (193) of the elderly group had an overall QOL score which was neither poor nor good and overall health showed a trend which was good.

## DISCUSSION

The present study was conducted on 400 elderly persons (> 60 years) in the areas of South Bengaluru. The researchers interviewed the study participants in the public places which they frequented. The mean QOL domain score was 51.97. It was highest in the environmental domain (Figure 1), which indicates that the factors like transport, financial resources, information and skills, physical environment influences the QOL and were favorable in our study population. The social domain score was low, which implies a lack of meaningful social contacts and relationships. This finding is similar to a study conducted in Malaysia, which showed a higher mean score in the psychological domain and low score in the social domain. In Asia, family relations are an important aspect of healthy ageing among the elderly and the lack of social support from family and friends may cause the individual to perceive old age as uncertain and insecure.[5]

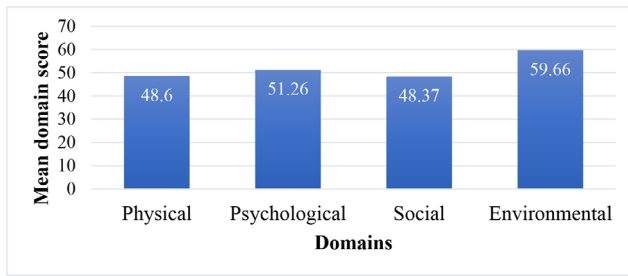In our study, the oldest participant was 92 years old.

**Figure 1: Mean Domain Scores of the Study Population.**

The mean (SD) age of our study population was 70.35 ± 7.75 years (Table 1). With increase in age, the mean scores of physical, psychological and social domains decreased significantly and though the mean score of the environmental domain had reduced, it was not significant. There is an inverse relationship of age and quality of life, which is comparable to the study conducted by Abdul Rashid Khan *et al.*[5]

There was a male preponderance in our study group (60.25%). Women had a low response rate when compared to men. Our study showed that the male participants scored significantly higher in all four domains compared to the female elderly. The reason for this could be due to the fact that the problems faced by the women in India are more critical compared to their male counterparts because many women are illiterate and jobless during their prime ages. Their marginalization, social insecurity, restricted social interaction, limited earning possibilities, multiple medical complications, emotional isolation and a limited awareness regarding their legal rights also adds to their compromised quality of life.[4]

In our study, education significantly affected the QOL scores of the elderly. QOL of college educated participants were more when compared to those with no formal education; suggesting that better education gives an elderly person some of the necessary tools and awareness to produce a better quality of life.

In a study conducted by Ganesh Kumar S *et al.* the subjects who stayed in a joint family had a better QOL than those who stayed in nuclear family.[2] our study, however, showed no significant differences in all the domains among the elderly who lived in joint or in nuclear families. This dissimilarity could be due to the social and cultural differences in individuals who are used to living conditions in an urban metro setting.

The QOL scores in the present study were significantly reduced in participants who were living without a partner as they considered a spouse to be an important support. Marital status determines one's position within the family

**Table 1: Association of QOL domain score with sociodemographic factors.**

| Sociodemographic | Physical domain Mean (SD) | Psychological domain Mean (SD) | Social domain Mean (SD) | Environmental domain Mean (SD) |
|---|---|---|---|---|
| **Age** | | | | |
| 60-69(*N*=219) | 50.34 (8.09) | 52.32 (7.73) | 51.54 (16.45) | 60.03 (11.22) |
| 70-79(*N*=105) | 47.09 (9.17) | 51.14 (8.93) | 47.13 (18.24) | 60.50 (11.29) |
| >80(*N*=76) | 45.70(10.42) | 48.39 (11.00) | 40.92 (17.86) | 57.43 (15.33) |
| *p* value | 0.000* | 0.004* | 0.000* | 0.197 |
| **Gender** | | | | |
| Male (*N*= 241) | 49.86 (8.50) | 52.41 (9.17) | 53.51 (14.95) | 61.94 (11.28) |
| Female(*N*=159) | 46.70 (9.55) | 49.52 (8.08) | 40.58 (18.56) | 56.20 (12.60) |
| p value | 0.001* | 0.001* | 0.000* | 0.000* |
| **Education** | | | | |
| No schooling(*N*=117) | 44.97 (9.25) | 47.49 (8.39) | 39.43 (16.51) | 52.24 (11.86) |
| Schooling(*N*=173) | 48.69 (8.69) | 50.54 (7.72) | 48.23 (16.75) | 59.49 (10.55) |
| College(*N*=110) | 52.34 (7.84) | 56.42 (14.97) | 58.10 (14.97) | 67.83 (9.36) |
| p value | 0.000* | 0.000* | 0.000* | 0.000* |
| **Marital status** | | | | |
| With partner(*N*=276) | 49.57 (8.84) | 52.93 (8.89) | 55.91 (13.51) | 61.57 (11.82) |
| Without partner(*N*=124) | 46.46 (9.18) | 47.55 (7.59) | 31.57 (13.74) | 55.40 (11.79) |
| *p* value | 0.002* | 0.000* | 0.000* | 0.000* |
| **Exercise** | | | | |
| Walking(*N*=237) | 50.65 (8.15) | 53.22 (8.84) | 51.48 (16.97) | 63.27 (10.93) |
| No walking(*N*=163) | 45.63 (9.48) | 48.41 (8.09) | 43.84 (17.65) | 54.42 (11.93) |
| *p* value | 0.000* | 0.000* | 0.000* | 0.000* |

*\*p value less than 0.05 is considered as significant.*

| Morbidities | Physical domain Mean (SD) | Psychological domain Mean (SD) | Social domain Mean (SD) | Environmental domain Mean (SD) |
|---|---|---|---|---|
| **Table 2: Association of QOL domain score with morbidity status.** | | | | |
| **Musculoskeletal Disorder** | | | | |
| No (*N*=336) | 49.28 (8.41) | 51.59 (8.76) | 50.19 (16.65) | 60.69 (11.55) |
| Yes (*N*=64) | 45.08 (11.29) | 49.53 (9.19) | 38.81 (19.63) | 54.23 (13.74) |
| *p* value | 0.001* | 0.088 | 0.000* | 0.001* |
| **Hearing Impairment** | | | | |
| No (*N*=362) | 48.96 (8.95) | 51.82 (8.29) | 49.13 (17.77) | 60.01 (11.58) |
| Yes (*N*=38) | 45.18 (9.40) | 45.92 (11.97) | 41.08 (14.57) | 56.34 (16.34) |
| *p* value | 0.014* | 0.005* | 0.003* | 0.077 |

*$p$ value less than 0.05 is considered as significant.

as well as the status in society.[10]

32.75% of the study group reported having co morbid conditions. Commonly observed co-morbid conditions among study participants were hypertension and vision impairment. The average number of medications including supplements used by the study participants were 1.87 (approximately 2). This perhaps could be attributed to the fact that most of our study group were interviewed by us at public places, like parks, places of worship and shopping areas and many of them were unable to recall the names of the medications that they were taking, though they were able to recollect the number of drugs that they were taking. Participants with musculoskeletal disorders and hearing impairment were significantly associated with low QOL scores, whereas those with hypertension, diabetes mellitus and vision impairment were not affected (Table 2). This was corroborated with the study conducted by Ganesh Kumar *et al.*[2]

Results of our study showed that smoking and alcohol had a significant effect on QOL of the study participants. However, a study that was conducted by Jeffrey A. Henderson *et al.* showed that smoking and alcohol did not have any significant effect on QOL.[11]

The participants who walked and exercised regularly had better QOL scores. Regular exercise and physical activity can reduce the risk of certain chronic diseases and it can improve the cognitive function in older people. Therefore, regular physical exercise and healthy diet should be recommended to and be the center of health care for the elderly as it helps them to maintain vigor and energy for daily activities and reduction of physical disabilities thus allowing an improvement in autonomy.[12,7]

elderly population had a better mean QOL score in environmental domain, whereas physical and social domains were low; psychological domain was found to be in the average range. The scores in the social relationship's domain indicates that elderly should be provided with social and physical group recreational activities and health education that will help in building their self-confidence and thus enhancing their QOL.

The quality of life was significantly lower among subjects with advancing age, those with no formal education and staying without a partner. Female subjects were having lower QOL when compared to males. Those with musculoskeletal disorders and hearing impairment had significantly lower QOL scores. As our data was taken directly from the community and not from the elderly who are staying in institutions or old age homes, so this can be used as a basis for planning and for conducting subsequent epidemiological studies. Further similar studies will help the policy makers to plan suitable interventional strategies for taking adequate care of the elderly in our communities.

One of the main limitations of our study was its cross-sectional design, which precludes the establishment of direct causal relationships. Non-response was a particular problem which could have resulted in a bias of the measures of outcome. This may be problematic when the characteristics of non-responders differ from responders. Under reporting of chronic diseases is also another limitation because the study has taken into consideration only the diagnosed cases. Socioeconomic status of the participants was not taken into consideration because they were not willing to reveal their financial conditions.

## CONCLUSION

Our study reflects the conditions of the geriatric population residing in South Bengaluru. Most of the

## ACKNOWLEDGEMENT

## CONFLICT OF INTEREST

The author declare no conflict of interest.

## ABBREVIATIONS

**ANOVA:** Analysis of Variance; **HRQOL:** Health Related Quality of Life; **QOL:** Quality of Life; **SPSS:** Statistical Package for Social Sciences; **WHO:** World Health Organization; **WHOQOL-BREF:** World Health Organization Quality Of Life-BREF Questionnaire.

## SUMMARY

The objective of the study was to assess the health-related quality of life (HRQOL) of elderly population in Bengaluru South.

This was a Community based cross sectional study conducted in areas of South Bengaluru after obtaining approval from Ethical Committee. Participants were included in this study after inclusion criteria have been satisfied. Interview was carried out after getting their verbal consent. Data was collected by direct interview method using World Health Organization Quality of life-BREF questionnaire (WHOQOL-BREF) and a specially designed questionnaire. Obtained data was analysed using SPSS version 16. The difference between mean scores were tested using independent sample *t*-test and ANOVA.

Out of the total 400 participants, 54.75% (219) were in the age group of 60-69 years. There was a male preponderance in our study group (60.25%). 43.25% (173) of the elderly in our study were educated up to high school and 29.25% (117) had no formal education. In our study, 31% (124) were widowed and the rest stayed with their partners. Our study also showed that the elderly subjects who walked and exercised regularly and did meditation/yoga had significantly higher QOL scores in all domains

20% (80) of the study population did not have any disease. 32.75% (131) of the study group had comorbid conditions. Hypertension and vision impairment were the most prevalent health conditions. Our study showed that

about 48.25% (193) of the elderly group had an average QOL score which was neither poor nor good and overall health showed a trend which was good. Overall mean score of quality of life was 51.97.

The mean scores of physical, psychological, social and environmental was found to be 48.60, 51.26, 48.37 and 59.66 respectively. The quality of life was significantly lower among subjects with advancing age, those with no formal education and staying without a partner. Female subjects were having lower QOL when compared to males. Those with musculoskeletal disorders and hearing impairment had significantly lower QOL scores.

Our study concluded that most of the elderly population had a better mean QOL score in environmental domain, whereas physical and social domains were low; psychological domain was found to be in average range

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