



Factors Affecting Depression and Quality of Life in the Elderly

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Abstract

Aim: This study was conducted to assess depression and quality of life in the elderly and the factors influencing these methods.

Methods: The sample of this descriptive study consisted of 450 individuals, 65 years of age and older, who presented to the Family Healthcare Centers in the provincial center of Erzincan between October 2010 and March 2011. The data were collected using a descriptive questionnaire, Geriatric Depression Scale (GDS), World Health Organization Quality of Life Instrument-Older Adults Module (WHOQOL-OLD) and Europe Health Impact Scale-World Health Organization Quality of Life Scale (EUROHIS-QOL.8-WHOQOL-8.Tr).

Results: It was determined that 62.2% of older people suffer from depression. The mean WHOQOL-OLD subdomain scores of older people were moderate and their overall scores were low. As the study participants' mean WHOQOL-OLD and EUROHIS-QOL.8 scores increased, the mean GDS score declined, and the difference in between was statistically significant ($p < 0.001$). Conclusion: Our study results showed that the majority of older people were at risk for depression, and as the mean depression risk score increased, the mean quality of life score decreased.

Keywords: Depression; Quality of life; Elderly

Introduction

Aging is an inevitable physiologic fact and a natural process causing physical, mental and social deterioration [1]. The World Health Organization (WHO) has defined old age as being 65 years old and older [2]. The number of older people in the world is growing rapidly and the population of those 60 years of age and older is expected to double from 11% to 22% between 2000 and 2050. Furthermore, their number is projected to increase from 605 million to 2 billion [3]. According to the data of the Turkish Statistical Institute (TSI) for the year 2012, individuals 65 years old and older comprised 7.5% of the total population. Population projection estimates indicate that this ratio will reach 10.2% in 2023, 20.8% in 2050 and up to 27.7% in 2075 [4].

The physiological changes caused by aging bring about chronic diseases; psychosocial problems and inactivity-related problems and can result in a vicious circle [5]. Depression is an important mental health concern that is seen most frequently in the elderly [6,7]. This disease leads to significant loss of abilities, adversely affects the progress of a physical disease, increases deaths due to suicide and physical diseases, and increases the use and cost of healthcare services. Older people with depression lose social harmony, struggle in managing their self-care activities, and their quality of life deteriorates considerably as a result of all these [5]. The Pennix et al [8] reported that chronic depression significantly decreased physical performance for community-dwelling older people (>70 years). Wada et al [9] study found that older individuals with depression experienced a lower quality of life and negative effects on their daily living activities. All of these issues highlight the great need to evaluate the physical, psychological and social dimensions present in the lives of the elderly [10].

Depression is an important mental health issue which needs to be addressed in a primary care setting. In order to provide optimal health services and an improved quality of life for the elderly, health professionals need to become more aware of depression and its effects on the lives of the elderly.

Aim: This study was carried out to assess depression, quality of life and influencing factors in the elderly.

Materials and Methods

This descriptive study was conducted between October 2010 and March 2011 with participants 65 years of age and older who had presented to the Family Healthcare Centers of Karaağaç, İnönü and Mimar Sinan in the provincial center of Erzincan, Turkey. No sampling of any method was attempted and 450 individuals who met the sample criteria were included in the study. These inclusion and exclusion criteria are no hearing disability and communication problem, 65 years of age and over and voluntary for study.

Forms Used for Collecting Data

Four forms were used for data collection: a descriptive questionnaire for the socio-demographic characteristics of individuals, the Geriatric Depression Scale (GDS), the World Health Organization Quality of Life Instrument - Older Adults Module (WHOQOL-OLD) (WHOQOL-OLD) and the Europe Health Impact Scale - World Health Organization Quality of Life Scale (EUROHIS-QOL.8)-(WHOQOL-8.Tr).

Descriptive Questionnaire: This form, which was prepared by the investigators, includes 14 questions about the descriptive characteristics of individuals.

Geriatric Depression Scale (GDS): This is a depression scale for the older population developed by Yesavage et al [11] and tested for validity and reliability by Ertan et al. [12]. The scale has 30 self-reporting questions on how the person felt during the last one week of his/her life, and the subjects are asked to answer them as "yes" or "no." The scale is scored by giving 1 point for each answer in favor of depression and 0 for other answers. The sum is accepted as the total depression score. The scores to be obtained from the scale are between

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Received June 12, 2015; Accepted November 19, 2015; Published November 25, 2015

Citation: Bakar N, Aşilar RH (2015) Factors Affecting Depression and Quality of Life in the Elderly. J Gerontol Geriatr Res 4: 249. doi:10.4172/2167-7182.1000249

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0 and 30 [11,12]. A score between 0 and 10 indicates “no depression”, between 11 and 13 “possible depression” and 14 and above “definite depression.” The scale’s Cronbach Alpha coefficient is 0.92 [12] and it was found to be 0.94 in this study.

World Health Organization Quality of Life Instrument – Older Adults Module (WHOQOL-OLD): The WHOQOL-OLD module was tested for validity and reliability in our country by Eser et al. [13] (2010 a) and it consists of 24 questions and 6 subdomains that are scored on a 5-point Likert scale. These subdomains are Sensory Abilities, Autonomy, Past, Present and Future Activities, Social Participation, Death and Dying and Intimacy. The possible domain scores range between 4 and 20. An overall score can also be calculated by summing up each singular score value. The lowest score obtainable from the scale is 24 and the highest is 120. Higher scores indicate better quality of life [13].

Europe Health Impact Scale – World Health Organization Quality of Life Scale (EUROHIS-QOL.8)–(WHOQOL-8.Tr): The shortest general-purpose index is the Quality of Life in Health (QOLH) Scale, which was derived from the World Health Organization Quality of Life Scale (WHOQOL-Brief) by Eser et al [14] (2010 b). It consists of 8 questions chosen from WHOQOL based on a certain methodology. Two of these questions are taken from the general health and general quality of life questions of the WHOQOL and the remaining 6 questions from its physical, mental, social and environmental domains. Response options are of 5-point Likert-type and the words at each end are “not at all” and “completely.” As scores increase, quality of life also improves. The scale can be scored by alternative methods such as taking the average of the questions, summing up the questions or converting this sum to 100.

Data Collection

The study data were collected by Nihal Bakar through face-to-face interviews with the elderly in the FHCs in Karaağaç, İnönü and Mimar Sinan in the provincial center of Erzincan. The completion of forms took about 20-25 minute.

Statistical analysis

The data were analyzed using numbers, percentages and mean calculations; the Kruskal Wallis Variance Analysis and one-way variance analysis (ANOVA) were used to compare the descriptive characteristics of individuals, the mean scores of Quality of Life and GDS, and the t-test was used for independent groups; the relationship between the scales was assessed with a correlation analysis and the level of significance was set at $p < 0.05$.

Ethical Principles of the Study

In order to carry out the study, written permission was obtained from the Erzincan Provincial Health Directorate together with the ethical approval from Erzincan University, Health Sciences Ethics Committee. To protect their rights, participants were informed of the objective and duration of the study, the procedures involved during the study, and those who volunteered and met the required criteria were included in the study. The participants were also informed that they had the prerogative to withdraw from the study at any time, and their personal information would be protected after having been shared with the investigator. In addition, both the information and the identity of the responder would be kept confidential.

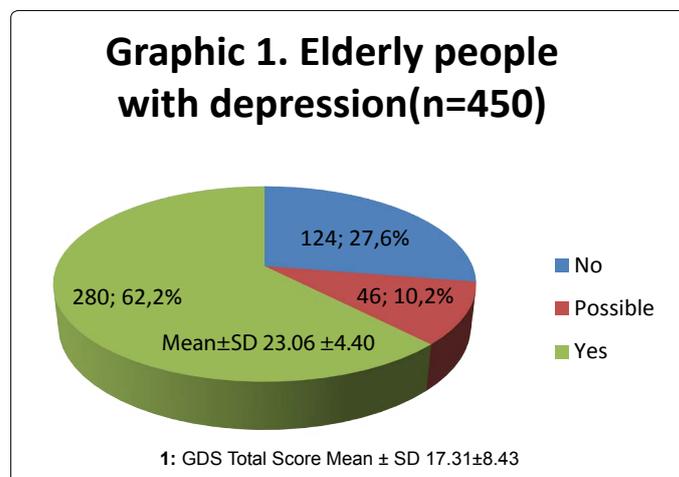
Results

The results indicated that 62.2% of older people have depression. The GDS average scores of all older people and the older people have

depression were 23.06 ± 4.40 and 17.31 ± 8.43 , respectively (Graphic 1).

Forty percent of the study participants were in the 65-69 age group; 51.3% were male, 66.9% married, 47.6% literate/graduates of primary school, 59.3% perceived their health as being poor, 86.4% had a chronic disease, 56.7% did not smoke (Table 1), and all the individuals included in the study had some kind of a social security.

Being at an advanced age, female, single or widowed, a low education level, a low income level, not living in a city, living alone, not receiving social support from associates, poorly perceived health, and having a chronic disease negatively affected the mean depression score in statistical terms ($p < 0.001$), whereas smoking positively affected the mean depression score in statistical terms ($p < 0.001$).



Characteristics	Number	Percent (%)	Mean ± SD	Significantly
Age(years)				
65-69	180	40.0	14.67 ± 8.57	F=10.994
70-74	120	26.7	18.37 ± 8.49	p<0.001
75-79	73	16.2	19.82 ± 7.51	
≥80	77	17.1	19.44 ± 7.6	
Gender				
Female	219	48.7	20.64 ± 7.55	t= -8.835
Male	231	51.3	14.15 ± 8.00	p<0.001
Marital status				
Single	6	1.3	22.83 ± 1.84	KW=59.102
Married	30	66.9	19.11 ± 8.39	p<0.001
Widowed	143	31.8	21.69 ± 6.70	
Education				
Illiterate	200	44.4	22.24 ± 6.85	KW=133.882
Literate/primary school	214	47.6	13.96 ± 7.43	p<0.001
Secondary/high school	30	6.7	10.63 ± 6.71	
University	6	1.3	5.83 ± 4.44	
Number of children				
No	12	2.7	22.16 ± 3.58	KW=4.416
One	9	2.0	13.22 ± 9.53	p>0.05
Two	22	4.9	16.81 ± 8.71	
Three and over	407	90.4	17.28 ± 8.45	
Income status *				
Income< expenditure	280	62.2	21.27 ± 6.79	t=16.013
Income >expenditure	170	37.8	10.78 ± 6.62	p<0.001
Place of residence				
Province	353	78.4	16.11 ± 8.35	F=17.843
District/town	34	7.6	21.76 ± 6.53	p<0.001

Village	63	14.0	21.63 ± 7.59	
Living status				
Alone	87	19.3	22.79 ± 6.47	F=25.411
With a married child	68	15.1	19.92 ± 6.82	p<0.001
With spouse	216	48.0	15.49 ± 8.41	
With spouse and child (ren)	79	17.6	14.00 ± 8.24	
Family Support				
Yes	80	17.8	16.81 ± 8.61	t=-.583
No	370	82.2	17.41 ± 8.40	p>0.05
Social Support environment				
Yes	237	52.7	13.44 ± 7.61	t=-11.718
No	213	47.3	21.61 ± 7.12	p<0.001
Perceived health				
Good	17	3.8	7.94 ± 6.00	KW=204.772
Moderate	166	36.9	10.60 ± 6.03	p<0.001
Poor	267	59.3	22.07 ± 6.23	
Comorbidity				
Yes	389	86.4	18.42 ± 8.10	t=7.492
No	61	13.6	10.21 ± 6.93	p<0.001
Tobacco use				
Smoking	15	3.3	10.80 ± 5.87	KW=32.792
Quit smoking	180	40.0	15.28 ± 8.19	p<0.001
Never smoked	255	56.7	19.12 ± 8.23	

Table 1: Comparison GDS average score according to descriptive characteristics of elderly people (n=450).

Facets	Minimum score	Maksimum score	Mean ± SD
Sensory abilities	6	20	11.08 ± 2.47
Autonomy	5	20	12.97 ± 4.09
Past, present and future activities	6	19	10.89 ± 2.77
Social participation	5	19	11.00 ± 2.90
Death and dying	4	17	10.06 ± 3.53
Intimacy	4	19	13.10 ± 3.15
Total score	18.75	83.33	47.00 ± 15.46

Table 2: WHOQOL-OLD of average score of elderly individual (n=450).

The Intimacy domain of the WHOQOL-OLD had the highest mean score with 13.10±3.15 and the Death and Dying domain had the lowest mean score with 10.06±3.53 (Table 2).

Being female, having a low education level, a low income level, perceiving health status as poor, and having a chronic disease affected all the WHOQOL-OLD subdomains, and overall and mean EUROHIS-QOL.8 scores statistically in the negative direction ($p<0.05$, $p<0.001$), whereas smoking affected them in the positive direction, respectively ($p<0.05$, $p<0.001$).

With advancing age, the mean scores of WHOQOL-OLD had a statistically significant decrease ($p<0.001$), except for the autonomy subdomain. The elderly aged 80 and over had higher scores than those of the 75-79 age group in all domains except social participation and death and dying. They also had a higher overall score. As age advanced, the mean EUROHIS-QOL.8 score significantly decreased ($p<0.001$). Being single or widowed, not living in a city, living alone, and not receiving social support from associates had a statistically negative effect on all the mean WHOQOL-OLD subdomain scores, except autonomy and the mean overall and mean EUROHIS-QOL.8 scores ($p<0.001$). With the exception of the living condition intimacy subdomain ($p<0.05$), all the other quality of life subdomains did not affect significantly the mean overall and EUROHIS-QOL.8 scores

in statistical terms ($p>0.05$) (Table 3). The correlation analysis made between the mean scores of WHOQOL-OLD and EUROHIS-QOL.8 and the mean score of the GDS showed that as the mean scores of WHOQOL-OLD and EUROHIS-QOL.8 increased, the mean score of GDS declined markedly and the difference in between was significant ($p<0.001$) (Table 4).

Discussion

Depression is a mental disorder commonly seen in older people [15]. This study determined that 62.2% of older people have depression. Other studies [16-19] conducted in Turkey of the elderly living at home found the prevalence of the risk for depression to be between 24.3% and 61.1%. Studies [9,20-23] carried out in other countries have shown the risk for depression to be between 6.4% and 44.3%.

The mean WHOQOL-OLD subdomain scores of the elderly study participants were found to be moderate and above moderate and their mean overall scores were low. This result was lower than that of the Eser et al [13] study. This difference can be explained by the influence of different socioeconomic and cultural factors.

The results of the study indicated that the mean score of depression risk significantly increased as the age advanced and this increase was higher in the 75-79 age group. The Zunzunegui et al. [24] found age to be a risk factor for depression; in particular; it was a risk factor in women in another study [20]. In the Pennix et al [8] chronic depression was seen more frequently in individuals 70 years old and older. Also we found that the mean scores of all the subdomains of WHOQOL-OLD except for autonomy, the mean overall and EUROHIS-QOL.8 scores significantly decreased as age advanced, and according to the Tukey analysis, this significance originated from the 65-69 age group. Other studies have also found that as one ages, the quality of life significantly decreases in statistical terms [25-28].

In this study we found the mean score of depression was significantly higher in women than in men. Other studies have reported similar findings [17-20, 24,29,30]. Besides women had significantly lower mean scores than men in all the WHOQOL-OLD subdomains except sensory abilities and in mean overall and EUROHIS-QOL.8 scores. Other studies have also reported that the quality of life scores of women are significantly lower than those of men [26,28,31-33].

The mean score of depression was found significantly higher in single and widowed individuals than in married individuals. Other studies have also reported similar findings [18,19,29, 34-36]. These results indicate that marriage, with its aspects of sharing and support, may play a protective role in preventing depression. Furthermore when compared to those who were married, widowed and single older people had significantly lower mean scores in all the subdomains of WHOQOL-OLD except autonomy, mean overall, and EUROHIS-QOL.8 scores. The Sonmez et al. [31] study also reported that being married significantly increased the quality of life score for study participants.

Our study results also found that as the education level of older people increased, their mean scores of depression decreased significantly. Other studies have also found that being illiterate or having a low education level significantly increases the risk of depression [17,19,24]. Although no statistically significant difference was reported, another study determined that as a person's education level increased, the mean depression score decreased [37]. Likewise it was found that as the education level went up, the mean WHOQOL-OLD sub-dimension, overall and EUROHIS-QOL.8 scores decreased

Characteristics	Sensory abilities (Mean ± SD)	Autonomy (Mean ± SD)	Past, present and future activities (Mean ± SD)	Social participation (Mean ± SD)	Death and dying (Mean ± SD)	Intimacy (Mean ± SD)	Total score (Mean ± SD)	EUROHIS-QOL.8 (Mean ± SD)
Age(years)								
65-69	11.86 ± 2.64	13.07 ± 4.06	11.81 ± 2.92	12.12 ± 2.96	11.51 ± 3.58	14.07 ± 2.84	52.58 ± 16.08	49.28 ± 17.75
70-74	10.72 ± 2.28	13.12 ± 4.17	10.63 ± 2.73	10.59 ± 2.89	9.51 ± 3.48	12.63 ± 3.27	45.02 ± 15.25	39.06 ± 17.57
75-79	10.34 ± 2.28	12.53 ± 4.18	9.98 ± 2.20	10.02 ± 2.46	8.82 ± 2.79	12.04 ± 3.14	41.40 ± 12.68	36.25 ± 16.53
≥80	10.53 ± 1.99	12.93 ± 3.99	10.00 ± 2.32	9.94 ± 2.28	8.70 ± 2.87	12.57 ± 3.08	42.38 ± 12.44	35.67 ± 16.14
F	11.008	0.374	13.218	17.553	20.264	10.771	15.264	18.017
p	0.000*	0.771***	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Gender								
Female	11.98 ± 2.34	12.07 ± 3.95	10.12 ± 2.54	10.22 ± 2.86	9.05 ± 3.35	12.44 ± 3.25	41.73 ± 14.27	36.84 ± 17.13
Male	10.13 ± 2.46	13.83 ± 4.04	11.62 ± 2.80	11.73 ± 2.75	11.01 ± 3.43	13.73 ± 2.92	52.00 ± 14.89	47.11 ± 17.80
t	8.545	4.645	5.938	5.685	6.113	4.422	7.457	6.232
p	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Marital status								
Single	11.16 ± 2.56	11.50 ± 3.56	9.66 ± 1.50	9.83 ± 1.72	8.33 ± 1.36	12.00 ± 0.63	40.10 ± 8.68	29.16 ± 9.81
Married	11.54 ± 2.55	13.21 ± 4.09	11.46 ± 2.85	11.63 ± 2.87	10.86 ± 3.50	13.72 ± 2.91	50.47 ± 15.57	46.38 ± 17.66
Widowed	10.11 ± 1.98	12.54 ± 4.08	9.74 ± 2.24	9.71 ± 2.55	8.44 ± 3.04	11.83 ± 3.32	39.99 ± 12.80	33.67 ± 16.34
KW	34.139	5.740	36.456	34.139	48.318	34.134	45.440	49.839
p	0.000*	0.057***	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Education								
Illiterate	9.90 ± 1.92	12.15 ± 4.00	9.58 ± 2.31	9.42 ± 2.56	8.14 ± 2.90	11.43 ± 3.09	38.15 ± 12.79	32.39 ± 15.83
Literate/primary school	11.81 ± 2.29	13.47 ± 3.96	11.78 ± 2.60	12.11 ± 2.54	11.41 ± 3.23	14.32 ± 2.60	53.05 ± 13.54	48.59 ± 15.94
Secondary/high school	13.23 ± 2.26	14.66 ± 4.55	12.76 ± 2.82	12.90 ± 2.32	12.26 ± 2.87	14.96 ± 1.71	59.16 ± 13.06	55.72 ± 15.63
University	13.83 ± 2.40	14.16 ± 4.75	13.66 ± 3.14	14.50 ± 1.22	15.16 ± 1.60	16.00 ± 0.00	65.97 ± 11.17	67.18 ± 8.55
KW	104.102	27.267	88.486	115.661	123.363	105.814	128.965	113.710
p	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Number of children								
No	10.91 ± 1.92	11.41 ± 3.52	10.16 ± 1.89	10.66 ± 2.77	8.91 ± 2.42	12.25 ± 2.73	42.01 ± 9.42	34.11 ± 11.18
one	10.88 ± 1.96	12.11 ± 3.85	11.22 ± 2.77	11.44 ± 2.55	10.33 ± 3.35	13.44 ± 3.28	47.33 ± 15.05	41.31 ± 18.00
two	11.22 ± 2.74	12.54 ± 3.66	10.68 ± 2.81	11.27 ± 2.45	10.59 ± 3.44	13.40 ± 3.04	47.63 ± 15.09	46.87 ± 14.49
Three and over	11.08 ± 2.48	13.06 ± 4.13	10.91 ± 2.80	10.98 ± 2.94	10.06 ± 3.56	13.10 ± 3.17	47.11 ± 15.65	42.11 ± 18.50
KW	0.141	3.754	0.837	0.891	1.504	1.652	1.142	3.987
p	0.986***	0.289***	0.841***	0.828***	0.681***	0.648***	0.767***	0.263***
Income status								
Income< expenditure	10.17 ± 1.95	12.67 ± 4.15	9.81 ± 2.27	9.66 ± 2.43	8.51 ± 2.85	11.78 ± 3.11	40.22 ± 12.92	32.25 ± 13.91
Income >expenditure	12.59 ± 2.50	13.47 ± 3.95	12.67 ± 2.60	13.21 ± 2.18	12.62 ± 3.01	15.28 ± 1.64	58.18 ± 12.54	58.36 ± 11.57
t	-11.441	-1.997	-12.239	-15.576	-14.509	-13.537	-14.451	20.530
p	0.000*	0.046**	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Place of residence								
Province	11.32 ± 2.53	13.12 ± 4.17	11.29 ± 2.77	11.42 ± 2.87	10.53 ± 3.48	13.62 ± 2.97	49.30 ± 15.30	44.98 ± 17.58
District/town	10.00 ± 1.87	11.91 ± 3.44	9.38 ± 2.01	9.85 ± 2.42	8.38 ± 3.15	12.00 ± 3.08	39.09 ± 13.11	35.66 ± 16.39
Village	10.31 ± 2.06	12.71 ± 3.92	9.44 ± 2.39	9.26 ± 2.52	8.34 ± 3.19	10.76 ± 3.00	38.39 ± 13.05	29.56 ± 16.47
F	8.280	1.523	18.689	18.911	15.314	27.196	19.649	23.660
p	0.000*	0.219***	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Living status								
Alone	10.19 ± 2.00	12.60 ± 4.16	9.58 ± 2.37	9.36 ± 2.58	8.02 ± 3.03	10.94 ± 3.23	38.25 ± 13.16	29.56 ± 16.35
With a married child	10.25 ± 2.06	12.48 ± 3.92	10.14 ± 2.20	10.41 ± 2.66	9.20 ± 3.08	13.14 ± 3.02	43.38 ± 12.96	39.56 ± 15.19
With spouse	11.52 ± 2.49	13.10 ± 4.10	11.30 ± 2.81	11.49 ± 2.86	10.69 ± 3.53	13.47 ± 2.98	49.59 ± 15.55	46.02 ± 17.58
With spouse and child (ren)	11.58 ± 2.78	13.45 ± 4.12	11.84 ± 2.90	11.96 ± 2.78	11.31 ± 3.31	14.43 ± 2.43	52.70 ± 15.02	47.46 ± 17.57
F	10.315	0.993	13.839	16.602	18.638	22.007	17.954	22.709
p	0.000*	0.396***	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*

*p<0.001, **p<0.05, ***p>0.05

Table 3A: Descriptive characteristics of individuals according to the WHOQOL-OLD and EUROHIS-QOL.8 comparison of average score (n=450).

Characteristics	Sensory abilities (Mean ± SD)	Autonomy (Mean ± SD)	Past, present and future activities (Mean ± SD)	Social participation (Mean ± SD)	Death and dying (Mean ± SD)	Intimacy (Mean ± SD)	Total score (Mean ± SD)	EUROHIS-QOL.8 (Mean ± SD)
Family Support								
Yes	11.16 ± 2.83	12.97 ± 3.90	11.07 ± 2.91	11.22 ± 2.79	10.23 ± 3.36	13.86 ± 2.56	48.47 ± 14.86	43.55 ± 17.86
No	11.07 ± 2.39	12.97 ± 4.13	10.85 ± 2.75	10.95 ± 2.93	10.02 ± 3.56	12.94 ± 3.24	46.69 ± 15.59	41.80 ± 18.28
t	0.302	-0.007	0.644	0.755	0.483	2.384	0.936	0.778
P	0.763***	0.995***	0.520***	0.450***	0.629***	0.018**	0.350***	0.437***
Social support environment								
Yes	11.82 ± 2.54	13.27 ± 4.09	11.87 ± 2.71	12.39 ± 2.47	11.62 ± 3.20	14.81 ± 2.15	53.97 ± 13.70	50.98 ± 15.52
No	10.26 ± 2.11	12.64 ± 4.07	9.80 ± 2.42	9.45 ± 2.55	8.32 ± 3.02	11.19 ± 2.99	39.26 ± 13.51	32.24 ± 15.72
t	7.009	1.647	8.495	12.378	11.205	14.840	11.444	12.705
P	0.000*	0.100***	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Perceived health								
Good	14.35 ± 1.96	14.52 ± 4.41	14.11 ± 2.52	14.52 ± 1.77	14.76 ± 2.56	15.47 ± 2.21	66.42 ± 12.04	68.01 ± 8.80
Moderate	12.99 ± 2.12	14.10 ± 3.90	12.86 ± 2.36	13.23 ± 2.16	12.86 ± 2.62	15.13 ± 1.88	59.58 ± 10.66	56.72 ± 12.26
Poor	9.69 ± 1.54	12.17 ± 4.00	9.46 ± 2.01	9.38 ± 2.15	8.02 ± 2.42	11.69 ± 3.05	37.95 ± 10.92	31.39 ± 13.03
KW	212.125	34.322	172 ± 996	199.223	218.702	136.623	223.454	231.546
P	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Comorbidity								
Yes	10.71 ± 2.28	12.82 ± 4.10	10.53 ± 2.69	10.61 ± 2.80	9.55 ± 3.32	12.82 ± 3.18	44.86 ± 14.86	39.54 ± 17.44
No	13.45 ± 2.33	13.95 ± 3.89	13.16 ± 2.15	13.44 ± 2.30	13.32 ± 3.03	14.90 ± 2.27	60.67 ± 11.88	58.55 ± 13.88
t	-8.704	-2.003	-7.247	-7.467	-8.336	-4.910	-7.916	8.116
P	0.000*	0.046**	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Tobacco use								
Smoking	13.40 ± 2.06	15.66 ± 4.08	13.53 ± 1.84	13.13 ± 1.84	12.26 ± 2.57	14.46 ± 2.47	60.90 ± 9.05	54.16 ± 16.09
Quit smoking	11.71 ± 2.43	13.57 ± 4.08	11.42 ± 2.95	11.52 ± 2.87	10.73 ± 3.51	13.46 ± 2.99	50.44 ± 15.83	45.32 ± 18.39
Never smoked	10.50 ± 2.34	12.40 ± 3.98	10.36 ± 2.53	10.50 ± 2.86	9.46 ± 3.46	12.76 ± 3.25	43.76 ± 14.53	39.14 ± 17.55
KW	41.271	21.086	27.531	21.620	21.239	7.967	32.225	17.703
P	0.000*	0.000*	0.000*	0.000*	0.000*	0.019**	0.000*	0.000*

*p<0.001, **p<0.05, ***p>0.05

Table 3B: Descriptive characteristics of individuals according to the WHOQOL-OLD and EUROHIS-QOL.8 comparison of average score (n=450).

WHOQOL-OLD Scale	GDS	
	r*	p**
Sensory abilities	-0.738	0.000
Autonomy	-0.315	0.000
Past, present and future activities	-0.774	0.000
Social participation	-0.836	0.000
Death and dying	-0.840	0.000
Intimacy	-0.714	0.000
Total score	-0.870	0.000
EUROHIS-QOL.8 Ölçeği	-0.830	0.000

*Pearson correlations analysis. **p<0.001.

Table 4: WHOQOL-OLD, EUROHIS-QOL.8 ve GDS the relationship between (n=450).

significantly. Many other studies have also found that education level is an important factor influencing quality of life. Individuals who had a higher education level had significantly higher quality of life scores [38,26-28,32]. Penniks et al. [8]. reported that physical function in older people who have lower education level was lower.

Having children did not significantly affect the mean score of depression. This result is similar to the result of the study made by Bingöl et al. [37]. Moreover whether or not a person had children did not affect the mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores. No statistically significant difference was found in the mean quality of life scores of the elderly with children and without children. The same result was also found in the study made by Ercan in a nursing home [39].

In this study, a low income level was found as a factor which

increased the mean score of depression. This result supports those of other studies [17,20]. In addition, income level is an important factor influencing health, well-being and quality of life. Individuals who had a low income level had significantly lower mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores than individuals who had their income equal to their expenses. Other studies have also reported that older individuals with a low income status have a diminished quality of life [26,31,33].

The mean scores of depression of individuals living in provincial centers were found to be lower than those living in other settlement areas. More difficult living conditions, hardship in accessing healthcare and other institutional services, distant shopping centers, and other similar reasons may negatively affect the mental conditions of the elderly living outside provincial centers. As well individuals living in provincial centers had higher mean scores in the WHOQOL-OLD

subdomains except for the autonomy and mean overall and EUROHIS-QOL.8 scores. The reasons for a lower quality of life in villages and boroughs/small towns than in provinces may be due to difficult working conditions, inadequate access to healthcare facilities, a lack of knowledge about health matters, and no tangible opportunities or possibilities to improve the quality of life.

Loneliness may play an etiological role in the development of physical and mental health problems in older people. Prolonged loneliness may jeopardize mental well-being of an individual and increase the risk of suicide [40]. We found in this study that living alone significantly increased the mean score of depression. The other studies have also reported depression symptoms to be significantly high [15, 24]. It has been also found in a study made in Lithuania with middle-aged and aged persons that depressive symptoms are seen less often in those living with less crowded families at home [36]. One study found the mean score of depression symptoms to be high, although not at a significant level [34]. Besides our study indicated that individuals who lived with their spouses or with their spouses and their child/children in a family atmosphere had higher mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores than those living alone or only with their children. This result is similar to that of the study conducted by Çalıştır et al. [26].

The emotional support given by children to the elderly in their families is vitally important to their mental and physical health [24]. However, this study found that family support or living without any support did not have any significant impact on depression scores. Another study reported similar results between perceived social support from the family and depressive symptoms [41]. Ejem et al. [42]. have reported in their study that the caregivers of the elderly with depressive symptoms have a higher mean emotional stress score than those giving care to the elderly with no depressive symptoms. The result of the present study can be explained by the fact that the family members may have perceived the burden of care as well as emotional stress and this situation may have affected their provision of sufficient and effective support.

The presence of social support is an important factor in sustaining and improving the psychosocial status and well-being of the elderly [43]. In this study we found that the mean scores of depression were significantly lower in the elderly with social support from associates (friends, neighbors, relatives) than in those who did not receive such support. The study [43] of found a significant relationship between perceived social support and depression in the negative direction, and another study found that the social support received from neighbors and friends was significantly lower in individuals who were at risk for depression [25]. In addition, those living with support from their family had higher mean scores from the WHOQOL-OLD subdomains except the autonomy subdomain and mean overall and EUROHIS-QOL.8 scores than those living without any support. However, a statistically significant difference showed only in the intimacy subdomain. Older people with social support had higher mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores than those who did not have it. This difference was statistically significant in all the WHOQOL-OLD subdomains except the autonomy subdomain and in the mean overall and EUROHIS-QOL.8 scores. Studies conducted in nursing homes have reported that there is a positive correlation between social support and life satisfaction [44] and between social support received from the family and quality of life [32].

The mean scores of depression were higher in older individuals who perceived their health as being poor than in those who did not.

This result is similar to the results of other studies [15,20,34,37] . In this study, individuals who perceived their health as being poor had significantly lower mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores than those who perceived their health as being well. Another study made with older people found that those who perceived their health as “poor” tended to have a higher level of dependency in daily living activities [45]. In another study made with middle-aged and aged subjects, perceived health and quality of life were significantly low in those with depressive symptoms than in those with no depressive symptoms [36].

Depression in the elderly has been reported to increase comorbidities, mortality, cognitive disorders, and weakness [46]. In this study the mean scores of depression of the elderly without any chronic disease were significantly lower than those with a chronic disease. Many studies have reported a significant correlation between chronic disease and depression [19,20,34,38,47,48]. Individuals have a chronic disease had significantly lower mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores than those without a chronic disease. Other studies have also found that presence of a concomitant disease is a risk factor resulting in a lower quality of life [27,31,49,50].

In this study, the mean scores of depression of individuals who had never smoked were significantly higher than for those who smoked and those who had smoked and quit. The sensation of touching a cigarette, the taste and smell it leaves in the mouth and the stimulus of the chemicals in smoke on the lung tissue give a psychological satisfaction to the person. This is the major factor in developing a smoking habit [51]. The lower risk for depression in smokers may be attributed to their belief that smoking relaxes them and enables them to control their emotions. Then again in this study, the mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores were found significantly high in those who smoked. In another study, older people with a smoking habit had a high quality of life in all subdomains except the general health subdomain, and this was significant in the emotional role and physical pain subdomains [28]. This can be explained by smokers’ insistence on the relaxing psychological effects of smoking which subsequently improves their quality of life.

Over time, depression plays an important role in a person’s decline in physical activity [8]. We found in this study that the mean GDS scores decreased as the mean WHOQOL-OLD subdomain, overall and EUROHIS-QOL.8 scores increased, and the difference in between was significant. There was a moderate correlation in the negative direction between individuals’ mean scores of WHOQOL-OLD subdomains of sensory abilities, past, present and future activities, social participation, death and dying and intimacy and their mean overall scores, and their mean GDS scores. There was a weak correlation in the negative direction between the mean WHOQOL-OLD autonomy subdomain score and the mean GDS scores, and there was a moderate correlation in the negative direction between the mean EUROHIS-QOL.8 scores and the mean GDS scores. Other studies have also reported that presence of depression significantly influenced quality of life in the negative direction [38,31,50].

The strength of the study was the results of the study were reported from one center which has a wide variety of patients from different socioeconomic states while the weaknesses of the study was the study sample did not include all the elderly living in the province of Erzincan, the results of the study can be generalized only to this group.

Conclusion

Our study results determined that the majority of older people

were at risk for depression and as the mean depression risk score increased, the mean quality of life score decreased. The mean score of depression risk increased with being at an advanced age, being female, being single or widowed, having a low education level, a low income level, not living in a city, living alone, not receiving social support from associates, health being perceived as poor, and having a chronic disease, whereas smoking decreased it. Being female, having a low education level, low income level, poorly perceived health and having a chronic disease decreased all the WHOQOL-OLD subdomain, overall and mean EUROHIS-QOL.8 quality of life scores. Being at an advanced age, being single or widowed, not living in a city, living alone, and not being able to receive social support from associates negatively affected all mean WHOQOL-OLD subdomain scores except autonomy, mean overall scores and mean EUROHIS-QOL.8 scores, whereas living conditions negatively affected the mean score of the WHOQOL-OLD intimacy subdomain.

As for the future, if we are committed to improving the quality of life for our elderly, we highly recommend that they be acknowledged as a priority risk group for the disorder of depression. They should be screened routinely not only for general health but also for depression. In addition, more geriatric hospitals and outpatient clinics need to be established, and home care projects should be developed to help improve the quality of life for our elderly. Lastly, training programs pertaining to gerontology should be developed to increase the knowledge, skills, and awareness of health professionals, families and communities at large. In these ways, we hope to be able to improve the health and lives of our very vulnerable elderly citizens.

Acknowledgements

This study was accepted as an undergraduate thesis in 2012 at Erzincan University, Health Sciences Institute, Nursing Department and was presented as a poster presentation at the 12th National Public Health Congress, Turkey (2-6 October 2012). We thank all study subjects for their willing participation.

References

1. Bilir N, Erbaydar N. P. Aging problems. (Güler, G. Edit). Public Health Basic Information. Volume: III. Broaden Second Edition, Hacettepe University Publications.2012.
2. WHO. (1984) The uses of epidemiology in the study of the elderly. Technical Reports Series 706 Geneva : 8-9.
3. World Health Organization (2014) Ageing and life-course. Facts about ageing.
4. Turkish Statistic Institute (2013) Population projections, 2013-2075: 15844.
5. The situation of older people in Turkey and aging implementation plan, 2007. Publication No: DPT: 2741. <http://ekutup.dpt.gov.tr/nufus/yaslilik/eylemler.pdf>
6. Göktas K, Özkan I (2006) Depression in older. *Psychiatry in Türkiye* 8: 31-37.
7. Erden-Aki Ö (2010) Differential diagnosis of depression and dementia in elderly. *Turkish Journal of Geriatrics* 13 (Supplement 3) : 37-42.
8. Penninx BW, Deeg DJ, van Eijk JT, Beekman AT, Guralnik JM (2000) Changes in depression and physical decline in older adults: a longitudinal perspective. *J Affect Disord* 61: 1-12.
9. Wada T, Ishine M, Sakagami T, Okumiya K, Fujisawa M, et al. (2004) Depression in Japanese community-dwelling elderly--prevalence and association with ADL and QOL. *Arch Gerontol Geriatr* 39: 15-23.
10. Beger T, Yavuzer H (2012) Yaslilik ve Yaslilik Epidemiyolojisi. *Klinik Gelism* 25: 1-3.
11. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, et al. (1982) Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res* 17: 37-49.
12. Ertan T, Eker E, Sar V (1997) Reliability and validity of the geriatric depression scale in Turkish older population. *Archives of Neuropsychiatry* 34: 62-71.
13. Eser S, Saatli G, Eser E, Baydur H, Fidaner C (2010) [The reliability and validity of the Turkish Version of the World Health Organization Quality of Life Instrument-Older Adults Module (WHOQOL-Old)]. *Turk Psikiyatri Derg* 21: 37-48.
14. Eser E, Lagarlı T, Baydur H, et al. (2010) Psychometric properties of The Turkish version of the EUROHIS-Tr (WHOQOL-8-Tr) in a Turkish population. *Journal of Public Health, Turkey* 8: 136-152.
15. Stek ML, Gussekloo J, Beekman AT, van Tilburg W, Westendorp RG (2004) Prevalence, correlates and recognition of depression in the oldest old: the Leiden 85-plus study. *J Affect Disord* 78: 193-200.
16. Maral I, Aslan S, İlhan MN, et al. (2001) Depression and risk factors: A comparative study on older persons living at home and in Nursing Homes. *Turk Psikiyatri Dergisi* 12: 251-259.
17. Ekinci, M, Tortumluoglu G, Okanlı A, et al. (2004) The prevalence of depression in elderly living at home in eastern Turkey: Erzurum. *International Journal of Human Sciences:ISSN: 1303-5134*:2-10.
18. Çınar ÖL, Kartal A (2008) Signs of depression in the older relationship between depression and sociodemographic characteristics. *TAF Prev Med Bull* 7: 399- 404.
19. Hacıhasanoğlu R, Türkles S (2008) Depression and affecting factors in the old at the age of 65 and over. *Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi* 11: 55-60.
20. Ambo H, Meguro K, Ishizaki J, Shimada M, Yamaguchi S, et al. (2001) Depressive symptoms and associated factors in a cognitively normal elderly population: the Tajiri Project. *Int J Geriatr Psychiatry* 16: 780-788.
21. Mohd Sidik S, Mohd Zulkefli NA, Mustaqim A (2003) Prevalence of depression with chronic illness among the older in a rural community in Malaysia. *Asia Pacific Family Medicine* 2: 196-199.
22. Whooley MA, Stone B, Soghikian K (2000) Randomized trial of case-finding for depression in elderly primary care patients. *J Gen Intern Med* 15: 293-300.
23. Jongenelis K, Pot AM, Eisses AM, Beekman AT, Kluitert H, et al. (2004) Prevalence and risk indicators of depression in elderly nursing home patients: the AGED study. *J Affect Disord* 83: 135-142.
24. Zunzunegui MV, Béland F, Otero A (2001) Support from children, living arrangements, self-rated health and depressive symptoms of older people in Spain. *Int J Epidemiol* 30: 1090-1099.
25. Canbaz S, Sunter AT, Dabak S, et al. (2003) The prevalence of chronic diseases and quality of life in older people in Samsun. *Turk J Med Sci* 33: 335-340.
26. Çalistr B, Dereli F, Ayan H, et al. (2006) Life quality of the elder people living in the city Centre of Muğla. *Turkish Journal of Geriatrics* 9: 30-33.
27. Güler N, Akal Ç (2009) Quality of life of older people aged 65 years and over living at home in Turkish Journal of Geriatrics 12: 181-189.
28. Kaya M, Aslan D, Vaizoglu, SA, et al. (2008) Determination of life quality of Elder and related factors in a District of Ankara, Turkey. *Turkish Journal of Geriatrics* 11: 12-17.
29. Dişçigil G, Gemalmaz A, Basak O, et al. (2005) Depression in geriatric age group in a primary care setting. *Turkish Journal of Geriatrics* 8: 129-133.
30. Ulusel B, Soyer A, Uçku R (2004) Dependence in daily living activities among community dwelling older: Prevalence and risk factors. *Turkish Journal of Geriatrics* 7: 199-205.
31. Sönmez Y, Uçku, R, Kitay S, et al. (2007) Quality of life and the factors affecting it among people aged 75 years and over living in a health center region in Izmir. *DEÜ Tıp Fakültesi Dergisi* 27: 145-153.
32. Tseng SZ, Wang RH (2001) Quality of life and related factors among elderly nursing home residents in Southern Taiwan. *Public Health Nurs* 18: 304-311.
33. Tajvar M, Arab M, Montazeri A (2008) Determinants of health-related quality of life in elderly in Tehran, Iran. *BMC Public Health* 8:323:1-8.
34. Keskinoglu P, Piçakçiefe M, Giray H, et al. (2006) Depressive signs and risk factors in the older. *Genel Tıp Dergisi* 16: 21-26.
35. Barcelos-Ferreira R, Nakano EY, Steffens DC, et al. (2013) Quality of life and physical activity associated to lower prevalence of depression in community-dwelling elderly subjects from Sao Paulo. *J Affect Disord* 150: 616-22.
36. Sapranaviciute-Zabazlajeva L1, Reklaitiene R, Tamosiunas A, Baceviciene M, Virviciute D, et al. (2014) Correlates of depressive symptoms in urban middle-aged and elderly Lithuanians. *Soc Psychiatry Psychiatr Epidemiol* 49: 1199-1207.

37. Bingöl G, Demir A, Karabek R, et al. (2010) Analysing the depression levels of the individuals more than 65 in terms of some variables. *Göztepe Tip Dergisi* 25: 169-176.
38. Akyol Y, Durmus D, Dogan C, et al. (2010) Quality of life and level of depressive symptoms in the geriatric population. *Turk J Rheumatol* 25: 165-173.
39. Ercan N (2010) Quality of Life and Related Factors of Older People in Nursing Home, Hacettepe University, Health Science Institute, Master Thesis in Public Health Nursing, Ankara
40. Khorshid L, Eser I, Zaybak A, et al. (2004) The evaluation of loneliness level of older individuals residing in rest homes. *Turkish Journal of Geriatrics* 7: 45-50.
41. Altay B, Avcı IA (2009) Relationship of perceived family social support and depression symptoms of old people living in Alanlı District, Samsun. *TAF Prev Med Bull* 8: 139-146.
42. Ejem DB, Drentea P, Clay OJ (2015) The effects of caregiver emotional stress on the depressive symptomatology of the care recipient. *Aging Ment Health* 19: 55-62.
43. Aksüllü N, Dogan S (2004) Relationship of social support and depression in institutionalized and non-institutionalized older. *Anatolian Journal of Psychiatry* 5: 76-84.
44. Altıparmak S (2009) The levels of life satisfaction, social support and factors affecting these in older people living at Nursing Homes. *F.Ü. Sag. Bil. Tip Derg* 23: 159-164.
45. Hacıhasanoğlu R, Yıldırım A, Karakurt P (2012) Loneliness in elderly individuals, level of dependence in activities of daily living (ADL) and influential factors. *Arch Gerontol Geriatr* 54: 61-66.
46. Ismail Z, Fischer C, McCall WV (2013) What characterizes late-life depression? *Psychiatr Clin North Am* 36: 483-496.
47. Sidik SM, Zulkefli NAM, Mustaqim A (2003) Prevalence of depression with chronic illness among the older in a rural community in Malaysia Asia Pacific Family Medicine 2: 196-199.
48. İlhan MN, Maral I, Kitapçı M, et al. (2006) Factors influencing depressive symptoms and cognitive disorders among older. *Klinik Psikiyatri* 9: 177-184.
49. Groessl EJ, Kaplan RM, Rejeski WJ, Katula JA, King AC, et al. (2007) Health-related quality of life in older adults at risk for disability. *Am J Prev Med* 33: 214-218.
50. Altug F, Yagci N, Kitis A (2009) Analyzing of factors affecting the quality of life in older at home. *Yasli Sorunlari Arastirma Dergisi* 1: 48-60.
51. Evci M (2001) Researching the reduction of cigarette's harmful effect on human health and environment with Syrian rue plant. Sakarya University Science Institute Department of Environmental Engineering, Master Thesis, Sakarya.