

Quality of Life (QOL) and Its Associated Factors Using WHOQOL-BREF Among Elderly in Urban Puducherry, India

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ABSTRACT

Background: Quality of Life (QOL) among elderly is a neglected issue especially in developing countries including India.

Aim: To assess the QOL and its associated factors among elderly population.

Materials and Methods: A community based cross-sectional study was conducted among 300 elderly subjects in urban Puducherry, India. Data on QOL was assessed by World Health Organization Quality of Life BREF (WHOQOL-BREF) and Activities of Daily Living (ADLs) by Katz ADL scale. Socio-demographic factors and chronic morbid conditions were recorded by using structured questionnaire.

Statistical Analysis: Independent sample test and multiple linear regression analysis.

Results: Majority (64%, 192) were in the (60-69) years' age-group. Overall mean Standard Deviation (SD) score of QOL was 49.74 (10.21). QOL was significantly low among those with no schooling, nuclear family, not receiving pension, not with partner, having musculoskeletal disorder, low vision and impaired ADL groups in univariate analysis. Multiple linear regression analysis revealed that older age ($p=0.014$), no schooling ($p=0.004$), without spouse ($p<0.001$), nuclear family ($p=0.039$), musculoskeletal disorder ($p<0.001$), low vision ($p=0.049$) and hearing impairment (0.001) were associated with low QOL score.

Conclusion: QOL score among elderly is average, while social relationship domain of QOL score was found to be low. Health education with regard to activity and environmental changes and increase in social relationship may help in improving the QOL among the elderly population.

Keywords: Quality of Life (QOL), World Health Organization Quality of Life BREF (WHOQOL-BREF), Activities of Daily Living (ADL)

INTRODUCTION

At global level, QOL among 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 increase in proportion of elderly population in near future [1]. For India, the population of above 60 years was around 7% in 2001, which is expected to rise to 11.6% by 2026 [2]. Also, presently the epidemiological transition of diseases with increase in burden of chronic morbidity conditions, which is driven by population ageing, will affect the QOL of elderly population. In view of the above, it is imperative to analyse the QOL and its associated factors among this vulnerable population so that effective measures to improve the QOL can be implemented at community level.

Very few studies had been conducted to assess the QOL among elderly in India [3,4]. Many studies were conducted on QOL among elderly in other countries [5-10]. It was known that socio-demographic factors like age, education, marital status and family structure influence the QOL among elderly population [3, 10]. In addition, various studies have shown that chronic morbid conditions are associated with low QOL [11]. But, there is paucity of information with regard to this in developing countries including India. WHOQOL-BREF instrument includes four domains of QOL namely physical health, psychological, social relationships and environment. This study aimed to explore and compare QOL in four domains and its associated factors among elderly in urban Puducherry, India.

MATERIALS AND METHODS

Setting and Study Design

A community based cross-sectional study was conducted during April to June 2013, in four service areas attached to a medical institution in urban Puducherry, India. These four areas included Chinnayapuram, Kuruchikuppam, Vaithikuppam and Vazhakulam.

The total population of four areas is about 9000 and geriatric population (≥ 60 years age) is about 600 which form the reference population.

Sample Size Estimation

Considering the expected Standard Deviation (SD) of the QOL score in the elderly population as 13 and tolerable error as 1.5 at 95% confidence interval, minimum sample size was found to be 289. After adding a non-response rate of 10%, total sample size became 318.

Sampling Technique

The subjects were selected from each area by proportional to the population of eligible subjects present in each area. The study subjects in each area were selected by simple random technique using the family folder. The information about the eligible subjects were taken from the Public Health Nurses (PHNs) of the urban health center attached to the medical institution and the anganawadi teachers of the respective areas.

Study Tool

QOL was assessed by using WHOQOL-BREF scale which was tested and validated [12]. This instrument contains four domains namely physical health, psychological, social relationships and environment with a total of 26 questions. Each of these domains were rated on a 5-point Likert scale. As per the WHO guidelines, 25 raw scores for each domain was calculated by adding values of single items and it was then transformed to a score ranging from 0 to 100, where 100 is the highest and 0 is the lowest value. The mean score of each domain, total score and average score were calculated. This questionnaire was translated to Tamil and then, back to English to assess the liability of the instrument. Pilot-test was done before the survey.

ADL was assessed by using Katz ADL scale which contains 6

questions on various aspects of daily activities [13]. The score ranging from 0 to 6, where 6 is the highest score with independence in ADL and 0 is the lowest score with highly dependent on ADL.

Method of Data Collection

After obtaining informed consent, the study subjects were interviewed at their homes and the data was collected on socio-demographic factors and morbidity status of the subjects using structured questionnaire. Four interns were given training about the importance, application of the instrument WHOQOL-BREF, data collection process and they were supervised by the investigators. If the designated subjects were not available even after 2 visits, they were considered as non-respondents. Data on socio demographic characteristics that include age, sex, education, family type, marital status and pension were collected using a structured questionnaire. Morbidity status was assessed based on the previous diagnosis by a registered medical practitioner.

Statistical Analysis

The collected data was entered and analyzed by using SPSS (Statistical Package for Social Sciences) version 16.0 for Windows. The findings were expressed in terms of mean and SD. The difference between mean scores was tested by using independent sample t-test. Multiple linear regressions analysis was done to determine the independent effect of factors associated with QOL. P-value less than 0.05 was considered as significant.

RESULTS

A total of 300 subjects were participated with the response rate of 94.3%. Majority (64%, 192) were in the 60-69 years' age-group. About 39.7% (119) of them were males. About 2/3 of them 63.7%, (191) lived with their partner and 39.3% (118) had not gone to school. With respect to morbidity status, 42.3% (127) were hypertensive, 35.3% (106) had musculoskeletal disorders, 30.7% (92) had low vision, 25.3% (76) had diabetes, 15.3% (46) had hearing impairment and 6% (18) had impaired ADL.

Overall mean (SD) score of QOL was found to be average. But, mean score for social relationship domain was comparatively lower than physical, psychological and environmental domains [Table/Fig-1].

Independent t-test showed that QOL was significantly low among those with no schooling, nuclear family, not receiving pension, not with partner, having musculoskeletal disorder, low vision and impaired ADL groups [Table/Fig-2]. Musculoskeletal disorder, low vision, diabetes, hearing impairment and impaired ADL were found to be significant factors in physical domain of QOL score, while only musculoskeletal disorder was found to be significant in psychological domain of QOL score. Low vision and musculoskeletal disorder was significantly associated with social relationship domain score, while hearing impairment and ADL was significantly associated with environmental domain score of QOL [Table/Fig-3].

Multiple linear regression analysis revealed that older age, no schooling, without spouse, nuclear family type, musculoskeletal disorder, low vision and hearing impairment were independently associated with low QOL score [Table/Fig-4].

DISCUSSION

Our study highlighted the fact that overall QOL is average while social relationship domain of QOL showed below average score. Other studies have shown higher mean scores of social relationship domain compared to this study, while other 3 domain namely physical, psychological and environmental were found to be comparable [3]. A study among epilepsy subjects found that the mean total score of the QOL scale was 61.49 which was higher than our study [14]. It also showed that older adults in long stay

care facilities had the social relationship score as high as 68 [10]. A study conducted in semi-urban area of Thailand found that subjects had a higher QOL score in aspect to physical health, mental health and social relationships compared to rural area [5]. The difference observed in QOL score in different domains may be due to difference in the pattern of associated factors which influence QOL in different settings. Definition and instrument used to assess QOL and urban-rural difference may be the other factors responsible for this observation.

Our study found that age independently, influence the QOL score with older age-group had lesser QOL score similar to another study [3]. Similarly, we found that education status, type of family and marital status had an influence on the QOL score. Older adults who are younger with higher levels of schooling had better perceptions of their QOL [10]. Also, overall well-being was significantly affected for those who were not living with spouse similar to another study [3]. As far as family structure is concerned, our study showed that QOL is better in joint families compared to nuclear families. A study reported that those who reported loneliness had significantly lower health-related QOL than those who did not [15]. The best qualities of life in the environmental domain were those of married people, white collars, and persons who declared their health status to be the

Domains of QOL (Maximum score 100)	Mean score (SD)	Median score
Physical	55.17(12.50)	56.0
Psychological	54.61(11.92)	56.0
Social relationship	36.68(16.44)	31.0
Environmental	52.49(12.08)	50.0
Final score	49.74(10.21)	51.5

[Table/Fig-1]: QOL scores of study population (N=300)

Associated factors	Number of subjects	Mean (SD) score	p-value
Age (in years)			
60-69	192	51.26 (9.67)	0.256
≥ 70	108	47.03 (10.62)	
Sex			
Male	119	51.45 (9.67)	0.317
Female	181	48.61 (10.42)	
Education			
No schooling	118	44.12 (11.39)	0.000*
1st-12th standard	182	53.38 (7.38)	
Family type			
Joint/Extended	94	50.36 (9.20)	0.047*
Nuclear	206	49.45 (10.65)	
Marital status			
With partner	191	53.09 (8.32)	0.015*
Single/widow/separated	109	43.87 (10.60)	
Pension			
Yes	252	50.05 (9.69)	0.002*
No	48	48.09 (12.60)	
Musculoskeletal disorder			
Yes	106	45.63 (11.29)	0.003*
No	194	51.98 (8.83)	
Hypertension			
Yes	127	50.48 (10.73)	0.081
No	173	49.19 (9.81)	
Diabetes			
Yes	76	49.78 (9.96)	0.878
No	224	49.72 (10.32)	
Low vision			
Yes	92	46.38 (11.71)	0.003*
No	208	51.22 (9.11)	
Hearing impairment			
Yes	46	45.85 (8.54)	0.078
No	254	50.44 (10.35)	
Activities of daily living			
Normal	282	50.20 (10.23)	0.025*
Impaired	18	42.43 (6.62)	

[Table/Fig-2]: Association of QOL score with socio demographic factors and morbidity status. N=300. *p value less than 0.05 is considered as significant

Morbidity status	Physical domain Mean (SD)	Psychological domain Mean (SD)	Social relationship domain Mean (SD)	Environmental domain Mean (SD)
Musculoskeletal disorders				
Yes	53.92 (14.20)	50.91 (13.96)	30.73 (17.43)	46.97 (10.93)
No	55.86 (11.45)	56.63 (10.13)	39.93 (14.95)	55.5 (11.63)
p-value	0.001*	0.000*	0.05*	0.248
Hypertension				
Yes	54.42 (13.20)	55.84 (13.41)	37.54 (14.72)	54.10 (12.66)
No	55.73 (11.97)	53.70 (10.65)	36.05 (17.61)	51.30 (11.53)
p-value	0.339	0.097	0.070	0.136
Diabetes				
Yes	52.83 (10.62)	55.57 (10.78)	36.51 (18.10)	54.19 (11.48)
No	55.97 (13.01)	54.28 (12.29)	36.74 (15.88)	51.91 (12.25)
p-value	0.030*	0.433	0.113	0.834
Low vision				
Yes	51.59 (14.44)	50.34 (11.53)	33.18 (20.00)	50.39 (12.47)
No	56.76 (11.22)	56.50 (11.63)	38.23 (14.38)	53.41 (11.82)
p-value	0.002*	0.131	0.000*	0.740
Hearing impairment				
Yes	49.76 (16.37)	51.48 (9.84)	33.54 (15.90)	48.63 (8.56)
No	56.15 (11.44)	55.17 (12.19)	37.25 (16.50)	53.19 (12.50)
p-value	0.000*	0.676	0.612	0.000*
Activities of daily living				
Normal	55.70 (12.03)	55.10 (11.92)	37.02 (16.68)	52.94 (12.06)
Impaired	46.94 (16.72)	46.89 (9.30)	31.33 (10.97)	44.56 (9.51)
p-value	0.004*	0.302	0.066	0.024*

[Table/Fig-3]: Association of QOL domain score with morbidity status.
*p value less than 0.05 is considered as significant

Associated factors	Standardised beta coefficient	p value
Constant	22.39	
Age (in years)	-0.127	0.014*
Sex	-0.033	0.517
Education	0.327	0.000*
Marital status	0.167	0.004*
Family type	-0.099	0.039*
Pension	0.037	0.486
Musculoskeletal disorders	0.281	0.000*
Hypertension	-0.006	0.905
Diabetes	0.056	0.263
Low vision	0.102	0.049*
Hearing impairment	0.182	0.001*
Activities of daily living	-0.008	0.880

[Table/Fig-4]: Multivariate linear regression analysis of QOL score.
R²=0.380; Adjusted R²=0.354; SE=8.205
*p value less than 0.05 is considered as significant

best [16]. Studies have shown that psychological factors and socio-demographic characteristics such as marital status and others had an impact on QOL of elderly population [9].

Chronic morbid conditions have an effect on QOL as illustrated in other studies [11,17]. But, hypertension and diabetes was not found to be significantly associated with QOL in our study. This may be because of absence of complications or other co-morbidities which were not assessed in our study. A study showed that there is a need for actions to control systemic arterial hypertension and its associated complications with the purpose of improving QOL [18]. Although hypertension is often perceived as asymptomatic, it is associated with impaired QOL because of complications or co-morbidities, awareness of the diagnosis, and adverse effects from antihypertensive medications [19]. The patients with DM with other comorbid conditions had low QOL score in comparison to the group without co-morbidity in all 4 domains of QOL [20].

Our study found that presence of musculo-skeletal disorders, low vision and hearing impairment were significantly associated with the low QOL score. Older adults with Osteoarthritis of the lower extremities undergo a significant impact on multiple dimensions of QOL, compared with healthy controls [8]. A study has shown that functional status had no influence on the QOL in the analysis models in active elderly, similar to our study [9]. In view of the above findings, it is suggested that presence of morbidities and its complications is an important factor to be considered during the assessment of QOL among the elderly.

LIMITATIONS

The present study has got its own limitations. There may be subjective bias introduced during the interview period. Under reporting of chronic diseases is also another limitation because the study has taken into consideration only the diagnosed cases. We could not study some factors like mental health status, complications of chronic morbid conditions of the elderly due to feasibility constraints. In spite of these limitations, this community based cross-sectional study gives valuable information on the QOL and its associated factors among elderly population using a standard instrument.

CONCLUSION

QOL score among elderly is average, while social relationship domain of QOL score was found to be low. Empowerment of the elderly with respect to improve the degree of independence they feel comfortable will help in increase of psychological domain of QOL. Controlling and modifying environmental factors to improve the feeling of self-efficacy will help in improvement of environmental domain. Social and physical recreational activities will help in building self-image, satisfaction level and QOL. Health education with regard to activity and environmental changes and increase in social relationship may help in improving the QOL among the elderly population. Further analytical studies will help in understanding the association of factors influencing QOL score.

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