



## Loneliness in Elderly People, Associated Factors and Its Correlation with Quality of Life: A Field Study from Western Turkey

\* Hülya ARSLANTAŞ<sup>1</sup>, Filiz ADANA<sup>2</sup>, Filiz ABACIGİL ERGİN<sup>3</sup>, Derya KAYAR<sup>4</sup>, Gülçin ACAR<sup>2</sup>

1. Dept. of Mental Health and Diseases Nursing, Aydın Health College, Adnan Menderes University, Aydın, Turkey
2. Dept. of Community Health Nursing, Aydın Health College, Adnan Menderes University, Aydın, Turkey
3. Dept. of Community Health, Faculty of Medicine, Adnan Menderes University, Aydın, Turkey

\*Corresponding Author: Email: hulyaars@yahoo.com

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### Abstract

**Background:** This study examined the factors that affect loneliness of older people and their relationship with quality of life.

**Methods:** Data in this cross-sectional study were collected through survey form, UCLA Loneliness Scale and Quality of Life (QOL) Short Form (SF-36) Scale. The total number of elderly people over the age of 65 yr from whom the study population was chosen was 4,170. The study population was determined as 190 with G-power program by taking impact size 0.362,  $\alpha=0.05$ , power  $(1-\beta)=0.80$  at a confidence level of 95% and a substitute group composing of 10 individuals was added. In total, 83.2% (n=174) of the target population was reached via Multi-Stage Sampling Methods.

**Results:** UCLA Loneliness median score of the participants was 33 (25<sup>th</sup>p= 27, 75<sup>th</sup>p= 40). It was found that the existence of chronic diseases and physical handicaps, regular use of medication, lack of hobbies and living with spouse increased loneliness ( $P<0.05$ ). A negative relationship was identified between all sub-scales in the QOL scale and loneliness.

**Conclusion:** Loneliness negatively affects QOL in old age and that the existence of chronic health problems and lack of hobbies are strong predictors for loneliness. Elderly people living alone must be evaluated as a high-risk group and thus policy makers and health personnel should be aware of the factors that can affect loneliness. In order to increase life quality of the aged population and psychological well-being of the elderly, social support systems must be taken into account and the elderly should be encouraged to participate in social activities.

**Keywords:** Old age, Loneliness, Quality of life

### Introduction

Increases for population have been observed in almost every country due to recent medical and technological advances. It is expected that an increase from 11% to 22% in the number of individuals that are 60+ between the years of 2000 and 2050 will occur in the world. The population rate of individuals who were 65+ in Turkey was

7.7% in 2013. Based on population projections, this rate is estimated to increase to 10.2% in 2023 and 20.8% in 2050 (1). Old age is a developmental process with chronological, social, biological and psychological dimensions. The physical, mental, psychological and social changes experienced dur-

ing this period require the individual to adapt by making new adjustments (2).

As people enter the old age period, they may experience age specific problems and handicaps such as regressions in cognitive and physical health, lead less productive roles and experience changes in social status, declines in interpersonal support and loss of health and this process may bring loneliness (3,4). Loneliness is an important research and practice field in old age. It is well known that loneliness and quality of life significantly affect psychological wellbeing. Individual differences such as level of education, marital status, learned behaviors, social skills/hobbies and social support could affect loneliness (5, 6).

Prevalence of loneliness in the aged may change from 7% (7) to 49% (8). 43.6% of older people experienced medium level of loneliness while 10.9% experienced high levels (9). Similar results were found in studies, which utilized UCLA Loneliness Scale in Turkey. A study (10) found loneliness mean score as  $41.87 \pm 8.43$  and Ünal and Bilge's (11). The study identified the loneliness mean score as  $37.10 \pm 9.09$  and the rate of feelings of loneliness in both studies was found to be 40-50%.

From the literature in this area it can be seen that the most important factors that cause loneliness in the elderly were being female, advanced age, low level of education, being unmarried, widow, poor health, genetic characteristics (studies on twins and siblings showed similar chromosomal linkage and supported heritability of loneliness), loss of a partner, unemployment, low income levels and living alone (9, 12-18). The outcomes of loneliness, such as negative physiological changes along with negative cognitive effects, are observed in this period. The most important outcomes of loneliness in old age such as depression, suicide/alcohol abuse have been examined in various studies. These negative effects related to loneliness also negatively influence quality of life. Considering the biological changes that occur with advanced age, increases in health problems, functional incompetence and dependence in daily life activities can negatively affect the quality of life (7, 9, 12, 13, 19-21). Several socio-demographic characteristics af-

fect quality of life and loneliness. Understanding these demographic variables is crucial in order to deal with the problems of older people to ensure that they receive sufficient support.

The aim of this study was to investigate loneliness in elderly people, associated factors and its correlation with quality of life.

## Materials and Methods

The study design was community based and cross-sectional between 2013 and 2014. The study protocol was approved by Aydın Provincial Directorate of Health.

### Study group

The study was conducted in İncirliova, a district that is 10 km from Aydın city center, a western city of Turkey. The research area does not receive migration from other regions and there is a large older population. A total of 4170 (2372 females; 1798 males) older individuals were living in the district. The inclusion criteria were that the individuals were aged 65 years or older, with no communication problems, psychotic diseases, diseases such as Alzheimer, dementia or Parkinson's and no secondary problems such as substance abuse. The study population was determined as 190 using the G-power program by taking impact size 0.362 (Based on a similar study result),  $\alpha=0.05$ , power  $(1-\beta) = 0.80$  at a confidence level of 95 % and a substitute group composing of 10 individuals was added. A total of 174 (83.2%) individuals were reached. Multi-stage sampling method including cluster and simple random method was used. As there are four neighborhoods in the district center, sample selection was carried out based on weighing the older population rate of each neighborhood and the targeted number of women was decided from each neighborhood. In each neighborhood, streets, which were regarded as clusters, were numbered and from each neighborhood, a street was selected by simple random sampling method. If the targeted number of older people was not reached in the selected street, the next street was selected to complete the required sample size. After the participants had been in-

formed about the study, their informed consent was obtained. Questionnaires were filled in the participants' homes by nursing students who had received 3 hours of education for this study in face-to-face interview techniques. When individuals were not found at home at the first time, a second home visit was carried out. In cases when they were not found, the individual was replaced with a substitute.

### **Questionnaire**

The questionnaire was comprised of two parts. The first part was designed to investigate the participants' demographic characteristics and health status of the participants such as age, gender, marital status, education status, income, occupation, handicaps, dependency level, medically diagnosed chronic diseases, and hobbies.

The second part was planned to determine the loneliness level and life quality of the aged population by applying related scales.

### **Scales**

**UCLA Loneliness Scale:** The original scale was developed by Russel et al. (22) Turkish validity and reliability was undertaken by Demir (23) (Cronbach alpha=0.96). The 4-point Likert type scale is composed of 20 questions. The lowest total score is 20; highest total score is 80 while a high score indicates that the individual experiences greater levels of loneliness.

**Quality of Life Scale (QOL) Short Form 36 (SF-36):** The form was developed by Ware and Sherbourne (24). Turkish validity study was done by Koçyiğit et al. It is composed of 36 items that measure eight dimensions: physical functioning, social functioning, limitations of role functioning based on physical problems (RF-PP), limitations of role functioning based on emotional problems (RF-EP), mental health, energy/vitality, body pain and general health perceptions (GHP). Sub-scale scores change between 0 and 100. Higher scores point to increased quality of life (25).

### **Definitions**

Individuals who were unable to independently take baths, feed themselves, shop, walk, use the restroom

and do housework were defined as "dependent". World Health Organization International Classification of Functioning, Disability, and Health (WHO ICF) check list was used for handicap evaluation.

### **Statistical Analysis**

Statistical analysis was performed by using the SPSS software version 17.0. The variables were investigated using visual (histograms, probability plots) and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk's test) to determine whether they are normally distributed. Descriptive analyses were presented using medians (Mdn) and 25<sup>th</sup>-75<sup>th</sup> percentiles values for the non-normally distributed variables while means±standard deviation was used for normally distributed variables. Since the UCLA loneliness scale results were not normally distributed, non-parametric-tests (The Mann-Whitney U test) were conducted to compare these parameters. Relationships between loneliness and quality of life were analyzed by Spearman's Correlation Analysis.

### **Results**

Mean age of the participants was  $73.16 \pm 6.22$  and 46.6% of the participants were illiterate. 54.0% did not work, 24.7% did not have social insurance, 32.8% had spouses and 97.7% had children. 18.4% of the older people expressed that they lived alone. 66.1% of the participants stated that their income was sufficient, 54.6% stated that they had salaries and 4.6% received income from rent. 79.3% of the older people had chronic diseases; 49.1% had high blood pressure, 26.4% heart disorders, 21.3% had diabetes, 9.8% had asthma and 2.3% had cancer. It was identified that 75.3% had no hobbies. UCLA loneliness median score of the participants was 33 (25<sup>th</sup>p= 27, 75<sup>th</sup>p= 40). Gender, marital status, level of education, life style, problems with hearing, speaking and vision, having children, dependence in daily activities, sleep patterns and having sufficient income were not associated with greater loneliness scores ( $P > 0.05$ ).

**Table 1:** Some characteristics of the participants and its relation with the UCLA loneliness scores

	n (%)	UCLA score levels		P
		Median	25 <sup>th</sup> -75 <sup>th</sup> percentiles	
<b>Gender</b>				
Female	87(50.0)	34.0	27.0-42.0	0.171
Male	87(50.0)	32.0	26.0-38.0	
<b>Marital Status</b>				
Married	121(69.5)	33.0	27.0-39.0	0.628
Other	53(30.5)	32.0	26.5-41.5	
<b>Level of Education</b>				
Primary School	164(94.3)	32.0	27.0-39.7	0.443
Higher than Primary School	10(5.7)	32.5	29.7-55.5	
<b>Life style</b>				
Living alone	32(18.4)	33.0	25.2-41.7	0.561
Not living alone	142(81.6)	32.0	27.0-39.0	
<b>Chronic Diseases</b>				
Yes	138(79.3)	33.0	29.0-41.0	<b>0.015</b>
No	36(20.7)	28.5	24.2-36.7	
<b>Physical Handicap</b>				
Yes	13(7.5)	44.0	34.0-52.0	<b>0.002</b>
No	161(92.5)	32.0	26.0-39.0	
<b>Visual Handicap</b>				
Yes	11(6.3)	33.0	30.0-39.0	0.788
No	163(93.7)	32.0	27.0-40.0	
<b>Auditory Handicap</b>				
Yes	14(8.0)	31.0	29.2-35.0	0.614
No	160(92.0)	33.0	27.0-40.0	
<b>Speech Handicap</b>				
Yes	2(1.1)	50.5	50.0-51.0	0.053
No	172(98.9)	32.0	27.0-39.0	
<b>Regular use of medication</b>				
Yes	136(78.2)	33.5	29.0-41.0	<b>0.007</b>
No	38(21.8)	28.5	24.7-36.2	
<b>Children</b>				
Yes	169(97.7)	32.0	27.0-39.5	0.107
No	5(2.3)	38.0	32.5-64.0	
<b>Dependency</b>				
Yes	29(16.7)	31.0	27.5-41.0	0.974
No	145(83.3)	33.0	27.0-39.0	
<b>Sleep problems</b>				
Yes	46(26.4)	32.5	29.0-41.0	0.877
No	128(73.6)	32.0	26.2-39.7	
<b>Hobbies</b>				
Yes	43(24.7)	30.0	24.0-37.0	<b>0.041</b>
No	131(75.3)	34.0	28.0-41.0	
<b>Spouse</b>				
Yes	57(32.8)	37.0	27.5-44.5	<b>0.010</b>
No	117(67.2)	31.0	26.0-37.5	
<b>Income</b>				
Sufficient	115(66.1)	32.0	26.0-41.0	0.342
Insufficient	59(33.9)	33.0	30.0-39.0	

However, existence of chronic diseases or physical handicaps, regular use of medication, lack of hobbies and living with a spouse were associated with increased feelings of loneliness ( $P<0.05$ ). Physically handicapped participants (Mdn=44.0) felt more loneliness than non-physically handicapped participants (Mdn=32.0),  $U=509.0$ ,  $z=-3.079$ ,  $P<0.01$ . Likewise, participants with chronic diseases, those using regular medication, those living with a spouse or those with no hobbies felt more lonely ( $P<0.05$ ) (Table 1).

In order to compare loneliness levels for participants living with a spouse in terms of gender differences, a subgroup analysis according to gender was performed. In both of the gender groups, loneliness levels were high in participants who were living with a spouse. However, no significant relation was found ( $P>0.05$ ). (Table 2).

**Table 2:** Gender differences in living with a spouse and its relation with the UCLA loneliness

Gender		UCLA score levels		P
		Median	25 <sup>th</sup> -75 <sup>th</sup> percentiles	
Male	Spouse			
	Yes	37.0	32.0-53.0	0.177
	No	32.0	25.2-37.7	
Female	Spouse			
	Yes	36.5	27.0-44.2	0.077
	No	31.0	27.0-37.5	

It was found that loneliness was associated with quality of life. There was a negative and significant relationship between loneliness and all sub-scales of quality of life ( $P<0.05$ ) (Table 3).

**Table 3:** Relationship between loneliness scores and sub-scales of life quality (UCLA)

	Physical functioning	RF-PP*	RF-EP**	Social functioning	Vitality	Pain	GHP***	Mental health
r	-,340	-,315	-,233	-,454	-,423	-,433	-,331	-,268
P	,000	,000	,002	,000	,000	,000	,000	,000

\***RF-PP:** Limitations of role functioning based on physical problems

\*\***RF-EP:** Limitations of role functioning based on emotional problems

\*\*\***GHP:** General health perceptions

## Discussion

It is known that feelings of loneliness and life quality closely affect psycho-social well-being. UCLA loneliness median score of the participants was 33 (25<sup>th</sup>p= 27, 75<sup>th</sup>p= 40). Some studies on older people living in nursing homes found loneliness scores as  $41.87\pm 8.43$  and  $37.10\pm 9.09$  respectively (10,11).

Approximately one third of the older people in Finland experienced loneliness (26) and social studies from England reported the loneliness rate to be between 5-16% (27, 28). The Dublin Healthy Ageing Study reported that 10% of the older individual soften or at all times felt lonely (29). 7.5% of older people lived alone and 11.9% experienced feelings of loneliness in Singapore (21). Liu and Guo's (12) study found the loneli-

ness score of older people to be  $34.08\pm 9.30$  and identified that 38.1% experienced medium levels of loneliness and 6.3% experienced high levels.

Many of the results of studies in our country are similar to the findings of this study although they were undertaken in various regions and with different groups. This may be related to the fact that social activities in the framework of active aging programs and opportunities to use autonomy are restricted in developing countries like those that Turkey compared to developed countries. The World Health Organization defines active ageing as a process that uses security, participation and sustainable health opportunities in a manner to improve life quality of individuals (30). Supportive physical and social environments and health care needs of the older people should be provided to improve life quality.

Loneliness is experienced subjectively and may result from dissatisfaction in human relationships and unmet close relationships or social needs. Therefore, it is rather hard to provide comparisons between societies about specific factors that cause loneliness. It is observed that loneliness is expressed to a lesser extent in societies where social relationships and traditional structures are preserved but individuals' perceptions of the quality of their relationships may cause the existence of loneliness in different dimensions.

In our study, we found that gender, marital status, level of education, life style, hearing, speaking and visual handicaps, having children, dependence in daily activities, sleep patterns and having sufficient income did not affect loneliness. There were different research findings for these variables in the literature. Due to the similar socio-demographics of the participants, we found no relation with the variables mentioned above.

Older people have trouble in adapting to the process of ageing due to physiological changes experienced in this period. It is known that there is a negative relationship between loneliness and physical health and psychosocial well-being (6, 31). It has been reported that individuals with physical insufficiencies such as visual, audio and physical handicaps and health problems such as chronic diseases experience more loneliness (32). We found that the existence of chronic diseases and physical handicaps affected loneliness but in contrast, problems related to vision, hearing and speech did not have effects on feelings of loneliness. This may be related to the fact that the number of individuals with these disorders was small in the research group and the individuals with these problems solved their problems with the help of social support systems found in their environments.

Chronic diseases bring many problems such as being insufficient in self-care, pain, lack of sleep, restrictions in social life and adaptation/maladjustment to regular use of medication. Older people may have difficulties in coping with these situations due to the restrictions experienced physically or socially and may feel loneliness.

Literature findings also supported the current results (8, 31, 33, 34). Having hobbies increases communication with the social environment. In addition, occupying one with tasks may be contributing to feeling busy, feeling less lonely and feeling useful. Savikko et al. (9) identified that loneliness risk increases in widowed individuals (35). The reason why having a spouse is a factor that prevents individuals from loneliness can be explained by Weiss's attachment theory. Lack of a secure attachment figure in one's life such as a spouse may cause emotional loneliness (3, 5, 9, 35). The fact that our finding is different from the literature results may be explained in several ways. Having a spouse in a traditionally Eastern culture such as Turkey, sometimes restrict individuals. In societies where traditional structures are preserved, social exclusion is experienced along with old age. Spouses may restrict each other in relationships with the social environment. Another reason may be related to the fact that spouses may not have as many feelings and thoughts to share in their advanced age. This is often observed in females, who despite spending much more time at home, they share less along with old age. In this study there was a negative relationship between loneliness and all sub scales of QOL. This finding points to the fact that the QOL decreases along with increased feelings of loneliness. Loneliness causes poor prognosis in old age and decreases QOL. Study results in the literature also supported our findings (7,9,12,13,19-21,35).

Based on the findings obtained from QOL scale, the older people with feelings of loneliness were found to experience problems at work or in daily life because of restrictions in physical roles and regression in physical health. Having poor mental health causes these individuals to be perpetually nervous or depressed. Low energy levels cause them to be continually tired and exhausted. Having low health perceptions point to the belief that the older people feel that their health condition is poor and will get even worse. These results show that loneliness negatively affects QOL in old age, their daily lives and perceptions about their health and causes emotional grievances. Poor physical and social functioning show that the older people

restricted in undertaking physical activities, face problems in social activities and cannot cope with these problems.

## Conclusion

Loneliness negatively affects QOL in old age and that the existence of chronic health problems and lack of hobbies are strong predictors for loneliness. Elderly people living alone must be evaluated as a high-risk group and thus policy makers and health personnel should be aware of the factors that can affect loneliness. In order to increase QOL of the aged population and psychological well-being of the elderly, social support systems must be taken into account and the elderly should be encouraged to participate in social activities. It is crucial to benefit from the experiences of older people, to have them as role models and to provide opportunities for them to develop their potential by allowing them to participate in social activities instead of excluding them from society. Along with the increase of the older population in our country, maintaining their QOL should be one of the priorities of health services at present and in the future.

## Ethical Considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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