

# Comparison of depression, loneliness, quality of life and cognitive levels in elderly people living in a nursing home, living at home with their families or living alone

Eurasian Clinical and Analytical Medicine Original Research

## Psychological health in the elderly

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### Abstract

**Aim:** Our study aimed to compare the depression, loneliness, quality of life, and cognitive levels of the elderly living alone, in a nursing home, or with family members.

**Material and Methods:** 120 people aged 65 and over were included in the study. "Geriatric Depression Scale (GDS)" for depression levels, "University of California, Los Angeles Loneliness Scale (UCLA-LS)" for loneliness levels, "Mini Mental State Examination (MMSE)" and "Clock Drawing Test (CDT)" for cognitive levels, and "World Health Organization Quality of Life Module for the Elderly (WHOQOL)" for quality of life were used. SPSS 27.0 program was used in the analysis of the data and the significance level was determined as  $\alpha=0.05$ .

**Results:** The GDS score was found to be significantly ( $p<0.05$ ) higher in the nursing home and living alone groups than in the group living with family members at home. In the group living alone, the UCLA-LS and CDT score were found to be significantly higher ( $p<0.05$ ) than the other groups. In the group living at home with family members, the WHOQOL and MMSE scores were found to be significantly higher ( $p<0.05$ ) than the other groups.

**Discussion:** The results of this study showed that the depression and loneliness levels of the elderly living alone or in nursing homes were higher than those of living with their families, and their quality of life and cognitive levels were lower.

### Keywords

Nursing Home, Elderly, Depression, Loneliness, Quality of Life

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## Introduction

The proportion of elderly individuals in the global population is increasing steadily; as societies age, diseases that are common during old age are becoming increasingly important. Old age is defined by the World Health Organization as the period of life from 65 years and above. While the proportion of individuals over the age of 65 in England was only 5% at the end of the 19th century, this rate increased to 16% by the 21st century. This rate is expected to increase to 24% by 2034. Today, the transition to urban life and technological developments are rapidly increasing while communication and social interaction among people are decreasing. For this reason, an increase in feelings of loneliness and levels of depression among individuals is observed. Especially with the effect of aging, mental decline can occur more easily. For this reason, feelings of loneliness and depression are two important reasons that negatively impact the health of elderly individuals, and this situation also results in a decline in cognitive function and quality of life [1].

Turkey is one of the countries with a rapidly growing elderly population. This development necessitates various changes at the societal level. The growing elderly population also increases the importance of studies on the elderly. In the traditional Turkish family structure, the elderly hold a very important position; they are respected, consulted and listened to. When valued within the family, all the needs of the individual are met by the generations to come. This environment provides a protective shelter for the elderly individuals. Although the tendency for the elderly to live with their families and children remains high in our country, in recent years, migration to urban life, transition from traditional large family structure to nuclear family life, and the increase in the place of women in the workforce have created a greater need for institutional care for elderly individuals [2]. This situation causes the elderly individuals to see themselves as a burden to their families, and increases their feelings of worthlessness, loneliness and isolation. As a result, the number of elderly individuals living alone or in nursing homes has increased. Living under an institutional care results in a decrease in environmental and psychosocial stimuli, a loss of autonomy and loneliness for elderly individuals [3]. A study conducted in India in 2015 revealed that the rate of depression was higher among elderly individuals living in urban settings, those in nuclear families, women, those of advanced age, and those with functional and cognitive impairments. In contrast, the rate of depression was found to be lower among elderly individuals living with extended families and relatives, or in rural areas. This difference was associated with the fact that elderly individuals living in cities are isolated from their surroundings and are generally the ones in need of care within nuclear families [4]. A study conducted by the Hacettepe University Internal Medicine Geriatrics Unit identified factors such as lack of social activities, decreased cognitive capacity, living alone, low education levels, being unmarried, and insufficient social support as the main causes of geriatric depression [5]. A study conducted in China also showed that depression is directly related to lifestyle factors [6]. A study conducted in Turkey in 2018 revealed that most elderly individuals living in nursing homes have cognitive impairments and depression. The findings of the study show that cognitive function is negatively correlated with depression and positively correlated with quality of life. While improving cognitive functions leads to a decrease in depression and an increase in quality of life, a decrease in depression also results in an increased quality of life [3]. In light of these results, it is emphasized that multi-center studies should be conducted to determine the factors affecting the cognitive, emotional and quality of life status of individuals living in nursing homes and that initiatives should be expanded in this regard. It is of great importance to improve the quality of life of elderly individuals and to understand the effects of environmental and psychological factors on them. Therefore, it is

necessary to reduce or eliminate these negative effects by providing comprehensive services to the elderly individuals. This study aimed to compare depression, loneliness, quality of life, and cognitive levels of among elderly people living alone, in a nursing home or with family members.

## Material and Methods

### Participants

The study will be conducted from February 2023 to February 2024. The study included individuals who were 65 years of age and older, volunteered, had no hearing or speech problems, had sufficient communication skills, spoke Turkish fluently, had no known psychiatric illnesses, resided in Balıkesir province, and randomly selected. The study was conducted with a total of 120 individuals. The individuals were divided into three groups, with 40 participants in each group. The first group consisted of individuals living alone, the second group included individuals living with their families, and the third group included individuals living in nursing homes in Balıkesir province.

### Questionnaires

The data needed for the study were obtained using a face-to-face interviews and surveys method. Participants were informed about the study through an "Informed Consent Form" and were asked to complete the relevant surveys after providing their consent. "Geriatric Depression Scale (GDS)" for depression levels, "University of California, Los Angeles Loneliness Scale (UCLA-LS)" for loneliness levels, "Mini Mental State Examination (MMSE)" and "Clock Drawing Test (CDT)" for cognitive levels and "World Health Organization Quality of Life Module for the Elderly (WHOQOL)" for quality of life were used.

### Statistical analysis

The distribution of variables was assessed by Kolmogorov-Smirnov and Shapiro-Wilk test. Kruskal-Wallis, Mann-Whitney U test was used in the analysis of quantitative independent data with non-normal distribution. Chi-square test was used in the analysis of qualitative independent data, and Fischer test was used when chi-square test conditions were not met. SPSS 27.0 program was used in the analyses.

### Ethical Approval

This study was approved by the Ethics Committee of Non-Interventional Clinical Research, Istanbul Medipol University (Date: 2024-9-26, No: 924)

## Results

There were no significant differences ( $p>0.05$ ) in age, gender distribution, marital status, and educational status, social security, chronic disease rate, sleep patterns, rate of those with exercise/sports habits, and rate of falls in the last 6 months between the groups living in a nursing home, living with family members at home, and living alone. The rate of those who were married in the group living only with family members at home was significantly higher ( $p<0.05$ ) than in the groups living in a nursing home and living alone. The rate of smoking in the group living alone was significantly ( $p<0.05$ ) higher than in the groups living in a nursing home and living with family members at home. There was no significant difference ( $p>0.05$ ) in the rate of smoking between the groups living in a nursing home and those living with family at home.

There was no significant difference ( $p>0.05$ ) in the rate of those walking, watching TV, chatting, reading books, and praying in their free time among the groups living in a nursing home, living with family members at home, and living alone. The rate of those engaging in handicrafts, arts and music in their spare time in the group living in a nursing home was significantly ( $p<0.05$ ) higher than the groups living with family members at home and living alone. There was no significant ( $p>0.05$ ) difference in the rate of those engaging in handicrafts, arts and music

in their spare time between the groups living with family members at home and living alone (Table 1).

The GDS score, depression rate, dementia rate and impaired cognitive function rate were significantly ( $p<0.05$ ) higher in the groups living in a nursing home and those living alone than in the group living at home with family members. There was no significant difference ( $p>0.05$ ) between the groups living in a nursing home and living alone.

In the group living alone, the UCLA-LS score, feelings of loneliness, and CDT score were significantly ( $p<0.05$ ) higher than in the groups living in a nursing home and living at home with family members. In the group living in a nursing home, it was significantly ( $p<0.05$ ) higher than in the group living at home with family members.

The WHOQOL score and the MMSE score for the elderly were significantly higher ( $p<0.05$ ) in the group living at home with family members compared to the the groups living in a nursing home and

living alone. There was no significant difference ( $p>0.05$ ) between the groups living in a nursing home and those living alone (Table 2).

## Discussion

In the literature, depression rates, loneliness levels, cognitive status, and quality of life of elderly individuals have been evaluated and demographic variables that may affect these conditions have been examined. Since the groups in our study did not show significant differences in demographic characteristics, a comparison could not be made in this respect. The literature reports that 9.4% of the elderly have severe depression, and 21.3% have moderate depression [7]. In the vast majority of studies, it has been reported that living in a nursing home causes alienation from society and increases the symptoms of depression in the individuals. In one study, it was determined that the depression rate in among people living in nursing homes ranged

**Table 1.** Comparison of demographic characteristics of groups

				¹Living in a Nursing Home		²Living at Home with Family Members		³Living Alone		p
Age	Mean ± sdSD		70,6 ± 4,1		70,9 ± 5,5		73 ± 7,4		0,541 <sup>k</sup>	
	Median		69		69,5		71			
Gender	Female	n-%	19	47,50%	21	52,50%	22	55,00%	0,792 <sup>x2</sup>	
	Male	n-%	21	52,50%	19	47,50%	18	45,00%		
Marital status										
Married	n-%		0²	0,00%	30	75,00%	0²	0,00%	0 <sup>x2</sup>	
Single	n-%		5	12,50%	0	0,00%	5	12,50%		
Widow	n-%		30	75,00%	10	25,00%	31	77,50%		
Divorced	n-%		5	12,50%	0	0,00%	4	10,00%		
Educational Status										
Illiterate	n-%		15	37,50%	13	32,50%	12	30,00%	0,898 <sup>x2</sup>	
Primary School	n-%		12	30,00%	12	30,00%	14	35,00%		
Middle School	n-%		10	25,00%	14	35,00%	12	30,00%		
High School	n-%		3	7,50%	1	2,50%	2	5,00%		
Social Security	(+)	n-%	37	92,50%	38	95,00%	37	92,50%	0,875 <sup>x2</sup>	
	(-)	n-%	3	7,50%	2	5,00%	3	7,50%		
Chronic Disease	(+)	n-%	31	77,50%	28	70,00%	27	67,50%	0,587 <sup>x2</sup>	
	(-)	n-%	9	22,50%	12	30,00%	13	32,50%		
Smoking	(+)	n-%	10³	25,00%	9³	22,50%	23	57,50%	0,001 <sup>x2</sup>	
	(-)	n-%	30	75,00%	31	77,50%	17	42,50%		
Sleep Patterns	(+)	n-%	22	55,00%	23	57,50%	17	42,50%	0,355 <sup>x2</sup>	
	(-)	n-%	18	45,00%	17	42,50%	23	57,50%		
What are your free time activities?										
Walking	n-%		2	5,00%	6	15,00%	5	12,50%	0,326 <sup>x2</sup>	
Television	n-%		9	22,50%	9	22,50%	12	30,00%	0,67 <sup>x2</sup>	
Chatting	n-%		1	2,50%	5	12,50%	2	5,00%	0,175 <sup>x2</sup>	
Reading	n-%		0	0,00%	0	0,00%	2	5,00%	p>0.05 <sup>x2</sup>	
Crafts, Arts, Music	n-%		13	32,50%	4¹	10,00%	5¹	12,50%	0,017 <sup>x2</sup>	
Worship	n-%		15	37,50%	16	40,00%	14	35,00%	0,899 <sup>x2</sup>	
Do You Have an Exercise/Sports Habit?										
Regular	n-%		1	2,50%	6	15,00%	9	22,50%	0,061 <sup>x2</sup>	
Occasionally	n-%		25	62,50%	18	45,00%	15	37,50%		
Never	n-%		14	35,00%	16	40,00%	16	40,00%		
Falls in the Last 6 Months	(+)	n-%	9	22,50%	9	22,50%	2	5,00%	0,053 <sup>x2</sup>	
	(-)	n-%	31	77,50%	31	77,50%	38	95,00%		

<sup>k</sup> Kruskal-wallisWallis [Mann-whitneyWhitney u test] / <sup>X</sup> <sup>2</sup> Ki-square kare test, <sup>1</sup> Difference with Living in a Nursing Home  $p<0.05$ , <sup>2</sup> Difference with Living at Home with Family Members  $p<0.05$ , <sup>3</sup> Difference with Living Alone  $p<0.05$

**Table 2.** Comparison of scale scores of groups

		<sup>1</sup> Living in a Nursing Home		<sup>2</sup> Living at Home with Family Members		<sup>3</sup> Living Alone		p
Geriatric	Mean ± SD	14 ± 4,7		10 ± 4,5		14,7 ± 6		0 <sup>κ</sup>
Depression Scale	Median	14		9,0 <sup>13</sup>		14,5		
Geriatric Depression Scale								
No Depression	n-%	7	17,50%	27 <sup>13</sup>		10	25,00%	0 <sup>κ2</sup>
Possible Depression	n-%	7	17,50%	5	12,50%	6	15,00%	
Definite Depression	n-%	26	65,00%	8	20,00%	24	60,00%	
UCLA-LS	Mean ± sdSD	38,8 ± 11,4		21,9 ± 3,4		52,4 ± 12,7		0 <sup>κ</sup>
	Median	38,5 <sup>3</sup>		21,0 <sup>11</sup>		56		
UCLA-LS								
Normal	n-%	0	0,00%	5	12,50%	0	0,00%	0 <sup>κ2</sup>
Low Loneliness	n-%	13	32,50%	35	87,50%	5	12,50%	
Medium Loneliness	n-%	21	52,50%	0	0,00%	8	20,00%	
High Loneliness	n-%	6 <sup>3</sup>	15,00%	0 <sup>31</sup>	0,00%	27	67,50%	
WHOQOL	Mean ± sdSD	80,2 ± 18,8		97 ± 13,9		75 ± 20,3		0 <sup>κ</sup>
	Median	80,0 <sup>2</sup>		98,5		74,5 <sup>2</sup>		
MMSE	Mean ± sdSD	20,3 ± 5,8		23,3 ± 3,6		19,5 ± 5,7		0,005 <sup>κ</sup>
	Median	21,0 <sup>2</sup>		24		19,0 <sup>2</sup>		
Dementia								
Normal	n-%	16	40,00%	25	62,50%	11	27,50%	0,006 <sup>κ2</sup>
Mild Stage	n-%	11	27,50%	11	27,50%	13	32,50%	
Moderate Stage	n-%	9	22,50%	4	10,00%	12	30,00%	
Severe Stage	n-%	4	10,00%	0 <sup>13</sup>	0,00%	4	10,00%	
CDT	Mean ± sdSD	3,9 ± 1,5		4,6 ± 1,1		3,8 ± 1,6		0,031 <sup>κ</sup>
	Median	4,0 <sup>2</sup>		5		4,0 <sup>2</sup>		
Cognitive Function								
Impaired	n-%	14	35,00%	6 <sup>13</sup>	15,00%	18	45,00%	0,013 <sup>κ2</sup>
Not Impaired	n-%	26	65,00%	34	85,00%	22	55,00%	

<sup>\*</sup> Kruskal-wallisWallis (Mann-whitneyWhitney u test) /  $\chi^2$  Ki-squarekare test, <sup>1</sup> Difference with Living in a Nursing Home p<0.05, <sup>2</sup> Difference with Living at Home with Family Members p<0.05, <sup>3</sup> Difference with Living Alone p<0.05

from 25% to 50%, that the risk of psychiatric illness increased due to decreased social support and that this situation caused socioeconomic difficulties [8]. According to Zhao et al., 26% of elderly individuals living in nursing homes reported symptoms related to depression [9]. When Seddign et al. examined the depression levels of elderly individuals living in nursing homes and those living at home, they found that those living in nursing homes had the highest levels of depression [10]. Similarly, other studies report that depression rates are higher in elderly people living in nursing homes than those living in their own homes [11, 12]. It is believed that living in a nursing home has negative effects on the psychological well-being of an individual's due to the burden of living away from family and in an institutional environment.

Contrary to these studies, one study reported that elderly people living in nursing homes feel relatively less lonely. These findings are associated with the fact that elderly individuals from all walks of life, with different sociocultural levels, can come together, have a higher chance of forming friendships, and find someone to talk to about their troubles. In addition, it was thought that the ease of access to health services in the institution and the social activities that are carried out can also be effective in providing a source of income for elderly individuals. Since the age groups of the individuals in the institution are close, there is little risk of generation conflict. Individuals in the same age group show similar characteristics in terms of worldview and expectations from life. Because communication problems due

to generational conflict can be seen in elderly people living in large families with their children and grandchildren; this situation can cause them to feel excluded. Finally, while elderly individuals living at home have responsibilities related to daily lives (housework, paying bills, etc.), those living in a nursing home have more time for themselves because these responsibilities are managed by the staff. As a result of all these, it was emphasized in the study that individuals living alone experience a strong sense of loneliness very much because they are distant from both the social environment of the nursing home and family support [1]. The findings in our study align with the literature. The depression rate was found to be significantly higher in the groups living in a nursing homes and those living alone than in the group living at home with family members. In addition, the feeling of loneliness was found to be significantly higher in the group living alone than in the groups living in a nursing home and living at home with family members.

In a study examining the average loneliness and depression scores of elderly individuals, it was determined that the scores of elderly people living alone were the highest, followed by those living with their children at a moderate level, and the average scores of elderly people living with their spouses were the lowest. This situation showed that there was a statistically significant difference between the lifestyles of elderly individuals and the average loneliness and depression scores. These findings indicate that the feeling of loneliness was at the lowest level in elderly people living with their spouses and children, that is, their

families [13]. A study conducted in 2017 also indicated that the average loneliness scores were significantly higher for nursing home residents than for elderly people living with their families [14]. Similarly, our study found that, 87.5% of those living with their family members at home reported low levels of loneliness.

In cognitive comparisons, it was revealed that 38.7% of elderly individuals living in nursing homes had abnormal mini mental assessments. Studies conducted in Turkey show that the cognitive and mental status of elderly individuals living in nursing homes is worse than that of elderly individuals living in their own homes [15]. In addition, studies conducted in various countries show that the cognitive status of elderly individuals living in their own homes is better than that of those living in nursing homes [16]. In our study, the rates of dementia and impaired cognitive function in individuals living in nursing homes, the group with the highest rate of depression, were significantly higher than in other groups. In addition, the World Health Organization Quality of Life Scale score and the Standardized Mini Mental Test score were significantly higher in the group living with family members at home than in the groups living in nursing homes and living alone ( $p < 0.05$ ), while there was no significant difference between the groups living in nursing homes and living alone.

### Conclusion

The results of our study showed that depression and loneliness levels are higher among elderly individuals living alone or in nursing homes compared to those living with their families at home, while their quality of life and cognitive levels are lower. Therefore, attention should be given to the needs of the elderly and general education should be provided to encourage the tradition of family care for elderly individuals.

### Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

### Animal and Human Rights Statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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### Conflict of Interest

The authors declare that there is no conflict of interest.

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