Original Article

A Study on Quality of Life among the Elderly at Urban Health Center in North Delhi

Gunjan Mahaur, Archana Dwivedi[1], Deepika Joshi[1], Nidhi Dwivedi

Department of Community Medicine, North DMC Medical College, Delhi, [1]Department of Neurology, IMS, BHU, Varanasi, Uttar Pradesh, India

Abstract

Background: Elderly population in India is growing around 3% annually and is supposed to triple by 2050 than that at the time of 2011 census, according to a country report published by the UN Population Fund (UNFPA, 2017). A better quality of life (QOL) of the elderly has become a major public health challenges of the 21st century, so timely emphasis on maintenance of physical health and psychological issues is crucial. Therefore, the aim of the present study is to measure QOL among the elderly population and to find out the association with sociodemographic factors. **Materials and Methods:** This is a cross-sectional study done among the elderly population of an urban health training center. The study includes the World Health Organization Quality of Life Questionnaire-Brief version and a questionnaire for sociodemographic variables. Univariate and multivariate analyses were used to determine associations and *P* value. **Results:** The overall QOL scores ranged between 52 and 110, with a mean score of 78.59 ± 12.6. Good QOL was observed among 64.9%of the elderly, excellent was observed among 19.8%; and the rest 15.3% had fair/average, while none of the elderly had poor QOL. Determinants significantly associated with QOL with $P < 0.05$ are age, educational status, professional status, marital status, and behavior of children with them and the elderly with comorbidities. **Conclusion:** This study shows the association of multiple factors with QOL among the elderly. Factors such as age, educational status, professional status, marital status, and behavior of children with them and the elderly with comorbidities significantly affect the QOL of the elderly. Hence, strengthening the health-care system, increase in level of education, encouraging social interaction, social security systems, and better environmental infrastructure could potentially increase QOL of the elderly population.

Keywords: *Elderly, quality of life, sociodemographic factors*

Submitted: 20-Apr-2022
Revised: 02-Mar-2023
Accepted: 12-Mar-2023
Published: 23-Feb-2024

Introduction

The World Health Organization (WHO) defined QOL as "an individual's perception of their position in life in the context of culture and value system, in which he or she lives and in relation to his or her goals, expectations, standards, and concerns."[1] The concept of health-related QOL is broad and multidimensional, encompassing subjective evaluations of both positive and negative aspects of life. The QOL is affected by physical health, psychological condition, environmental factors, level of independence, and social relationships, which are clearly shown to influence the health of a person.[2] Due to demographic shift toward aging society, QOL of the elderly has become relevant. The annual increase in global geriatric population aged ≥60 years is faster than that in any other age group and it will nearly double from 12% in 2015 and 22% by 2050 with 80% of older people living in middle- and low-income countries including India.[3] Determinants of QOL show

Access this article online

Quick Response Code:

Website: https://journals.lww.com/jomh

DOI: 10.4103/jmh.jmh_82_22

Address for correspondence: Dr. Nidhi Dwivedi, Department of Community Medicine, North DMC Medical College, Delhi, India.
E-mail: nidhi.stats@gmail.com

How to cite this article: Mahaur G, Dwivedi A, Joshi D, Dwivedi N. A study on quality of life among the elderly at urban health center in North Delhi. J Mid-life Health 2023;14:246-51.

QOL of the elderly and that of general population are significantly different. The WHO has recently warned the member countries that as people across the world live longer, soaring levels of chronic illness and diminished well-being are poised to become a major global public health challenge.[4] This long-term burden of illness and diminished well-being affects patients and their families, strain health-care systems, and economies, and is forecast to accelerate.[4] Furthermore, older people are often invisible in statistics as we have so little information about them. While we know that some people lose physical and mental capacities as they age, we know too little about their needs and whether their environments can compensate and allow them to live with dignity, continue to be active, and able to thrive.[5] Longevity is a huge success of public health, but it must come along with the quality, i.e. adding life to years and not just years to life. Hence, more research and interventional approaches emphasizing the medical and psychological and social difficulties faced by geriatric people are the need of current time. Therefore, it is important to have information on QOL of the elderly. Furthermore, while establishing a relationship between QOL and aging is still complex, developing a model for sociodemographics and morbidity-based QOL in the elderly at the population level provides a more internally consistent, faster, and cheaper alternative to case-by-case interpretation by a physician.

In the present study, we aim (1) to measure the quality of life (QOL) among the elderly attending the outpatient department (OPD) in a primary urban health training center (UHTC) and (2) to find out the association between the sociodemographic factors and QOL of the elderly population in the study.

Materials and Methods

This is a cross-sectional study which was conducted in urban elderly population residing in field practice areas of urban health training center attached to the department of community medicine of a medical college in North Delhi from June 2020 to August 2020. All the patients who were attending the OPD at UHTC, Vivekanand Puri, Delhi, and were of 60 years and above were included in the study. Patients who were very severely ill persons not able to answer the questions and a person who does not give consent for the participation in the study were excluded. The sample size was calculated by using $4pq/r^2$.

Literature review revealed that the prevalence of morbidity and comorbidity is in the range of 40%–50%.[6] The sample size is calculated by presuming the prevalence of health problem in this age group to be 40%. Taking margin of error as 5%, the sample size came out to be 96 approximated to 100. Assuming nonresponse rate 10%, 110 individuals were taken up for the study. All the participants who met the inclusion criteria were included in the study till the target sample size was attained. Study tool: A predesigned questionnaire related to the QOL of elderly people devised by the WHOQOL[1] was used for the survey. The questionnaire was translated into local language and then was again back translated to maintain the content validity of the questions. It took into consideration four domains of QOL, i.e. physical, psychological, environmental, and social relationship.

The mean score of items within each domain was used to calculate the domain score.

If more than 20% of the data were missing from an assessment, then the assessment was discarded. Pro forma to study the health-related QOL: The WHOQOL-BREF[1] was used to assess the QOL. It took into consideration four domains of QOL, i.e., physical, psychological, environmental, and social relationship. It had 26 questions, and the mean score of items within each domain was used to calculate the domain score. A transformed score between 0 and 100 was developed for each domain for final analysis. Method for manual calculation of individual scores is as follows:

- Physical domain – ([6 − Q3] + [6 − Q4] + Q10 + Q15 + Q16 + Q17 + Q18) × 4
- Psychological domain – (Q5 + Q6 + Q7 + Q11 + Q19 + [6 − Q26]) × 4
- Social relationship domain – (Q20 + Q21 + Q22) ×4
- Environmental domain – (Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25) × 4.

The data were collected by trained health workers. Informed consent was taken.

From participants before initiation of the study, taking into consideration of the variable literacy status, a structured interview was carried out to fill up the questionnaire for each of the respondents. The study protocol was approved by the Institutional Ethical Committee. Scoring WHOQOL was done with the help of SPSS software (SPSS Inc. Released 2007. version 16.0. Chicago, USA). Appropriate statistical methodologies such as percentages, Student's *t*-test, and Chi-square test were used for analyzing data.

Results

Total 110 geriatric age group people (age 60 years or more) were included in the study. The sociodemographic characteristics of the 110 respondents have been studied. The age of the participants ranged from 60 to 83 years,

with a mean of 66.42 ± 5.60. A number of people belonging to the age group of 60–64 were 43 (39.1%) whereas 31 (28.2%) were between 65 and 69 years of age and 24 (21.8%) were between 70 and 74. Only 10.9% were above 75 years.

The majority (51.18%) of the respondents were male, and 85.6% followed the Hindu religion. About 95.5% of them were married, and 4.5% were widower/widowed. Most of them (93.7%) were living with spouse and children, and only 6.3% were not living with a family.

The majority of the elderly population (51.4%) are illiterate, followed by group having primary education (16.2%) and having education up to high school (13.5%), and only 9.9% are have education up to graduation. Majority 80.90% of the older adults were unemployed, followed by 7.2% of semi-skilled workers. The majority of them (37.3%) had a monthly family income between 23,674 and 47,347 INR rupees, and only 3.6% had a monthly family income <10,000 INR.

WHO QOL-BREF – the overall QOL scores of the older adults ranged between 52 and 110, with a mean score of 78.59 ± 12.6. The total score of QOL was further stratified into physical, psychological, social relation, and environment domains. In the physical domain, the score ranged between 6 and 18, with a mean of 12.55 ± 2.53. In the psychological domain, it was between 8 and 18, with a mean of 12.53 ± 2.05. The social relation domain score ranged between 4 and 20, with a mean of 13.53 ± 2.80. In the environment domain, the score ranged between minimum 6 and maximum 17, with a mean of 12.34 ± 2.28 [Table 1].

Based on the above mentioned scoring, out of total elderly population under study, 64.9% had good, 19.8% had excellent; rest of the 15.3% had fair/average QOL, while none falls in category of poor QOL. None falls in category of poor QOL. The relationship between age and QOL was negatively related to the $r = -0.351$ ($P < 0.05$) [Figure 1].

The impact of gender, educational status, marital status, living status, disease status and number of disease suffering from, on different domains of QOL was studied using independent *t*-test. Educational status effects all the domains of QOL. Marital status significantly affects physical domain and environment domain of QOL whereas disease status effects physical and psychological domains [Table 2].

Multiple linear regression techniques were used to assess the determinants of QOL. Determinants such as age, educational status, professional status, marital status, and behavior of children with them and the elderly who were on medication were statistically significant with $P < 0.05$ whereas religion, gender, living status, and income were not statistically significant [Table 3].

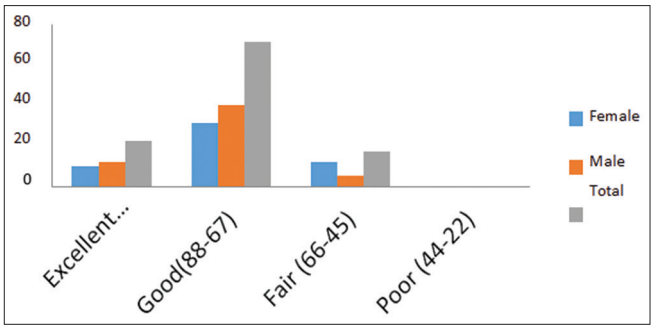

Figure 1: QOL score among study population. QOL: Quality of life

Table 1: Quality of life according to different domains among the elderly (*n*=110)

Domains	Mean±SD		
	Female	Male	Total
Physical domain	12.2±2.46	12.8±2.57	12.5±2.5
Psychological domain	12.4±2.23	12.6±1.87	12.5±2.05
Social relation domain	13.3±3.25	13.7±2.3	13.5±2.80
Environmental domain	11.9±2.50	12.7±2.0	12.3±2.28
Total	76.7±13.37	80.29±11.7	78.5±12.6

SD: Standard deviation

Health status and social interaction

The majority of the elderly population reported suffering from morbidity conditions (63.1%) whereas the other 36.9% are free from any morbidity condition. Further, out of the total population suffering from some kind of morbidity, 56.5% were suffering from hypertension and hypertension with other diseases, followed by 34.78% suffering from diabetes and diabetes with other diseases and 26.08% were suffering from complaints of joint pain. Only 28.19% of the elderly population do any physical activity in daily routine like waking for 30 min or more (77.72%), yoga, and meditation but majority 78.81% do not.

Discussion

The present study is a cross-sectional community-based study, carried out over a period of 3 months from April 2020 to June 2020 by the Department of Community Medicine, NDMC Medical College, New Delhi. The study has a total sample size of 110 elderly people. According to the WHO QOL-BREF, the overall QOL scores of the elderly were between 52 and 110, having a mean score of 78.59 ± 12.6. Out of total elderly population under study, 64.9% had good, 19.8% had excellent; rest of the15.3% had fair/average QOL, while none falls in category of poor QOL. In the study, it has been found that all the domains of QOL of the

Table 2: Association of quality of life with various sociodemographic factors among study population (*n*=110)

Variable	Physical domain	Psychological domain	Social relation domain	Environmental domain
Gender				
Female	12.2±2.46	12.4±2.23	13.3±3.25	11.9±2.50
Male	12.8±2.57	12.6±1.87	13.7±2.3	12.7±2.0
P	0.219	0.501	0.464	0.071
Education				
Illiterate	11.83±2.36	11.86±1.95	12.89±3.14	11.31±2.28
Literate	13.28±2.50	13.20±1.93	14.18±2.24	13.40±1.74
P	0.002	0	0.014	0
Marital Status				
Married	12.72±2.43	12.6±2.05	13.6±2.69	12.45±2.24
Widower/widowed	8.80±1.31	10.80±1.09	11.6±4.56	9.90±1.85
P	0.001	0.054	0.116	0.014
Are you living with children?				
No	13.55±1.99	12.67±1.21	13.43±2.76	12.78±2.25
Yes	12.47±2.55	12.51±2.10	13.53±2.82	12.31±2.29
P	0.279	0.854	0.924	0.596
Diseased				
No	13.53±2.66	13.18±2.14	13.71±2.51	12.33±2.33
Yes	11.95±2.25	12.14±1.90	13.42±2.97	12.34±2.26
P	0.001	0.009	0.606	0.967
Number of diseases suffering with				
One	12.40±2.60	12.26±1.86	13.81±3.01	12.42±2.52
More	11.56±1.83	12.01±1.96	13.05±2.92	12.27±2.04
P	0.122	0.599	0.29	0.791

Table 3: Determinants of quality of life among the respondents using multiple linear regressions (*n*=110)

Characteristics	β	SE	*P*
Constant	133.087	11.253	0.000
Age	−3.818	0.951	0.000
Income	1.311	0.715	0.070
Profession	−4.101	1.003	0.000
Marital	−10.140	4.511	0.027
With children	−1.357	3.883	0.727
Behavior	−2.931	1.003	0.004
Disease status	−4.181	1.961	0.035
Qualification	−1.720	0.781	0.030

SE of R^2=9.53156, R^2=0.470, Adjusted R^2=0.428. $P<0.05$ is considered as significant. SE: Standard error[7]

elderly are being affected by educational status. Other than educational status, physical domain of QOL is also affected by disease status as well as marital status, psychological domain of QOL is affected by disease status, and environment domain of QOL is affected by marital status significantly. Age, educational status, professional status, marital status, and behavior of children with them and comorbidities were found to be significantly associated with the QOL of the elderly.

In this study, the total sample size was 110 elderly people, with a mean age of study population of 66.42 ± 5.60. It was found that elder people of higher age group have poorer QOL as compared to lower age group elderly. Hence, aging shows a negative association with QOL of the elderly. The study by Gunawan *et al*. conducted in Indonesia also found that the younger elderly group reported a higher QOL than the older elderly group.[8] But Mudey *et al*. have found the statistically significant and higher scores for psychological domain than other domains of QOL among married elderly population to that compared to single/widowed.[9] Another study by Shah *et al*. (2017) have found significantly better physical, social, and environmental scores among married elderlies than among singles.[10] A study by Chawla *et al*. in Himachal Pradesh, India, has also shown that the mean score of all four domains was higher in the age group of 60–70 than in the age group of >70.[11] With advancing age, QOL deterioration could be due to decreasing level of independence, need of assistance for day-to-day life activity, chronic illnesses,[12,13] reduced ability of socialization, and financial insecurities.[14]

In the present study, 48.6% of the elderly population were literate while 51.4% were illiterate. All four domains of QOL of the elderly, i.e., physical, psychological, social, and environmental, were significantly affected by education, with QOL having positive association with literacy. Hence, the elderly with education had

better QOL compared to that for illiterates. A study by Shah *et al*., in an urban area of Ahmedabad, India, has shown significantly better physical, social, and environmental domain scores among literates than illiterates.[10] While Chawla *et al*., Himachal Pradesh, India, found better mean domain scores among literates as compared to the illiterates, but it was statistically significant only for social domain.[11] Similarly, a study by Zin *et al*. in Myanmar has also found that compared to higher educated, the elderly with lower education had lower QOL scores for the psychological, social, and environment domains.[6,13] Different education levels can create socioeconomic status inequalities. Better education might ensure better income and hence better living standards and health facilities, which in turn can facilitate higher QOL scores for the physical, psychological, and environment domains.[6]

Elderly people who are currently living with their spouse were found to have better QOL scores as compared to widower/widowed. Physical domain and environment domain of QOL of the elderly were significantly affected by marital status. The study by Qadri *et al*. and Barua *et al*. has found that married elderly have better QOL as compared to divorced/widowed/unmarried/living away from spouse people.[15,16] Chawla *et al*. have shown higher mean scores in all four domains for married people and mean social domain score to be statistically significant for married elderly people.[11] While Mudey *et al*. have found the statistically significant higher scores for psychological domain among married elderly population compared to single/widowed[9] and Shah *et al*. have found the significantly better physical, social, and environmental scores among married than among singles.[10] Similar results have been found by Zin *et al*. as well. Family relationships become critical for the elderly in general, but spouses in older age are more important as they may provide emotional, social, financial, and material support systems and can also provide personal care during illness.[6] The QOL of the elderly could depend on the support they get from their family, as it is perceived to be the main provider of social support and better environment. In the present study, we found a significant positive association between behavior of their children with the elderly and their QOL. Dongre and Deshmukh shown higher mean score for psychological, social and environmental domains for the elderly having good relations with family, being involved in decision making and not neglected by family members.[17] Ill-treatment of the elderly at home was a statistically significant determinant of QOL of the elderly in a study by Devraj and D'mello *et al*.[7]

In this study, 63.1% of the elderly were found to have the presence of at least one disease, mostly noncommunicable diseases. Out of total population suffering from any morbidity, 56.5% were suffering from hypertension with or without other comorbidities, 34.78% were suffering from diabetes with or without other diseases, and 26.08% have complaints of joint pain. Elderly participants with more than one comorbidity do not have any further decrease in QOL scores. Disease status affects the physical and psychological domains of QOL of the elderly. Similar to our finding, hypertension (41.4%) was the most prevalent morbidity in a study of Kishore *et al*.[18] and also in a study of Devraj and D'mello hypertension (65.4%), followed by diabetes (39.1%) and arthritis (17.7%).[7] While, in a study by Shah *et al*., joint pain and cataract were having the highest frequency.[10] Anemia and dental problems were the most frequent morbidity in a study by Qadri *et al*.[15] A study by Raggi *et al*. found angina, depression, and distant vision impairment only to be significantly associated with QOL of the elderly.[13] While Parker *et al*. found osteoarthritis, depression, and neurological disease to have significantly effected health-related QOL of the elderly.[12] A number of studies have shown an association of gender and income status with the QOL of the elderly, but in the present study, we did not find an association between gender, income, religion, and living status with the same. A study by Shah *et al*. has shown significantly better QOL as per all four different domains among males as compared to females.[10] Similar results have been found in other studies also where they have found that QOL was significantly better among male elderly in different domains of QOL as compared to that of the female elderly.[19-24] Similar to the finding of the present study, Zin *et al*. have also found no association between income and different domains of QOL of the elderly.[6] However, a study by Datta *et al*. has shown that with an increase in per capita monthly income, the QOL score improves significantly. The increase in per capita income indicates better socioeconomic status.[25] A study of Alexandre *et al*. has also found that income had an impact on the QOL.[26] Niedzwiedz *et al*. found lower QOL score in individuals having poor socioeconomic status.[27]

This study has some limitations. There can be a possibility of self-reporting bias and recall bias by the participants. As only diagnosed diseases were considered, there can be a possibility of underreporting of comorbidities that might have affected the study findings. Other than that study can have some regional bias, so data from different regions and larger data are needed for further validation of results of the present study and also for generalizing the results to the larger populations. As QOL of the elderly is multidimensional and broad and affected by various unique factors

encountered throughout life, using more number of variables would give us an even clear picture of QOL.

Conclusion

In this study, we reported determinants of QOL of the elderly. The QOL of elderly people is significantly affected by determinants of QOL as age, educational status, professional status, marital status, and behavior of children with them and elderly with comorbidities, whereas religion, gender, living status, and income do not have a significant association with QOL. Modifiable factors out of these determinants of QOL should be taken into consideration while planning programs for the elderly in the country. In particular, strengthening health-care system, increase in level of education, encouraging social interaction, social security systems, and better environmental infrastructure could potentially increase QOL of the elderly population.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Development of the World Health Organization WHOQOL-BREF quality of life assessment. The WHOQOL Group. Psychol Med 1998;28:551-8.
2. Ramadass S, Rai SK, Gupta SK, Kant S, Wadhwa S, Sood M, *et al.* Prevalence of disability and its association with sociodemographic factors and quality of life in India: A systematic review. J Family Med Prim Care 2018;7:1177-84.
3. World Health Organization. Ageing and health. 2018. Available from: https://www.who.int/news-room/fact-sheets/detail/ageing-and-health [Last accessed on 2023 Apr 10].
4. World Health Organization. Ageing Well Must Be a Global Priority. 2014. Available from: https://www.who.int/news/item/06-11-2014--ageing-well-must-be-a-global-priority [Last accessed on 2016 Sep 16].
5. World Health Organization.WHO launches Baseline report for Decade of Healthy Ageing. 2020. Available from: https://www.who.int/publications/i/item/9789240017900. [Last accessed on 2023 Apr 10].
6. Zin PE, Saw YM, Saw TN, Cho SM, Hlaing SS, Noe MT, *et al.* Assessment of quality of life among elderly in urban and peri-urban areas, Yangon Region, Myanmar. PLoS One 2020;15:e0241211.
7. Devraj S, D'mello MK. Determinants of quality of life among the elderly population in urban areas of Mangalore, Karnataka. J Geriatr Ment Health 2019;6:94-8.
8. Gunawan I, Lin MH, Hsu HC. Exploring the quality of life and its related factors among the elderly in Indonesia. South East Asia Nurs Res 2020;2:1.
9. Mudey A, Ambekar S, Goyal RC, Agarekar S, Wagh VV. Assessment of quality of life among rural and urban elderly population of Wardha District, Maharashtra, India. Ethnomed 2011;5:89-93.
10. Shah VR, Christian DS, Prajapati AC, Patel MM, Sonaliya KN. Quality of life among elderly population residing in urban field practice area of a tertiary care institute of Ahmedabad city, Gujarat. J Family Med Prim Care 2017;6:101-5.
11. Chawla B, Chawla S, Shashikantha SK, Kaur H, Kumar S, Aggarwal S. Take a stand against ageism: Quality of life among elderly in a rural area of Himachal Pradesh. Int J Community Med Public Health 2018;5:3582-7.
12. Parker L, Moran GM, Roberts LM, Calvert M, McCahon D. The burden of common chronic disease on health-related quality of life in an elderly community-dwelling population in the UK. Fam Pract 2014;31:557-63.
13. Raggi A, Corso B, Minicuci N, Quintas R, Sattin D, De Torres L, *et al.* Determinants of quality of life in ageing populations: Results from a cross-sectional study in Finland, Poland and Spain. PLoS One 2016;11:e0159293.
14. Kar B. Factors affecting quality of life of older persons – A qualitative study from Bhubaneswar, India. J Geriatr Care Res 2017;4:47-54.
15. Qadri SS, Ahluwalia SK, Ganai AM, Bali SP, Wani FA, Bashir H. An epidemiological study on quality of life among rural elderly population of Northern India. Int J Med Sci Public Health 2013;2:514-22.
16. Barua A, Mangesh R, Harsha Kumar HN, Mathew S. A cross-sectional study on quality of life in geriatric population. Indian J Community Med 2007;32:146-7.
17. Dongre AR, Deshmukh PR. Social determinants of quality of elderly life in a rural setting of India. Indian J Palliat Care 2012;18:181-9.
18. Kishore S, Juyal R, Semwal J, Chandra R. Morbidity profile of elderly persons. JK Sci 2007;9:87-9.
19. Joshi K, Kumar R, Avasthi A. Morbidity profile and its relationship with disability and psychological distress among elderly people in Northern India. Int J Epidemiol 2003;32:978-87.
20. Lokare L, Nekar MS, Mahesh V. Quality of life and restricted activity days among the old aged. Int J Biol Med Res 2011;2:1162-4.
21. Kumar SG, Majumdar A, Pavithra G. Quality of life (QOL) and its associated factors using WHOQOL-BREF among elderly in urban Puducherry, India. J Clin Diagn Res 2014;8:54-7.
22. Lahariya C, Khandekar J, Pradhan SK. A community based study of health related quality of life of the elderly in urban India. J Indian Med Assoc 2012;110:548-50, 559.
23. Ibrahim TM, Namir GA, Tariq SA, Nazar PS. Quality of life and morbidity pattern of Geriatric population in Erbil City. Middle East J Age Ageing 2010;7:233-50. Available from: http://www.me-jaa.com/mej'aaFeb2010/Quality.htm. [Last accessed on Oct 2013].
24. Muhwezi WW, Okello ES, Turiho AK. Gender-based profiling of quality of life (QOL) of primary health care (PHC) attendees in central Uganda: A cross sectional analysis. Afr Health Sci 2010;10:374-85.
25. Datta D, Datta PP, Majumdar KK. Association of quality of life of urban elderly with socio-demographic factors. Int J Med Public Health 2015;5:274-8.
26. Alexandre Tda S, Cordeiro RC, Ramos LR. Factors associated to quality of life in active elderly. Rev Saude Publica 2009;43:613-21.
27. Niedzwiedz CL, Katikireddi SV, Pell JP, Mitchell R. Socioeconomic inequalities in the quality of life of older Europeans in different welfare regimes. Eur J Public Health 2014;24:364-70.