ISSN 2458-8865 E-ISSN 2459-1505
www.fppc.com.tr
Family Practice & Palliative Care

Research Article

The factors associated with quality of life and depression score in adults aged 65 and over

65 yaş ve üzeri yaşlılarda yaşam kalitesi ve depresyon puanıyla ilişkili faktörler

Banu Bedir[a], Elif Oksan Calikoglu [b], Sinan Yilmaz[b], Zahide Kosan[b], Serhat Vancelik[b]

[a] Department of Public Health, Erzurum Provincial Health Directorate, Erzurum, Türkiye

[b] Department of Public Health, Faculty of Medicine, Ataturk University, Erzurum, Türkiye

Abstract

Introduction: In recent years, there has been an increase in the number of elderly population with the improvement of living conditions and the acquisition of healthy life behaviors in Türkiye. In this study, it was aimed to evaluate the quality of life of the elderly and the affecting factors.

Methods: Our study is planned with a descriptive and cross-sectional design. Quality of life of the participants was assessed using the World Health Organization Quality of Life-Old module (WHOQOL-OLD), whereas depressive symptoms were evaluated using the Geriatric Depression Scale.

Results: Their mean total score on the WHOQOL-OLD module was 56.64 ± 15.57. The total quality of life score was found to be significantly lower among females, elderly, illiterate and those who lacked a regular monthly income, who perceived their health status to be worse than that in the previous year, who considered themselves very old and who suffered from chronic diseases ($p < 0.001$). The mean score of the participants on the Geriatric Depression Scale was 14.59±5.27, whereas the frequency of depression was 56.5%. There was a negative and significant relationship between depression and quality of life scores ($p<0.001$, $r=0.658$).

Conclusion: In our study, the indicators, dimensions, and measurement of quality of life and levels of depression in old age are presented. Additionally, factors influencing the perceptions of aging among the elderly and the individual perspective on aging, as well as their associations with depression, are discussed.

Keywords: Elderly, Aging, Quality of life, Depression, Perception of aging, Geriatric Depression Scale

Öz

Giriş: Ülkemizde son yıllarda yaşam koşullarının iyileşmesi ve sağlıklı yaşam davranışlarının kazanılması ile yaşlı nüfus sayısında artış görülmektedir. Bu çalışmada yaşlıların yaşam kalitesi düzeyi ve etkileyen faktörlerin değerlendirilmesi amaçlanmıştır.

Yöntem: Bu çalışma tanımlayıcı ve kesitsel nitelikle planlanmıştır. Katılımcıların yaşam kaliteleri World Health Organisation Quality of Life-Old module (WHOQOL-OLD) ile, depresif belirtiler ise Geriatrik Depresyon Ölçeği kullanılarak değerlendirilmiştir.

Bulgular: WHOQOL-OLD modülündeki ortalama toplam puanları 56,64 ± 15,57 idi. Kadınlarda, yaşlılarda, okuma yazma bilmeyenlerde, aylık düzenli geliri olmayanlarda, sağlık durumlarını bir önceki yıla göre daha kötü algılayanlarda, kendini çok yaşlı olarak görenlerde ve sağlık sorunları yaşayanlarda toplam yaşam kalitesi puanı anlamlı olarak daha düşük bulundu ($p < 0,001$). Katılımcıların Geriatrik Depresyon Ölçeği puan ortalaması 14,59±5,27 iken depresyon sıklığı %56,5'ti. Depresyon ve yaşam kalitesi puanları arasında negatif ve anlamlı bir ilişki vardı ($p<0,001$, $r=0,658$).

Sonuç: Çalışma alanında ikamet eden yaşlı popülasyonda yaşam kalitesini etkileyen faktörler ve depresif belirtilere yönelik koruyucu, tedavi edici ve rehabilite edici hizmetlerin artırılmasına ihtiyaç olduğu ifade edilebilir.

Anahtar kelimeler: Yaşlı, Yaşlanma, Yaşam kalitesi, Depresyon, Yaşlılık algısı, Geriatrik Depresyon Ölçeği

Received	Accepted	Published Online	Corresponding Author	E-mail
August 22, 2022	July 11, 2023	July 28, 2023	Banu Bedir, M.D.	banubedir89@hotmail.com
Correspondence	Dr. Banu Bedir, Erzurum İl Sağlık Müdürlüğü, Yakutiye/Erzurum, Türkiye			
doi	https://doi.org/10.22391/fppc.1165145			

Key Points

1. As the depression score increases, the quality of life of the elderly decreases. By considering the fact that individuals aged ≥65 years do not represent a homogenous group and that every individual has different specific needs, special emphasis should be placed on activities that are specific to the age groups.

Introduction

Ageing is a dynamic and universal process observed in all living organisms which is affected by genetic, physical, and social factors. It is associated with a gradual loss of functionality. Population ageing is one of the crucial demographic changes in recent years. Trends such as improvements in the living environment and the level and distribution of income, advances in science and technology, increase in educational attainment, improvement in adequate and balanced nutrition, improvement in housing/accommodation conditions, increase in access to healthcare services and gain of healthy lifestyle behaviours have positively impacted lifespan and quality of life. However, this situation leads to an increase in the proportion of aged population and overall ageing of societies [1].

The World Health Organisation (WHO) reported that the most rapid population growth occurs in low- and medium-level income countries and emphasised that it would be a judicious investment for the future to establish a system that meets the needs of the elderly, promotes healthy ageing, and ensures continued independence of the elderly. Policies implemented by different countries to preserve the health of the elderly have resulted in an increase in the proportion of the elderly population and life expectancy at birth [1]. In 2016, the elderly population represented 8.3% of the world's population, whereas in Türkiye, the proportion of the elderly within the general population is 9.7% according to the Turkish Statistical Institute's 2021 data [2].

Quality of life is a recently proposed concept which has gradually gained importance, and it has broadened the WHO's conventional definition of health. Quality of life can be defined as the emotional or personal response of an individual to the perceived difference between the activities he/she wishes to perform and those that he/she can perform. Health-related quality of life refers to the role of health in allowing individuals to perform their daily life activities and to how individuals perceive their physical, mental and social areas of life [3].

Previous studies have observed psychiatric symptoms in a large portion of the aged population, with depression ranking first among these symptoms. Depression in the elderly population is also an important public health concern that not only negatively affects their quality of life and productivity but also worsens their existing chronic diseases [4]. In this study, it is aimed to demonstrate the role of sociodemographic variables on quality of life of elderly individuals aged ≥65 years and to determine the frequency of depressive symptoms in this population.

Methods

Ethical Approval, informed consent and permissions

This descriptive cross-sectional study was conducted between June-September 2016 after obtaining the necessary approval from Ethical Committee of Non-Invasive Clinical Research (decision number: 31.05.2016-5/20) and administrative permission. Written consent has been obtained from the participating researchers.

Study design and sample

The study population comprised individuals aged ≥65 years residing in Palandoken district, which is one of the three central districts of Erzurum Province, eastern Türkiye. According to the data from the Erzurum Provincial Directorate of Public Health, the population aged ≥65 years residing in Palandoken district was 10,642 when the study started. The elderly with significant perceptual and psychiatric problems were excluded from the study. Considering inaccessibility to find data on quality of life and prevalence specific to the elderly residing in the district, the size of the study sample was calculated with the Epi Info v7.0 software using the reported prevalence of depression in this age group. The prevalence of depression varies at different levels according to the scales used in previous studies, ranging from 5.9% to 48%. Based on a prevalence rate of 20% for depression, the sample size was determined to be 480 individuals with 95% confidence interval considering an error margin of 5% and design effect of 2. The researchers requested the total population number of individuals aged 65 and over, registered with all family physicians affiliated with the Palandoken District Health Directorate. Data were collected from those who visited the primary healthcare centers in the region and agreed to participate in the study.

Data collection

The questionnaire developed for data collection included three sections: first section (19 questions), the demographic and socioeconomic characteristics of the elderly; second section (24 questions), questions from the WHO Quality of Life-Old (WHOQOL-OLD, validity and reliability of its Turkish version was studied in 2010 by Eser et al.) and third section (30 questions), questions from the Geriatric Depression Scale (GDS, validity and reliability of its Turkish version was studied in 1997 by Ertan et al.) [5, 6]. The survey form was administered by the researcher through face-to-face interviews.

The WHOQOL-OLD module comprises 6 subscales and 24 items. The subscales include sensory abilities; autonomy; past, present and future activities; social participation; death and dying and intimacy. The sensory abilities subscale evaluates the impact of changes in the senses of vision, hearing, smell, taste, appetite and touch on quality of life. The autonomy subscale evaluates the impact of functions such as independence, self-respect, ability to control one's life and ability to make decisions freely on quality of life. The past, present and future activities subscale evaluates the impact of past successes and satisfaction with such successes as well as thoughts and emotions about the future on quality of life. The social participation subscale evaluates the impact of the ability to participate in important social activities and to use time effectively and adequately on quality of life. The death and dying subscale evaluate the thoughts, concerns, anxieties and fears related to the inevitability and acceptability of death as well as their impact on quality of life. The intimacy subscale evaluates the impact of the ability to establish personal and special relationships on quality of life. The WHOQOL-OLD module is designed to measure quality of life in the past 2 weeks, with the minimum score being 1 point and maximum score being 5 points for each item. Each subscale contains four questions, and once all questions have been answered, the minimum and maximum scores of 4 and 20 can be obtained for each subscale, respectively [5].

The GDS is a 30-item self-report scale using which individuals describe the feelings experienced in the past 1 week. The scale is scored by assigning 1 point for each answer suggesting depressive symptoms and 0 point for the other answers. The total score obtained on summing the item scores is considered the depression score. The GDS is an easy-to-apply scale in which the items are only answered as 'yes' or 'no'. In some items (items 1, 5, 7, 9, 15, 19, 21, 28, 29 and 30), the questions responded as 'yes' are scored as '0', whereas those answered 'no' are scored as '1'. The other items are scored in reverse, with the questions responded as 'yes' being scored as '1' and 'no' being scored as '0'. The total score of the scale varies between 0 and 30. Our study results were evaluated by dividing the participants into two groups: participants with a GDS score of <14 being considered as not having depressive symptoms and those with a GDS score of ≥14 being considered as having depressive symptoms [6].

The dependent variables of the study included the mean WHOQOL-OLD scores, whereas the independent variables included demographic and socioeconomic variables (sex, age, educational level, marital status, health insurance, number of children, presence of a regular monthly income, extent to which the income covers basic needs, number of individuals residing in the same house, how a participant perceives his/her age, perception of the current health status compared with that in the previous year, presence or absence of chronic diseases, regular use of medication and regular use of aids and devices).

Statistical analysis

Data were evaluated using the Statistical Package for the Social Sciences v20 for Windows software. Descriptive statistics are presented as numbers and percentages, whereas numerical variables are presented as means, standard deviations, medians and minimum and maximum values. Data analysis was performed using chi-square test, Mann–Whitney *U*-test, Kruskal–Wallis test, Spearman's correlation coefficient (Rho) and logistic regression analysis. For use as dependent variables in the regression model, the quality of life scores was divided into two groups using a median cut-off value. Individuals with scores below the median cut-off value were considered to represent the group with low quality of life, whereas those with scores above the cut-off value were considered to represent the group with high quality of life. Independent variables that reportedly have a significant effect on quality of life were included in the logistic regression model. For the categorical independent variables included in the model, the first category was used as references. Logistic regression analysis was conducted using the enter method. In all analyses, the level of statistical significance was set at $p < 0.05$.

Results

Out of the 480 elderly individuals who participated in the study, 54.2% (n = 260) were females, with a mean age of 71.6 ± 6.1 years (minimum: 65, maximum: 97). Of the participants, 71.0% belonged to the 65–74-year age group and 63.5% were married. Further, 35.4% reported that they felt very old and 52.9% perceived their health status to be worse than that in the previous year. The distribution of certain sociodemographic characteristics was done according to sex. There were significant differences between genders in terms of educational level, marital status, the presence of regular monthly income, perception of age, perception of health status in the past year, and the presence of depressive symptoms (Table 1).

The depressive symptoms of the participants were assessed using the GDS, and the mean depression score was determined to be 14.59 ± 5.27 (minimum: 3.0, maximum: 27.0). It was considered that participants with a score of ≥14 on the GDS had definite symptoms of depression. Accordingly, the participants who had definite symptoms of depression constituted 56.5% (n = 271) of the study participants. Depressive symptoms were more common in females than in males, with significant differences between sexes ($p<0.001$). (Table 1).

According to the WHOQOL-OLD module, the mean total quality of life score of the participants was 56.64 ± 15.57, whereas the mean scores of the participants for the different subscales were as follows: sensory abilities subscale, 12.27 ± 3.85; autonomy subscale, 12.59 ± 3.24; past, present and future activities subscale, 12.69 ± 3.10; social participation subscale, 11.61 ± 3.41; death and dying subscale, 15.46 ± 4.45 and intimacy subscale, 13.64 ± 3.53.

The mean total scores for quality of life were significantly lower among females, ≥85-year-old individuals, illiterate, those who were single, those without a regular monthly income and those whose income was insufficient to meet their basic needs. The distribution of the mean quality of life scores according to certain sociodemographic characteristics is shown in Table 2.

Table 1. Distribution of certain sociodemographic characteristics according to sex

	Female		Male		Total		
	n	%	n	%	n	%	x², *p*-value
Age Group (years)							
65–74	188	72.3	153	69.5	341	71.0	
75–84	63	24.2	59	26.9	122	25.5	p=0.798
≥85	9	3.5	8	3.6	17	3.5	
Educational level							
Illiterate/Literate	149	57.3	47	21.4	196	40.8	
Primary School	79	30.3	74	33.6	153	31.9	
Secondary School	16	6.2	36	16.4	52	10.8	**p<0.001**
High School and above	16	6.2	63	28.6	79	16.5	
Marital status							
Married	134	51.5	171	77.7	305	63.5	**p<0.001**
Single/Widowed/Divorced	126	48.5	49	22.3	175	36.5	
Health insurance							
Yes	238	91.5	215	97.7	453	94.4	**p<0.001**
No	22	8.5	5	2.3	27	5.6	
Regular monthly income							
Yes	229	88.1	208	94.5	437	91.0	**p=0.013**
No	31	11.9	12	5.5	43	9.0	
Chronic disease							
Yes	200	76.9	155	70.5	355	74.0	p=0.108
No	60	23.1	65	29.5	125	26.0	
Perception of old age							
Very old	116	44.6	54	24.5	170	35.4	
Old	127	48.8	123	56.0	250	52.1	**p<0.001**
Not old	17	6.6	43	19.5	60	12.5	
Perception of the change in the health status over the past 1 year							
Better	16	6.2	33	15.0	49	10.2	
Same	78	30.0	99	45.0	177	36.9	**p<0.001**
Worse	166	63.8	88	40.0	254	52.9	
Depressive symptoms according to the GDS							
Yes	174	66.9	97	44.1	271	56.5	**p<0.001**
No	86	33.1	123	55.9	209	43.5	
Total	260	54.2	220	45.8	480	100.0	

n: frequency, %: percentage. Row percentages are presented. Significant p value <0.05. The Chi-Square test was performed for all parameters.

Table 2. Evaluation of the mean quality of life scores according to certain sociodemographic characteristics

	Sensory Abilities	Autonomy	Past, Present and Future Activities	Social Participation	Death and Dying	Intimacy	Total Score
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Sex							
Female	11.98±3.79	11.63±3.15	12.20±3.05	11.40±3.43	14.81±4.74	13.42±3.58	53.57±15.38
Male	12.63±3.91	13.73±2.99	13.28±3.06	11.86±3.39	16.24±3.98	14.13±3.45	60.28±15.03
p value	**p=0.047**	**p<0.001**	**p<0.001**	p=0.110	**p=0.002**	**p=0.034**	**p<0.001**
Age Group (years)							
65–74	13.05±3.74	13.04±3.17	12.87±3.02	12.32±3.11	15.37±4.48	13.95±3.46	58.97±14.95
75–84	10.53±3.43	11.43±3.07	12.18±3.22	9.93±3.40	15.76±4.50	13.20±3.61	51.08±15.52
≥85	9.29±3.72	11.88±4.01	12.71±3.60	9.47±4.39	15.29±3.92	13.41±4.21	50.06±17.02
p value	**p<0.001**	**p<0.001**	p=0.148	**p<0.001**	p=0.557	p=0.163	**p<0.001**
Marital Status							
Married	12.78±3.83	13.08±3.22	13.17±3.02	12.28±3.12	15.92±4.26	14.01±3.53	59.63±15.26
Single/Widowed/Divorced	11.40±3.76	11.74±3.13	11.85±3.07	10.45±3.59	14.67±4.70	13.27±3.50	51.45±14.75
p value	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.004**	**p=0.026**	**p<0.001**
Educational level							
Illiterate/Literate	11.36±3.82	11.29±3.11	11.58±3.11	10.93±3.35	14.66±4.57	12.84±3.72	50.67±15.31
Primary School	12.76±3.81	13.00±3.05	13.09±2.80	11.63±3.52	16.02±4.43	14.30±3.36	59.18±14.64
Secondary School	12.58±4.13	14.33±2.90	13.85±2.75	12.02±3.56	16.29±3.83	14.46±3.13	62.00±14.22
High School and above	13.39±3.40	13.91±2.93	13.92±2.97	12.99±2.79	15.86±4.37	14.43±3.18	63.03±13.80
p value	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.010**	**p<0.001**	**p<0.001**
Regular monthly income							
Yes	12.31±3.83	12.76±3.19	12.89±3.06	11.81±3.38	15.61±4.44	13.97±3.46	57.66±15.53
No	11.93±4.15	10.86±3.35	10.67±2.75	9.53±3.07	14.05±4.51	11.42±3.45	46.32±11.90
p value	p=0.721	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.018**	**p<0.001**	**p<0.001**
Monthly income sufficient to meet basic needs							
Yes	12.44±3.80	13.29±2.98	13.76±2.68	12.37±3.38	15.88±4.29	14.57±3.37	60.73±14.19
No	12.09±3.92	11.83±3.36	11.52±3.11	10.78±3.25	15.02±4.60	12.83±3.49	52.17±15.81
p value	p=0.380	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.043**	**p<0.001**	**p<0.001**
Total	12.27±3.85	12.59±3.24	12.69±3.10	11.61±3.41	15.46±4.45	13.74±3.53	56.64±15.57

Mean ± SD: Mean ± Standard Deviation, Significant P value <0.05. Mann-Whitney U or Kruskal Wallis Test was performed.

Among the participants, those who perceived themselves as very old had significantly lower mean total scores for quality of life and lower mean scores for all subscales of quality of life ($p < 0.001$). On the other hand, the participants who considered their health status to be better than that in the previous year had significantly higher total scores for all subscales of quality of life, except the death and dying subscale ($p < 0.001$). According to the GDS, the mean total scores for quality of life and mean scores for all subscales of quality of life were significantly lower among participants with depressive symptoms than among those without depressive symptoms ($p<0.001$; Table 3).

Table 3. Evaluation of the mean quality of life scores according to the perception of old age, perception of health status and depressive symptoms

	Sensory Ability	Autonomy	Past, Present and Future Activities	Social Participation	Death and Dying	Intimacy	Total Score
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Perception of old age							
Very old	10.35±3.51	11.05±3.19	11.51±3.09	9.74±3.33	14.81±4.79	12.58±3.61	47.95±14.65
Old	13.02±3.50	13.18±2.87	13.20±2.93	12.45±3.03	15.49±4.19	14.21±3.32	59.95±13.54
Not old	14.63±3.89	14.55±3.09	13.92±2.81	13.43±2.76	17.23±4.16	15.07±3.31	67.53±13.98
p value	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**
Perception of the change in the health status over the past 1 year							
Better	13.33±3.82	14.10±2.88	13.78±2.70	13.18±2.55	14.53±4.55	14.61±3.09	62.01±14.02
Same	13.27±3.50	13.42±2.94	13.40±2.88	12.44±3.15	15.58±4.21	14.58±3.03	61.13±14.07
Worse	11.38±3.89	11.72±3.27	11.99±3.16	10.73±3.49	15.57±4.61	12.99±3.77	52.48±15.72
p value	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	p=0.289	**p<0.001**	**p<0.001**
Depressive symptoms							
Yes	11.03±3.61	11.33±3.04	11.53±2.98	10.39±3.27	14.52±4.71	12.76±3.60	49.53±14.05
No	13.89±3.57	14.23±2.74	14.20±2.56	13.20±2.91	16.70±3.79	15.02±3.00	65.86±12.28
p value	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**
Total	12.27±3.85	12.59±3.24	12.69±3.10	11.61±3.41	15.46±4.45	13.74±3.53	56.64±15.57

Mean ± SD: Mean ± Standard Deviation, Significant P value <0.05. Mann-Whitney U or Kruskal Wallis Test was performed.

There was a negative and significant correlation between the mean depression scores of the participants as well as mean total quality of life and subscale scores on the WHOQOL-OLD module ($p<0.001$, r=0,658). An increase in the mean depression scores was associated with a decrease in the mean quality of life scores. There was a low-level negative correlation between the depression scores and death and dying subscale scores and a moderate-to-high correlation with the total quality of life and subscale scores (Table 4).

Table 4. Relationship between the mean depression score and mean total and subscale scores on the WHOQOL-OLD module

WHOQOL-OLD	Depression Score	
	r	p value
Sensory abilities	-0.448	**<0.001**
Autonomy	-0.581	**<0.001**
Past, present and future activities	-0.562	**<0.001**
Social participation	-0.487	**<0.001**
Death and dying	-0.287	**<0.001**
Intimacy	-0.441	**<0.001**
Total score	-0.658	**<0.001**

r: Spearman's correlation coefficient , Spearman's correlation was performed, Significant P value <0.05.

The analysis conducted using the logistic regression model to examine the factors influencing quality of life revealed that gender, marital status, adequacy of income for basic needs, perception of old age, and depressive symptoms emerged as significant variables. The mean quality of life scores was found to be significantly higher among married participants (OR: 2.002, 95% CI: 1.271 – 3.125), those whose income adequately covered their basic needs (OR: 1.961, 95% CI: 1.269 – 3.032), those who did not perceive themselves as very old (OR: 7.827, 95% CI: 3.508 – 17.463), and those without depressive symptoms (OR: 4.929, 95% CI: 3.151 – 7.710) ($p<0.05$; Table 5).

Table 5. Regression analysis results of the variables that might affect the WHOQOL-OLD quality of life

	Variables	OR	95% CI	p value
Final Model	Single/Widowed/Divorced	1.000		
	Married	2.002	1.271 – 3.125	**0.003**
	Income does not meet basic needs	1.000		
	Income meets basic needs	1.961	1.269 – 3.032	**0.002**
	Feels very old	1.000		
	Feels old	3.295	2.051 – 5.294	**<0.001**
	Does not feel old	7.827	3.508 – 17.463	**<0.001**
	Shows depressive symptoms	1.000		
	No depressive symptoms	4.929	3.151 – 7.710	**<0.001**

Nagelkerke R^2 value: 0.392, Hosmer–Lemeshow test: $x^2 = 3.578/p = 0.827$

The independent variables included in the model are Gender, Marital status, Income status, Perception of old age, Depression status

OR: Odds Ratio, 95% CI: 95% confidence interval, Significant P value <0.05.

Discussion

Consistent with the increase in life expectancy at birth and proportion of the elderly worldwide, including in Türkiye, the concept of quality of life has gained importance in terms of identifying the problems experienced by the elderly and developing potential solutions for these problems. Our study was designed with a similar goal and aimed to reveal the role of sociodemographic variables on quality of life of individuals aged ≥65 years and to determine the frequency of depression among them.

According to a study performed in Gaziantep, Turkey, the highest mean score was reported for the death and dying subscale, consistent with our study [7]. The low mean scores observed in the social participation subscale in our study could be due to the limited opportunities of participation in social and communal activities that are available for older individuals residing in Erzurum Province. Compared with the results of another study conducted in Norway [8] using the same scale, the mean scores for all quality of life subscales, except the death and dying subscale, were found to be lower in our study. The mean score for the death and dying subscale was found to be higher in our study than that reported in the Norwegian study, which could have been due to the sociocultural differences between the two countries, with death not being perceived as a negative concept in Turkey but rather a natural and inevitable part of life. A previous study conducted in Brazil reported mean total scores on the WHOQOL-OLD module similar to our scores. Similar to our study, this study found the lowest mean scores for the autonomy and social participation subscales and attributed the lower scores to the decrease in the autonomy of elderly individuals, difficulties of mass transportation in the city for the elderly and limited social activity areas in their living environment such as parks and recreational areas [9]. It can be considered that these factors also apply to the living environment at the present study site. Moreover, the relatively harsh climatic conditions of Erzurum Province limit the social activities that can be performed.

The total mean quality of life and subscale scores were found to be lower in females than in males. Another study conducted in Turkey on the elderly also found that the mean quality of life scores was lower in females [5, 7, 10, 11]. As females tend to have a longer life expectancy at birth, they also have a higher frequency of encountering many types of health problems. Low educational attainment, which is more common in females than in males, lack of social security, difficulties encountered in accessing healthcare services and limited economic freedom can be listed among the most important causes that reduce their quality of life.

In our study, the mean total quality of life score was higher in the 65–74-year age group, which is considered the young-old age group. There are both national [7, 10, 11] and international [12, 13] studies that have reported that advancing age is associated with a gradual decrease in the mean quality of life scores. Individuals in the young-old age group tend to have better sensory functions, physical functions, autonomy and ability to perform self-care than those in the older age groups, leading to a higher quality of life.

It was observed that the mean quality of life score increased with increasing educational level. Other studies conducted in Turkey have also reported that quality of life increases with increasing educational level [7, 14]. Two studies performed in Brazil and a study conducted by Molzahn on 22 countries including Turkey reported that a higher educational level leads to a higher quality of life [9, 15, 16].

Consistent with our study, previous studies conducted in Turkey have shown that there is a significant relationship between the perception of old age and quality of life and that the mean quality of life scores tend to be higher among those who perceive old age as a positive condition [7, 17]. International studies have also yielded similar findings [18, 19]. The common perception in society towards elderly is that they are dependent and weak individuals who lack self-sufficiency and need to spend most of their time at home. This general perception may lead individuals above a certain age to stop considering themselves productive, thereby having a negative effect on their quality of life.

Elderly participants who perceived their health status to be better than that in the previous year had significantly higher mean scores for all quality of life subscales, except the death and dying subscale. Other studies have also demonstrated that elderly individuals who consider their health status good tend to have a higher quality of life [20, 21]. Therefore, it can be stated that an individual's perception of his/her health, besides a perspective focusing on his/her chronic diseases, has an effect on the individual's daily life and quality of life.

The frequency of depression among the participants of our study was 56.5%, which is similar to the proportion reported in studies performed on similar populations in Turkey [22, 23], with studies performed in Brazil, Poland and Egypt having reported proportions of 30.2%, 57.7% and 62.7%, respectively [15, 24]. Because Erzurum Province is located within a cold climatic belt, the elderly residing in this province have to spend most of the year inside their homes, which severely restricts their social lives. This confinement may lead to an absence of stimulation in their lives and subsequently to a greater frequency of depressive symptoms. The variation in the prevalence of depressive symptoms among different countries may be due to sociodemographic and cultural differences. Among the elderly, depressive symptoms are often confused with physical ailments and somatic complaints, causing healthcare providers to overlook these symptoms. This in turn may cause depressive symptoms to be neglected in the elderly.

Our study identified a negative and significant relationship between the total quality of life scores and GDS scores. The studies conducted by Campos in Brazil and by Bryła in Poland have yielded results similar to those of our study, with the proportion of depression being 2–10-times lower among individuals with a higher quality of life [15, 24].

Limitations

The study is limited by the fact that it was only carried out in one location. Additionally, our study includes data from the year 2016. After all, we consider our study to be great importance in terms of determining the measures to increase the life qualities and lower the depression.

Conclusion

In our study, the quality of life levels of the elderly was found lower than the values reported in developed countries. Marital status, regular monthly income, how the person's age is assessed, depressive symptoms were found to be effective factors of quality of life.

Recommendations for future research

Given that the proportion of the elderly within the general population will continue to increase, it may be possible to improve their quality of life by opening courses for their training in cooperation with different sectors and by increasing the rate of literacy among them across the entire society. According to the results of our study, the emotional state and autonomy of the elderly affect their quality of life and depressive symptoms. In this respect, steps should be taken to increase the social exchange areas of the elderly to provide them a measure of physical liberty. Universities, scientific institutions and organizations as well as relevant associations should investigate the level of knowledge across societies about the ageing process, healthy ageing and physical activity and take measures for the shortcomings identified in the level of knowledge regarding these areas. Furthermore, by considering the fact that individuals aged ≥65 years do not represent a homogenous group and that every individual has different specific needs, special emphasis should be placed on activities that are specific to the age groups. In Turkey, steps should be taken to increase the number of geriatric clinics and hospitals, numbers of which are currently limited. From this perspective, it also becomes important to add geriatrics- and gerontology-related courses in the curriculum of medical faculties and to raise healthcare personnel who are trained on providing healthcare services to the elderly.

Conflict of interest: None.

	Author Contributions	Author Initials
SCD	Study Conception and Design	BB, EOC, SY, ZK, SV
AD	Acquisition of Data	BB
AID	Analysis and Interpretation of Data	BB, EOC, SY, ZK, SV
DM	Drafting of Manuscript	BB
CR	Critical Revision	BB, EOC, SY, ZK, SV

Financial support: No financial support has been received.
Acknowledgments: None
Prior publication: This study has not been previously published in any journal and has not been presented at congresses.

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