

Quality of life among geriatric population residing in Bhavnagar city, Gujarat, Western India

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ABSTRACT

Background: All of the health status, lifestyle, satisfaction, mental state, or well-being, all facets of health status together reflect the multidimensional nature of quality of life (QOL) in an individual. Our objective is to assess quality of life and factors affecting quality of life. **Methods:** We conducted a community-based cross-sectional study among 260 subjects (aged ≥ 60 years) residing in 13 wards of Bhavnagar city during September 2019–2020 after taking permission from ethics committee (no. 892) using the World Health Organization Quality of Life BREF-25 (WHO QOL BREF-25) scale. We assessed psychiatric morbidity using General Health Questionnaire-12 scale. Independent *t*-test was performed to find out factors associated with quality of life. **Result:** Among 260 subjects, 36% were males. Study found highest score in psychological domain and lowest score in physical domain of WHO QOL BREF-25 scale. Physical health was better among Muslims, geriatrics <75 year of age, not addicted abusive substance and no co-morbid condition, whereas geriatrics belonged to upper socio-economic status and normal as per *General Health Questionnaire-12* scale had better social relationship. Environmental domain score was significantly better among males and geriatric without co-morbidity. **Conclusion:** These findings highlight the importance of active ageing interventions in order to improve the quality of life.

Keywords: Geriatric, quality of life, WHO QOL BREF-25

Introduction

In developing countries, the geriatric population is precipitously increasing because of increased life expectancy and decreased fertility, which can pose challenges to healthcare. India and China are major contributors to the geriatric population in Asia.^[1-3] In India, geriatrics constitute 8.6% of total population.^[4] Individuals' life trajectory, collective life, access to education, life style, health and general care all contribute to the process of ageing.^[5] Ageing is influenced by socio-economic and biological risk factor in one's life.^[6]

Quality of life is defined as individuals' perception of their position in life in the context of the culture and value in which

they live and in relation to their goals, expectations, standard and concerns.^[7] It is a broad concept covering physical health, mental health, social relationship, spiritual belief and environment. Old age is heterogenous; there are people who grow older with good quality of life while some experience fatigue, anorexia, co-morbidity and depression which affect the quality of life.

The growing number of geriatrics, combined with changing family relationships and limited income support for the geriatrics, poses a variety of social, economic and health-care policy challenges.^[8] Retirement, the death of a spouse and financial difficulties have all been linked to an increase in the loss of functional capacity and physical control among the geriatric.^[9] The nuclear family has become more popular as a result of rapid expansion and modernity. The geriatrics suffer psychologically as a result of this, and sometimes, they move to nursing home.^[10] As a result of the combined impacts of ageing, societal changes and illnesses, their health and well-being are likely to deteriorate.^[11]

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If longevity is combined with quality, then feeling of contentment can be achieved.^[12] Various socio-demographic factors such as age, gender, type of family, education, religion, addiction psychiatric condition and co-morbid condition affect the quality of life of geriatrics.^[13-15] Factors that affect the quality of life are crucial for primary care physician to know about mental health, disease burden and disability among geriatrics. These factors will enable primary care provider to improve the medical condition and quality of life among the geriatric population. Quality of life among geriatrics needs to be assessed to determine suitable intervention. Therefore, it is essential to ascertain the geriatrics' quality of life. Our objective is to assess quality of life among geriatric population residing in Bhavnagar city.

Methods

Study design and setting

We conducted community-based cross-sectional study to assess quality of life among the geriatric population residing in 13 wards of Bhavnagar city (Gujarat state, western part of India) having a total population of 0.6 million from September 2019 to September 2020.^[16] Total geriatric population in Bhavnagar city is 48,000 (8% of the total population). The literacy rate of the geriatric population residing in urban is 66.^[17]

Study population

We included geriatric population (aged ≥ 60 years) residing in 13 wards of Bhavnagar city.

Sample size

A sample size of 260 was calculated using Epi Info software version 7.0 (Centre for Disease Control and Prevention CDC, Atlanta, USA).^[18] Previous study found highest score in psychological domain 81^[19] and confidence level as 95%, and allowable error (L) as 10% and non-response rate 10%. Participants were included if they were aged 60 years and above (definition of geriatric as per Nation Policy on Older Person),^[20] identified by simple random sampling from an electoral list, who were ambulatory and who consented to participate in the study.

Recruitment and sampling

Bhavnagar city is governed by a municipal corporation which comes under Bhavnagar metropolitan region. There are 13 wards in Bhavnagar Municipal Corporation. Information regarding total population of geriatric was sought from the electoral list of the Election commission website. From each ward 3000–6000 geriatric people were separated out of total population. Subjects ($n = 260$) were recruited using stratified random sampling with equal allocation from community. From each stratum (ward), out of total geriatric study subjects, 20 subjects were selected by random selection using a random number table in open Epi software. A total of 260 subjects selected. After obtaining the list of geriatrics in each ward, primary investigator had contacted medical officer of respective urban primary health

centre (UPHC). In each UPHC, every 250 houses one ASHA is appointed for field activity. ASHA helps to search the houses from list easily. With the assistance of ASHA, these people were contacted, met and interviews were conducted. If study subject refuse to give consent or were not present at that time or died, then the next random number was selected.

Data collection tools

World Health Organization Quality of Life BREF-25 (WHO QOL BRFE-25) tool used to estimate the quality of life of geriatric people. Quality of life examined in four domains of (a) physical health (seven items) (b) psychological health (six items), (c) social relationships (three items) and (d) environmental health (eight items).^[21] It also consists of two other items for overall quality of life and general health.^[21] The physical domain included questions regarding pain, energy, sleep, work and activities.^[21] Questions in psychological domain were on positive and negative feelings and body image.^[21] Question in social domain included personal relationships and social support.^[21] Questions in environmental domain were on home and work environment and satisfaction regarding facilities such as transport, health, living and financial arrangements.^[21] Each item of the scale is rated from 1 to 5, and the score being computed, and transformed on the scale ranging from 0 to 100. A higher score on the scale is indicative of a better quality of life.

Tool for psychological morbidity

General Health Questionnaire-12 (GHQ 12) tool used for screening of psychiatric morbidity. GHQ-12 comprises 12 questions to evaluate the general level of happiness, the experience of depressive and anxiety symptoms, perceived stress and sleep disturbance. Each item is rated on Likert scale ranging from less than usual, no more than usual, rather more than usual, or much more than usual. In the present study, bi-model scoring method (0–0–1–1) was applied for scoring of GHQ and cut-off 2 was taken. GHQ score ≥ 2 indicates minor psychological distress.^[22]

Study variables

The primary outcome variable was the continuous variable, quality of life as per WHO QOL BREF-25. The predictor variables were gender, age in year, religion, education, marital status, living condition, socio-economic status, addiction to some abusive substance, psychological morbidity and co-morbidity.

Ethical considerations

We have obtained Ethics Committee approval from the Institutional Review Board, for conducting this study. Case record forms were coded, and unique identifier numbers were given to each study participant. Informed written consent was obtained from study subjects after explaining the nature and purpose of the study in vernacular (Gujarati) language. They were also informed about the potential benefit and expected duration of the study. The process of data collection did not involve any invasive process and did not pose any potential risk or harm to

the participants. All information collected during the study was kept confidential.

Quality control

Validated tools were used in the study and translated into vernacular language. Data entry was made in Epi Info software with appropriate data checks to avoid errors in data entry. The questionnaire was administered by the principal investigator to maintain the quality of data collection.

Pilot study

The final questionnaire was validated by two subject experts and was pretested by pilot survey on small group of individuals with the similar characteristic of inclusion criteria. The piloting of the questionnaire envisages few changes to be made to questionnaire, and second version of the questionnaire was prepared, which was used for the final data collection of the study. The data collected during the pilot study neither part of the sample size nor included in the final analysis.

Statistical analysis

Simple proportions were calculated for the categorical variables and mean (standard deviation [SD]) was calculated for continuous variables. Association between quality of life with different variable was analysed by independent *t*-test and $P < 0.05$ was considered as statistically significant.

Result

Characteristics of study participants

We included 260 study subjects in our study with a response rate of 100% (all participants agreed to participate in this study). Among participants, about two-fifth participants were males [Table 1]. The age range of participants was 60–98 years. The study found three-fifth males and seven-tenth of females belonged to young-old (60–69 years), about two-fifth male and one-fourth female were old (70–79 years). Regarding educational status, majority of respondents had no formal education. Four-fifth of study subjects were living with their family, and the majority of study subjects belonged to class IV according to modified BG Prasad classification.

Prevalence psychological distress and quality of life

According to WHO QOL BREF-25 scale, mean (\pm SD) score of the physical domain, psychological domain, social domain and environment domain was 56 (\pm 6), 67 (\pm 8), 59 (\pm 8) and 59 (\pm 6), respectively. As per GHQ, 21% (95% CI 14–31%) males and 24% (95% CI 18–31%) females had minor psychological distress. Impact of gender, educational status, age, marital status, living condition, socio-economic status, religion, co-morbidity, GHQ score and addiction on different domains of QOL was studied using independent *t*-test. Male gender, Muslim religion, upper socio-economic status, age, no addiction, no co-morbid condition, and psychological morbidity significantly affect QOL

Table 1: Characteristics of the geriatric population residing in Bhavnagar city during September 2019-2020 (n=260)

Characteristic	Number (%) or mean (\pm SD)
Female	166 (64)
Age	67 (\pm 6)
Educational status	
No formal education	110 (42)
Primary	99 (38)
Secondary and above	51 (20)
Married (vs. widow/widower)	244 (94)
Hindu	249 (96)
Muslim	11 (4)
Caste	
General	44 (17)
Other backward class	197 (76)
Scheduled caste	19 (7)
Type of family	
Nuclear	148 (57)
Joint	97 (37)
Single	15 (6)
Occupation	
Housewife/Retired	252 (97)
Labourer	8 (3)
Socio-economic status	
Class I	14 (5)
Class II	18 (7)
Class III	66 (26)
Class IV	97 (37)
Class V	65 (25)

as far as physical, social, and environmental domains were concerned [Table 2].

Discussion

Discussion of score of different domains

A cross-sectional study was carried out among geriatrics residing in Bhavnagar city to assess quality of life and correlate the QOL with socio-demographic variables. Present study found the highest score in psychological domain, while the lowest score in physical domain of quality of life. Muslim religion, male gender, upper socio-economic status, <75 years of age, no addiction, no co-morbid condition and no psychological morbidity significantly associated with quality of life.

Reason behind the highest score in psychological domain followed by environment domain is that the psychological health of geriatrics could be positively affected by living with peers in Bhavnagar city. In urban area, the geriatric has the added benefit of contact with doctors, nurses and social service staff. Healthy lifestyle such as physical activities, exercise and laughing club affects mental health. Higher score in environment domain might be because of physical safety and security, home environment, financial resources and availability of transport facility. Lower score in physical domain might be because as age increases work

Table 2: Association of quality of life with various socio-demographic factors among the geriatric residing in Bhavnagar city during September 2019-2020 (n=260)

	Physical domain	Psychological domain	Social domain	Environment domain
Gender				
Female	55.58±6.47	66.84±6.59	58.72±7.98	58.68±5.96
Male	55.95±5.74	67.32±7.91	59.89±7.65	60.25
P	0.645	0.660	0.252	0.032
Education				
Illiterate	56.40±6.37	67.37±8.34	59.57±7.37	59.26±5.79
Literate	55.20±6.05	66.75±8.36	58.83±8.23	59.64±5.64
P	0.124	0.553	0.451	0.987
Living arrangement				
Alone	58.37±8.88	65.27±8.72	61.11±5.14	58.12±3.69
With family	55.55±5.99	67.12±8.32	59.02±7.99	59.32±5.79
P	0.088	0.406	0.321	0.430
Marital status				
Married	55.59±6.02	67.19±8.41	59.13±7.84	59.40±5.72
Widow/Widower	57.47±8.65	64.32±6.96	59.37±8.54	57.03±4.90
P	0.242	0.183	0.906	0.107
Religion				
Hindu	55.59±6.29	67.05±8.44	59.25±7.67	59.19±5.77
Muslim	58.46±2.39	66.28±6.02	56.81±11.67	60.51±3.7
P	0.015	0.767	0.316	0.456
Socio-economic status				
Lower	55.50±6.72	66.65±8.20	58.25±8.47	59.02±5.79
Upper	56.06±5.26	67.62±8.57	60.62±6.53	59.63±5.54
P	0.478	0.362	0.018	0.407
Age				
>75 years	55.61±6.34	67.00±8.10	59.21±7.93	59.37±5.69
≤75 years	56.90±4.17	67.12±11.14	58.33±7.15	57.81±5.69
P	0.05	0.953	0.634	0.240
Addiction to abusive substance				
Absent	56.72±5.85	66.94±7.81	59.68±7.27	60.02±5.32
Present	54.98±6.39	67.15±8.69	58.77±8.29	58.76±5.89
P	0.026	0.839	0.363	0.080
Co-morbid condition				
Absent	56.72±5.85	66.94±7.81	59.68±7.27	60.02±5.32
Present	54.98±6.9	67.15±8.69	58.77±8.29	58.76±5.89
P	0.026	0.839	0.363	0.08
GHQ score				
Psychological morbidity	55.49±6.31	67.08±8.39	58.62±8.22	59.21±5.79
Normal	56.44±5.84	66.78±8.26	60.88±6.30	59.37±5.42
P	0.394	0.520	0.05	0.852

capacity, sleep quality of individual decreases. Moreover, most of study subjects are retired and retirement is closely related to poor health.

Discussion and comparison with other studies

The current study found the highest score in psychological domain followed by environment domain. Similar result found in study conducted in Brazil,^[19] while study conducted in Tripura found lowest score in psychological domain.^[23] The result we got might be because the study was conducted among rural geriatric population, where there were difficulties in availability of healthcare facility. Apart from that, lower socio-economic condition affects psychological condition of an individual.

Lack of facility of entertainment and shopping centre in rural areas that affect the psychological condition of individual. Another study conducted in Brail found that the highest score was found in the social relationship domain and the lowest for the environment.^[24] The lowest score in the environmental domain shows that the geriatrics in this study may have trouble adjusting to their surroundings. Furthermore, the lower score in the environmental domain could have been influenced by most of geriatrics in this study, who live on 1–3 minimum wages. This circumstance may jeopardize the elderly's ability to meet their needs, increasing their risk of becoming ill and negatively impacting their quality of life. Study conducted in Haryana, Iran, Karnataka and Taiwan found highest scores in environment

domain.^[25-28] Result might be due to pollution free, stress free and greener environment in rural area. Similar result found in the study conducted in Karnataka^[26] Iran^[27] and Jammu,^[29] while study conducted in Kuala Lumpur reported highest score in physical domain.^[30] The result might be because the study conducted among geriatrics in non-government organizations, where basic criteria for admission were capacity to perform basic activity of daily living. Study conducted in Poland and Malaysia found highest score in social domain and lowest score in physical domain.^[31,32] This result we got might be because physical functioning decreases with age and impacts on the quality of life. Study conducted in Iran found highest score in social domain.^[33] The prevalent Iranian culture prioritizes the older people among family members and relatives and fosters a positive social relationship between young and old.^[33]

Association between gender and environmental domain

In the present study, score of environmental domain amongst male was higher and was found to be statistically significant. Similar result found in study conducted in Vietnam,^[34] West Bengal,^[35] Maharashtra^[36] and Jammu.^[29] The findings might be explained by the fact that Indian culture is thought to be male-dominated, with men having more decision-making authority than women, giving them more opportunities to engage in recreational/leisure activities.

Association between age and physical domain

Present study found age significantly associated with physical domain. Similar result was found in the study conducted in Kuala Lumpur, Karnataka, Maharashtra, Poland and Jammu.^[29-31,36,37] This is probably because with ageing, the probability of developing physical health problems like musculoskeletal problems tends to rise. Apart from that, those geriatrics had more functional limitations compared to the adult.

Co-morbid condition and physical domain

In the present study, those with a co-morbidity had significantly lower quality-of-life scores in physical domains. Similar result found in the study conducted in Kuala Lumpur,^[30] Brazil^[38] and tribal region.^[39] Result we got might be because co-morbid condition negatively affects health of geriatrics.

Socio-economic status and social domain

This study found that socio-economic status significantly associated with social domain of quality of life. Study conducted in Kuala Lumpur also found similar result.^[30] Study conducted in tribal dominant state found that lower socio-economic condition is predictor of quality of life.^[39] A good economic status was required to meet fundamental living necessities, engage in society and relieve geriatric people of their concerns about unforeseen future bills. All these aspects can improve one's quality of life. It is essential to have an adequate amount of money to cover and meet one's essential demands.

Addiction and physical domain

In the current study, score of physical domains for those who were not addicted to abusive substances was higher than counterpart and was found to be statistically significant. Similar results were found by the study conducted in Kuala Lumpur.^[30] This is because of abusive substances associated with multiple non-communicable diseases and could negatively affect the quality of life.

Psychological morbidity and social domain

In the current study, score of social domain amongst geriatric study subjects who were normal was higher than those who had psychological morbidity. Other studies found similar results.^[28,40] It might be because social participation improves psychological condition. Another study found that those who lived alone have lower score of quality of life.^[39]

Our study has limitations. The study design was cross-sectional, and it is hence difficult to establish cause–effect relationships. Social desirability bias may cause some to over-report their quality of Life.

Conclusion

Findings of this study highlight the importance of active ageing interventions in order to improve the quality of life. Geriatric care and counselling should be made available in the community to serve the aged, particularly those who believe their health is deteriorating. To improve quality of life among geriatric inclusionary, initiatives such as involvement in social groups should be encouraged at community level. Mix-method approach could be carried out to strengthen the finding of the present study.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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