Section: Community Medicine

Original Research Article

ASSESSMENT OF QUALITY OF LIFE AMONG ELDERLY IN SUBURBAN AREA OF CHENGALPATTU, TAMILNADU

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Abstract

Background: The aging population has longer life span than before and it is important to grow old with good quality of life for their well being. The current study is to assess the quality of life and its various influencing factors among elderly in sub urban area of Chengalpattu. **Materials and Methods:** Between October and November 2021, a cross-sectional community study was carried out in Chengalpattu. Participants were using a multistage random sample technique, and data were gathered using a validated semi-structured questionnaire. 110 older people were questioned for basic information, and the WHO-QOL-BREF was used to gauge quality of life **Results:** The mean age of study population was 68.13±7.33 and 94(85.50%) had any one comorbidity; majority had musculoskeletal disorder followed by hypertension and diabetes. Impaired activities of daily living, alone without spouse, affected the all four domains independently. The mean score of physical domains 44.18(17.08), Psychological domain 43.81(16.53), Social domain 36.05(19.74), Environmental domain 44.38(15.29) and final score 42.10(15.49) respectively. **Conclusion:** The elderly population is influenced by multiple factors like physical heath, and also emotional, psychological and financial support from kith and kin.

INTRODUCTION

Good health is vital to maintain an acceptable quality of life in older individual and to ensure the continued contributions of older persons to society.[1] The active ageing concept promoted by WHO "It is a process of growing older without growing old through the maintenance of physical, social and spiritual activities throughout a life time".[2] Every person in the world should have the opportunity to live a healthy long life. The ageing process represents the universal biological changes that occur with decrease in physical and mental capacity affecting cognition. The number and proportion of people aged 60 years and older in the population is increasing globally at an extraordinary pace as 1 billion at 2019. This number will be projected as 1.4 billion by 2030 and 2.1 billion by 2050 of world population.[3] As per national statistical office report elderly in India 2021 are 138 million and it projected to 194 million in 2031 as 41% increase over a decade.[4] WHO defines quality of life as an individual's perception 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.[5]

Ageing often associate with life transitions such as retirement, death of near ones, lack of employment, financial insecurity, ill health affect the quality of health and life of elderly.[6]

Studies conducted to assess the quality of life among elderly showed there is an influence by socio demographic factors, activities of daily living and chronic comorbid conditions.[7–12]

Many studies conducted in other countries, only limited studies are done in India. Hence the purpose

of this study is to measure the quality of life among the elderly and its associated factors.

Objectives

1. To assess the quality of life using WHO-QOL-BREF among elderly in urban field practice area of Chengalpattu medical college
2. To find the associated factors influencing quality of life among the study population like Socio demographic factors, comorbid conditions and Activities of daily living using Katz ADL index.

MATERIALS AND METHODS

A Community based cross sectional study was conducted between October 2021 to December 2021 in the urban field practice area of Chengalpattu medical college, Tamil Nadu among elderly aged (≥60 years) living in Hanumanthaputheri urban health centre. Eligibility criteria includes elderly residing in the area for more than one year and consented to participate in the study. Severely ill and bed ridden patients are excluded from the study. Based on the study by Ganesh Kumar et al.[7] among elderly population which was found to be 49.74±10.21 by using the formula n=Z2 SD2/d2 , SD=10.21,d= 2%absolute precision, the sample size was calculated to be 100. Allowing 10% of refusals, the sample size was calculated as 110.Multistage sampling method was adopted for sample selection and data collection. Six Health sub centre comes under Anumanthaputheri urban primary health centre which is the urban field practice area of Chengalpattu medical college. Malaipoonga health sub centre was selected randomly by lottery method ,which had 9358 population with 2340 households. Four wards were selected using a lottery method. to obtain a sufficient sample size, households were selected by house-to-house sampling after a random selection of a starting point. Finally, one eligible elderly participant from each selected household was randomly recruited. If there was no eligible person in the selected household, then the next household with an eligible elderly participant was chosen. Data were collected through face-to-face interviews using pre-tested semi-structured questionnaires. The questionnaires consisted of four parts: socio demographic characteristics, morbidity status , activities of daily living by Katz index of independence in activities of daily living (ADL) and the World Health Organization's Quality of Life short form (WHO-QOL-BREF)and Ethical approval was obtained from the Institutional Technical and Ethical Review Committee of Chengalpattu Medical College.

WHO QOL-BREF.[14] had 4 domains with 26 questions. Physical health, Psychological ,Social relationships, Environment each of these domains were rated on a 5-point likert scale, as per WHO guidelines 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. The mean score of each domain, total score and average score was calculated. The questionnaires were pre-tested among 60 elderly individuals from the selected areas. Cronbach's alpha for the WHOQOL-BREF questionnaire after the pretest was 0.77. The pretest results were used to modify and adjust according to the local context and study population. After modification, the Cronbach's alpha of the WHOQOL-BREF questionnaire was 0.87.

The Katz index of independence in activities of daily living (Katz ADL).[15] used to assess functional status as a measurement of the clients ability to perform activities of daily living independently. The index ranks adequacy of performance in the six functions of bathing, dressing, toileting, transferring, continence and feeding. Participants score yes/no for independence in each six functions. A score of 6 indicates full function, 4 indicates moderate impairment and 2/less indicates severe functional impairments. The data was entered in MS Excel and analysis using SPSS version 25. Descriptive statistics and summary statistics were calculated. For categorical data, frequency and percentage were calculated. The mean and standard deviation (SD) were calculated for continuous data. An independent t-test was performed to compare the QOL scores between the two groups. Multiple linear regression analysis was performed using the enter method to determine the association between the independent variables and QOL.

RESULTS

The study was conducted in urban field practice area of Chengalpattu medical college to find out the quality of life among 110 elderly individuals. The results were stated below.

Among the study participants 67(60.91%) were 60-69 years, 28(25.45%) belongs to 70-79years and 15(13.64%) were more than 80 years. The mean age of study participants was 68.13 ± 7.33. Majority were females 74(67.3%), 104(94.5%) following Hindu religion. Most of the participants 34(30.9%) were illiterate followed by 22(20%) were primary school, only 7(6.4%) were graduate. Around 60(54.5%) were unemployed, 35(31.8%) received pension either retirement or government old age pension scheme. Most of the participants belonged to class II 40(36.4%) according to modified BG Prasad scale.35 (31.8%) living with their spouse and children, 46(41.8%) were separated or widowed. [Table 1].

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Table 1: Socio demographic details of study participants

S.No	Parameters		Frequency(n=100)	Percentage
1.	Age	60-69 years	67	60.91%
		≥70 years	43	39.09%
2.	Gender	Male	36	32.7%
		Female	74	67.3%
3.	Religion	Hindu	104	94.5%
		Christian	4	3.6%
		Muslim	2	1.8%
4.	Education	Illiterate	34	30.9%
		Primary school	22	20.0%
		Middle school	20	18.2%
		High school	19	17.3%
		High secondary school	8	7.3%
		Graduate	7	6.4%
5.	Occupation in the past	Unemployed	60	54.5%
		Unskilled worker	13	11.8%
		Semiskilled worker	17	15.5%
		Skilled worker	8	7.3%
		Clerical/ Farmer	7	6.4%
		Semi profession	4	3.6%
		Profession	1	0.9%
6.	Socioeconomic status	Class I	10	9.1%
		Class II	40	36.4%
		Class III	25	22.7%
		Class IV	22	20%
		Class V	13	11.8%
7.	Family type			
		Joint family	61	55.5%
		Nuclear family	18	16.4%
		Three generation family	31	28.2%
8.	Marital status	Unmarried	3	2.7%
		Married	64	58.2%
		Separate / Divorced	4	3.6%
		Widowed	39	35.5%
9.	Living with	Spouse and children	35	29.1%
		Spouse	26	31.8%
		Children	32	23.6%
		Relative	5	4.5%
		Alone	12	10.9%

Among the study participants 94(85.50%) had any one comorbidity. Majority 60 (54.54%) had musculoskeletal disorder followed by hypertension 51(46.36%), diabetes 47(42.72%). Around 28(25.45%) of the study participants suffered with vision disturbance and 16(14.54%) hearing impairment, 2(1.8%) had Carcinoma cervix, 4(3.4%) had Cerebrovascular disease and 1(0.9%) had history of loss of limb due to an accident (fig - 1). According to Katz ADL index 30(27.3%) had impaired activities of daily living among the study participants.

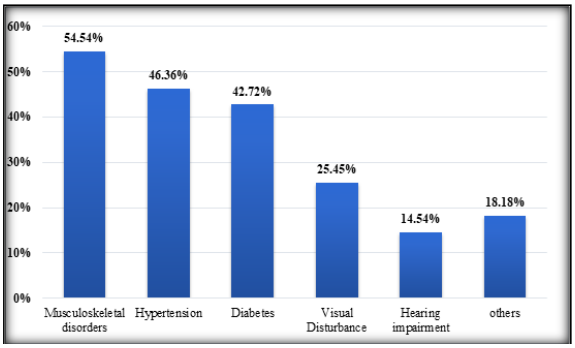

Figure 1: Morbidity Patterns of the Study Participants

Based on the study the mean and standard deviation was calculated for each domain and total score. Physical domain 44.18(17.08), Psychological domain 43.81(16.53), Social domain 36.05(19.74), Environmental domain 44.38(15.29) and final score 42.10(15.49). Social domain had low score compared to other domains. [Table 2]

Table 2: Quality of life score

Domains of QOL (Maximum score 100)	**Mean score**	**Standard deviation**
Physical domain	44.18	17.08

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Psychological domain	43.81	16.53
Social domain	36.05	19.74
Environmental domain	44.38	15.29
Final score	42.10	15.49

Table 3: Association between variables and quality of life

Variables		Physical domain Mean (SD)	Psychological domain Mean (SD)	Social domain Mean (SD)	Environmental Mean (SD)
Age group	60-69 years	48.55(15.43)	47.12(16.37)	41.82(19.48)	48.66(14.71)
	≥70 years	37.37(17.47)	38.65(15.61)	27.05(16.70)	37.72(13.86)
	p-value	0.001*	0.008*	0.000*	0.000*
Gender	Male	52.25(15.21)	49.58(14.55)	43.78(16.56)	48.75(15.66)
	Female	40.26(16.65)	41.00(16.80)	32.28(20.17)	42.26(14.74)
	p-value	0.000*	0.01*	0.04*	0.03*
Education	Up to middle school	41.12(17.10)	40.32(16.59)	32.58(19.06)	41.32(15.39)
	Above middle school	51.03(15.15)	51.62(13.66)	43.79(19.24)	51.24(12.79)
	p-value	0.004*	0.001*	0.005*	0.001*
Pension	Yes	46.14(20.82)	44.91(18.26)	37.34(23.36)	45.97(16.57)
	No	43.27(15.10)	43.29(15.76)	35.44(17.95)	43.64(14.71)
	p-value	0.413	0.634	0.640	0.459
Socioeconomic status	Up to middleclass	47.53(15.32)	48.96(14.19)	40.84(19.20)	48.55(14.02)
	Above middle class	37.00(18.62)	32.77(15.95)	25.77(16.96)	35.46(14.18)
	p-value	0.002*	0.000*	0.000*	0.000*
Living with pouse	Yes	49.84(15.31)	49.42(15.12)	46.02(18.70)	49.53(14.14)
	No	36.30(16.42)	36.00(15.32)	22.17(10.80)	37.22(14.00)
	p-value	0.000*	0.000*	0.000*	0.000*
Family type	Nuclear family	41.64(17.25)	40.07(16.09)	32.31(20.26)	40.56(15.01)
	Extended family	47.35(16.51)	48.47(16.03)	40.69(18.22)	49.14(14.40)
	p-value	0.082	0.007*	0.02*	0.003*
Activities of daily living	Impaired	34.87(16.12)	34.47(15.15)	25.17(15.29)	35.10(13.58)
	Normal	47.68(16.18)	47.31(15.73)	40.13(19.75)	47.86(14.49)
	p-value	0.000*	0.0000*	0.000*	0.000*
Morbidity status	Yes	41.56(16.39)	41.68(16.16)	34.19(19.79)	42.40(14.81)
	No	59.56(12.64)	56.31(13.12)	46.94(16.0)	56.00(13.04)
	p-value	0.00*	0.01*	0.01*	0.001*
Musculoskeletal disorder	Yes	40.07(15.46)	40.53(15.5)	31.68(17.7)	41.57(13.99)
	No	49.12(17.77)	47.74(16.96)	41.28(20.93)	47.76(16.21)
	p-value	0.005*	0.02*	0.01*	0.03*
Diabetes	Yes	42.40(16.96)	43.36(16.46)	36.34(21.01)	42.62(15.11)
	No	45.51(17.19)	44.14(16.71)	35.83(18.91)	45.70(15.41)
	p-value	0.348	0.80	0.89	0.29
Hypertension	Yes	41.29(16.34)	42.88(16.41)	33.73(20.34)	42.96(15.16)
	No	46.68(17.45)	44.61(16.74)	38.05(19.15)	45.61(15.43)
	p-value	0.10	0.58	0.25	0.36
Low vision	Yes	39.11(14.35)	35.79(14.28)	29.71(15.13)	38.75(15.52)
	No	45.91(17.6)	46.55(16.43)	38.21(20.73)	46.30(14.82)
	p-value	0.06	0.003*	0.04*	0.02*
Hearing impairment	Yes	37.13(11.20)	34.06(11.07)	26.13(13.41)	38.00(13.90)
	No	45.38(17.66)	45.47(16.78)	37.73(20.20)	45.47(15.32)
	p-value	0.07	0.01*	0.02*	0.07

Independent t test showed older age, female gender, low education level, living without spouse, impaired activities of daily living , musculoskeletal disorder were associated with low quality of life in all four domains. The nuclear family and low vision were associated with low quality of life in psychological, social and environmental domain. Hearing impairment is associated with low quality of life in psychological and social domain. Receiving pension, diabetes mellitus and hypertension were no influence on quality of life according to this study.

Multiple linear regression done for the variables which are significant in the univariate analysis against each domain. [Table 4]

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Table 4: Multiple linear regression

Variables	Beta coefficient	p-value	95% Confidence interval	
			Lower limit	Upper limit
Constant	19.959	0.153		
Age group	-2.956	0.251	-8.030	2.119
Gender	-0.902	0.753	-6.582	4.778
Education	3.012	0.255	-2.204	8.229
Family type	-7.386	0.003*	-9.288	1.816
Socio economic status	-3.736	0.185	-9.288	1.816
Living without spouse	-10.039	0.000*	-12.173	-2.599
Activities of daily living	9.574	0.001*	3.854	15.294
Morbidity status	8.620	0.021*	1.347	15.893
Musculo- skeletal disorder	-0.770	0.767	-5.914	4.375
Vision disturbance	3.251	0.339	-3.465	9.967
Hearing impairment	0.724	0.864	-7.665	9.113
R2 =53.1% , Adjusted R2=47.8%				
Coefficients (β) and 95% Confidence Interval (CI) of predictors for WHOQOL-BREF of elderly people				

The overall regression model is significant with a p-value -0.000. The predictors account for 53.1% of variance in the outcome variable. The predictor variables nuclear family type, morbidity status, living without spouse, impaired activities of daily living influence the outcome variable independently.

DISCUSSION

Among the 110 study participants mean age was 68.13±7.33, majority were 60-69 years and females. 94(85.50%) had any one comorbidity mostly had musculoskeletal disorder followed by hypertension and diabetes. 30(27.30%) had impaired activities of daily living. In this study the mean of physical domain, psychological domain, and environmental domain were almost similar, but the mean of social domain was low.

According to study done in Manipal , India by Anukur barual et al.[16] showed mean age of elderly population was 65.8 years ± 4.9 years , Rina K kumaratna et al.[17] study showed mean age 66.4±6.3 years which is similar to present study.

The mean score of physical domain 44.18±17.08, psychological domain 43.81±16.53, social domain 36.05±19.74 and environmental domain 44.38±15.29 which is similar to study done by Debalina data et al.[18] study on west Bengal India showed physical domain 42.26±15.64, psychological domain 40.84±15.64,social domain39.62±16.39 and environmental domain 48±13.18. kumar s et al study.[19] done in pudhucherry showed similar results were social domain was comparatively lower than other domains.

Independent t test showed higher age group, female gender, low level of education, impaired activities of daily living, having any one comorbidities and musculoskeletal disorder associated with low quality of life in all four domains.

According to study done in Iran by Yaser Khaje Bishak et al.[20] male had higher quality of life compared to female and quality of life affected by hearing impairment and visual impairment which is similar to the present study.Anukur barual et al.[16] study showed age morethan 70 years had significant low QOL in physical,psychological and social domains , being single had associated with low QOL in environmental and social domain which is similar to this present study .Santhalingam et al.[10] study on QOL among elderly srilanka showed presence of healthconditions,musculoskeletal disorder,hearing impairment,vision impairment , limitation of ADL were associated with worse QOL.

Qadri syed et al study.[21] among elderly north india showed QOL better in male gender , graduate , living in extended family and Somenath gosh et al.[22] study among elderly in urban slum India showed subjects with low education , being single , lakcing of personal income , not living with their children had associated with low QOL which is similar to present study.

Debalina data et al.[18] study showed QOL was lower among people more age , female , illiterate and Kumar s et al.[19] study showed QOL was lower among those with no schooling , nuclear family , living without partner ,musculoskeletal disorder , low vision and impaired activities of daily living which is similar to this study. Miranda et al.[23] study showed advanced age and musculoskeletal disorder was associated with lower QOL, Anna Hudakova et al.[24] study showed higher ADL associated with higher QOL .

Nguyen et al.[25] study on impact of comorbid condition on QOL showed female gender , lower education associated with low QOL in psychological and environmental domain. Parasuram et al.[26] study on QOL showed advanced age , low education affected physical , psychological and environmental domain where unemployed , role with family associated with low QOL in physical domain , female gender , living without spouse associated with psychological domain which is similar to the present study.

Karmaker et al.[8] study showed better QOL seen in less than 70 years of age in physical domain, high socioeconomic scale associated with psychological

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domain, male gender and higher illiteracy associated with social domain and environmental domain.

Lalitha kishnappa et al.[11] study showed literacy , gender , financial dependency associated with low QOL in physical domain, education in psychological , social and environmental domain. Mittal et al.[27] study on QOL elderly in Punjab showed education associated with low QOL in all four domains , comorbidity associated with physical, social and environmental domain. Living without a spouse is associated with social domain. The above study findings were similar to this study. Shah et al.[28] study done in Ahmadabad showed female gender associated with low QOL in all 4 domains where being single associated with psychological, social and environmental domain.

Multiple linear regressions showed living without a spouse and impaired activities of daily living affecting all four domains independently. Family type is associated with low QOL in all three domains except physical domain. Comorbidity status is associated with all three domains except social domain. Low level of education associated with psychological and environmental domain.

Similar finding showed in L.Paskulin et al.[29] study done in Brazilian multiple liner regression showed over al QOL affected by health status, educationlevel,and activities of daily living associated with physical domain.Panghilali et al.[30] study showed physical health , social relationship, family relation affect QOL independently.Tiago dasilva Alexandre et al.[31] study showed marital status affect social domain. Lodhi et al.[32] study showed female gender, having comorbidities were strong predictor for low QOL. Kumar s et al.[7] study showed schooling, living without spouse, nuclearfamily, musculoskeletal disorder associated with low QOL which is similar to this study.

CONCLUSION

The quality-of-life elderly population is predominantly influenced by multiple factors like physical heath, living alone without spouse and also emotional, psychological and financial support from kith and kin. They also had impaired activities of daily living which affect their quality of life profoundly.

Limitation

The study was conducted in a limited urban filed practice area of Chengalpattu medical college. There may be subjective bias introduced during the interview period. In spite of these limitations the study is a community based cross sectional study displaying the quality of life among elderly in urban population.

Healthcare for elderly should be comprehensive with promotive, preventive and rehabilitative services along with curative services are need of the hour. National programme for elderly should mainly focus to maintain their self-sufficiency, social integration and participation to improve the quality of life. Ministry of social justice and empowerment launched “Elder helpline-14567” a national helpline for senior citizen in 6 states of India including Tamilnadu that provides free information, guidance, and emotional support in case of abuse and rescues in order to improve quality of life of elderly.[33] Increased awareness about this digital helpline use among elderly should be implemented through social support groups.

Health education programme can be implemented through social support groups by weekly focus on group discussion will improve social relationship and environmental change among the elderly. Provision of community centre like Geriatric Park and clubs for the old age people motivates and improves their social relationship also physical and psychological health.

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