



Original Research / Orijinal Araştırma

## The Follow-up of the Anxiety Levels of the Elderly During the 'COVID-19' Pandemic: A Prospective Primary Care Study

### Yaşlıların 'COVID-19' Pandemisi Dönemindeki Anksiyete Düzeylerinin Takibi: Prospektif Birinci Basamak Çalışması

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#### Abstract

**Aim:** The COVID-19 outbreak became the first pandemic caused by coronaviruses. As the epidemic spread rate gradually increased in Turkey, curfews were imposed on individuals aged 65 and over. We thought that both the pandemic and the curfew caused anxiety in the elderly. This study investigated the follow-up of the anxiety levels in the elderly during the pandemic and the factors affecting their anxiety.

**Method:** The anxiety status of the individuals aged 65 years and older who were registered to the family health center was evaluated at the beginning of the pandemic, after 15 days and 6 months during the pandemic by using the Geriatric Anxiety Scale via phone call after informed consent had been obtained.

**Results:** The mean score of the first Geriatric Anxiety Scale was  $1.0 \pm 2.4$ , the second score applied on the 15th day was  $0.5 \pm 2.1$ , and the third score applied in the sixth month was  $0.3 \pm 1.8$ . There was a significant difference between the three measurements ( $p= 0.002$ ).

**Conclusions:** Total anxiety scores of our sample were low and a significant difference was detected among the three measurements. Gender, education level, living alone, and house type were found to be the factors influencing anxiety.

**Keywords:** SARS-CoV-2, Pandemics, Test Anxiety Questionnaire, Geriatric Assessment, Primary Health Care

#### Özet

**Amaç:** Dünyada pandemiye sebep olan COVID-19 virüsü 2020 yılı başlarında ülkemizde görülmeye başlanmış, zamanla vaka sayılarında artış yaşanmıştır. Virüs yayılımının hızlandığı dönemde 65 yaş ve üstü popülasyonda dışarı çıkma yasağı uygulanmıştır. Bu çalışmada hem pandeminin hem de dışarı çıkma yasağının yaşlılarda oluşturmuş olabileceği anksiyete durumu, anksiyete seviyesinin zaman içindeki değişimi ve anksiyeteyi etkileyen faktörler incelenmiştir.

**Yöntem:** Bir aile sağlığı merkezine kayıtlı olan 65 yaş üstü hastalar pandemi başında, 15 gün sonra ve 6 ay sonra, kayıtlı oldukları aile hekimleri tarafından aranarak onamları alınan kişilere Geriatrik Anksiyete Skalası uygulanmıştır.

**Bulgular:** İlk yapılan Geriatrik Anksiyete Skalası skoru  $1.0 \pm 2.4$ , ikinci sonuç  $0.5 \pm 2.1$ , üçüncü sonuç ise  $0.3 \pm 1.8$  idi. Ölçümler arasında anlamlı değişiklik saptandı ( $p= 0.002$ ).

**Sonuç:** Örneklemimizin total anksiyete skoru düşüktü ve aralıklı yapılan ölçümler arasında anlamlı değişiklik saptandı. Cinsiyet, eğitim durumu, yalnız yaşama, yaşanan ev tipi anksiyeteyi etkileyen faktörler olarak saptandı.

**Anahtar sözcükler:** SARS-CoV-2, Pandemi, Test Anksiyete Anketi, Geriatrik Değerlendirme, Birinci Basamak Sağlık Bakımı,

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## Introduction

Coronaviruses cause respiratory infections ranging from common cold to pneumonia in humans. Especially since 2000, coronaviruses began to manifest themselves with more severe flu-like respiratory tract infections rather than the common cold.<sup>1</sup> A pandemic is an epidemic of an infectious disease that has spread across a large region, for instance, multiple continents or worldwide, affecting a substantial number of people.<sup>2</sup> The COVID-19 (Coronavirus disease- 2019) outbreak caused by the SARS-CoV-2 virus, which occurred in Wuhan, Hubei province of China on December 31, 2019, quickly spread to hundreds of countries and became the first pandemic caused by coronaviruses.<sup>1,2</sup> COVID-19 is primarily transmitted from symptomatic people to others who are in close contact through respiratory droplets, by direct contact with infected persons, or by contact with contaminated objects and surfaces.<sup>2</sup> Asymptomatic cases play a role in the spread of the disease, while most of the time it is transmitted through sick people.<sup>3</sup> Especially in the elderly and individuals with chronic diseases, the disease is more severe and causes deaths.<sup>2,3</sup> The best way to avoid COVID-19 is social distancing and washing hands frequently. In Turkey, social distancing was initially implemented voluntarily. After a rapid increase in cases, the Turkish government has taken strict measures to stop the spread of the virus. Besides the hygiene and social isolation rules, the government brought some limitations on work, schools, universities, public events, social gatherings, restaurants, hotels, and public parks. However, as the epidemic spread rate gradually increased, curfews were imposed on individuals aged 65 and over as of March 21, 2020.<sup>4</sup>

Above 65 years of age is often used for geriatric people known as a fragile group of population. What is meant by fragility is the state of being easily affected physically and mentally.<sup>5</sup> During the pandemic, a high level of anxiety was detected in the geriatric population.<sup>6</sup> Nationwide lockdowns can produce acute panic, anxiety, obsessive behaviors, hoarding, paranoia, depression, and post-traumatic stress disorder (PTSD) in the long run. Fake information from the media can also lead to uncertainty and increased anxiety.<sup>6,7</sup> The anxiety levels of this age group and the factors affecting this issue have been wondered due to reasons such as showing the elderly as the group at risk in the pandemic and including these people more in the bans. While this is the case, it has been predicted that a curfew applied only to the elderly may cause some changes in the mood of these old people.

To investigate this situation, we planned to detect the change in anxiety levels over time during the COVID-19 pandemic of individuals aged 65 and over enrolled in a family health center unit. Additionally, we aimed to monitor the changes in their anxiety levels in the period.

## Materials and Methods Participants and study design

This study is a prospective cross-sectional survey study. The research was carried out at Ankara Bala Family Health Center (FHC) between July 2020 and February 2021. There are 250 people aged 65 and over who are registered in the FHC. People aged 65 and over were contacted by telephone. If they agreed to participate in the study after being informed about the research, a questionnaire was applied to the patients a total of 3 times (T<sub>0</sub>, 15th day, and 6th month). The first questionnaire consisted of 43 questions, 15 questions were research-specific data collection tools, and 28 questions were Geriatric Anxiety Scale (GAS). The same patients were called on the 15th day and a GAS scale was reapplied. The patients were called again 6 months later, and a 12-question questionnaire and GAS scale were applied to question the situations that have changed since the previous search (Figure 1).

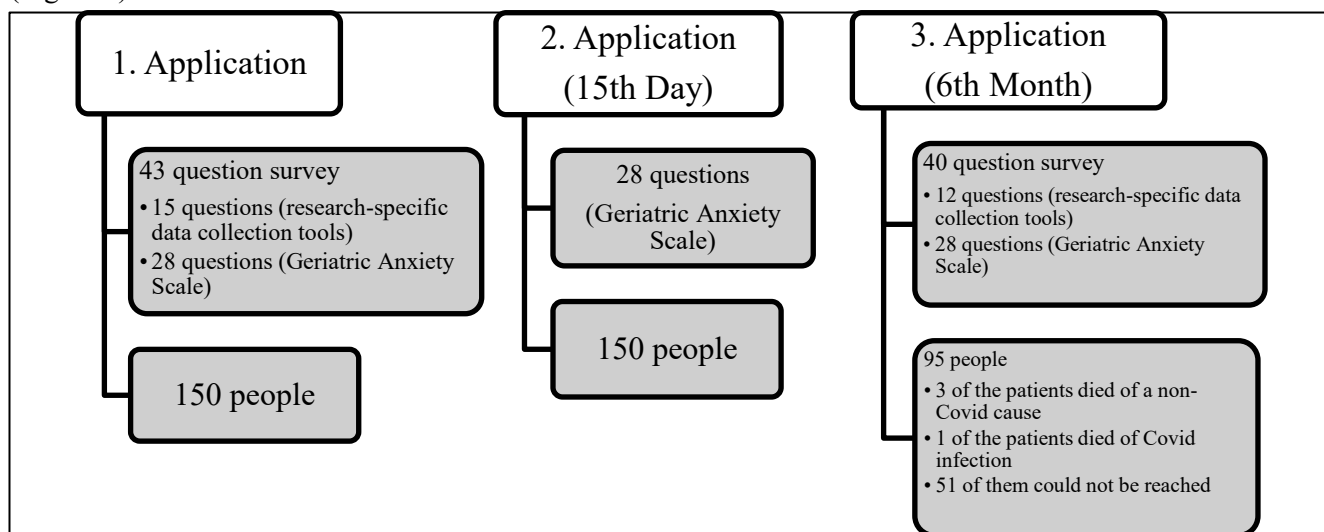


Figure 1. Flow chart

Inclusion criteria for this research were being aged 65 and over, being enrolled at Bala FHC, and having cognitive and auditory competencies that can hear, understand, and answer questions. Exclusion criteria from the research were not accepting to participate in the research, being under the age of 65, and having hearing, speaking, and cognitive disability.

In the study, it was planned to reach all patients without selecting a sample. For the first and the second phases, the universe (N=250) was phoned and 213 people were reached, 150 of these individuals met the inclusion criteria and volunteered to participate. In the 6th month, 150 elderly subjects were called again, and 51 could not be reached, 3 of the patients died due to non-COVID-causes and 1 due to COVID-19 infection. GAS was applied to 95 patients. Patients were reached by researcher Odabas O.K. who is their family physician. The survey was applied to everyone by the same person.

### **Instruments**

The data collection tool used in T0 consisted of 15 questions and included the following questions; age, sex, education level, household members, chronic diseases, whether they use their medicines regularly during the pandemic process, the source of information about the epidemic, frequency of talking about the pandemic in the home, compliance with the curfew, history of COVID-19 in their family or themselves, history of losing any of their relatives due to COVID-19, the situation of admitting to the hospital during pandemic (if yes, the reason for hospital admission), type of house (flat/detached house), and whether there is any occupation at home

The data collection tool used in 6<sup>th</sup> month consisted of 12 questions and included the following questions (in the past six months); level of compliance with social measures, COVID-19 infection status, severity level if suffered from the disease, history of COVID-19 disease in their family, history of losing any of their relatives due to COVID-19, smoking status before the pandemic and now, being aware of about COVID-19 vaccines, where they get information about COVID-19 vaccines, whether they trust COVID-19 vaccines, whether they are thinking of getting COVID-19 vaccine, whether they had the flu and pneumonia vaccines.

In addition to these questions, the Geriatric Anxiety Scale's Turkish version(28 questions) was applied.

### **Geriatric Anxiety Scale**

The Turkish validity and reliability study of the Geriatric Anxiety Scale, which was developed in 2010 by Segal et al.<sup>8</sup> in English, was conducted by Karahan et al<sup>9</sup> in 2018. The Turkish form of the scale consists of 28 items. The participants are asked how often they experienced each symptom during the past week. The first 23 items are scorable. Each symptom is rated on a 4-point scale ranging from 0 (not at all) to 3 (all the time). There is no reverse scoring. Higher scores correspond to higher levels of anxiety. Items between 24-28 are used by clinicians to determine the area of anxiety. These items are not included in the total score of this scale and subscales. Scoring provides a total score and subscale scores (somatic, cognitive, and affective). The total score is the sum of items between 1 and 23. The total score ranges from 0 to

75. Subscales include somatic subscale (7 items), sum of items 1, 6, 7, 15, 19, 20, 21; cognitive subscale (8 items), sum of items 2, 3, 10, 14, 16, 17, 22, 23; and affective subscale (8 items), sum of items 4, 5, 8, 9, 11, 12, 13, 18. The internal consistency of the Turkish scale was measured with Cronbach  $\alpha$  and its value was determined as 0.91.

### **Statistical Analysis**

SPSS (Statistical Package for Social Sciences) for Windows version 25 package program was used for statistical analysis. Shapiro-Wilk test was used to determine if the data had a normal distribution. Frequencies for categorical variables and measures of central tendency (mean  $\pm$  standard deviation) for continuous variables were calculated. The chi-square test was used to analyze the categorical data. For data with non-normal distribution, the Mann-Whitney U test was used to compare two independent groups. Repeated measures ANOVA test was used to compare repetitive measurements (first, second, and third measurement of GAS, and subscale scores). Post-hoc multiple

comparisons were performed by the Bonferroni test for unequal samples. A p-value of less than 0.05 was considered for statistical significance, with a 95% confidence interval.

### **Results**

Hundred and fifty people met the inclusion criteria and volunteered to participate in the study. The mean age of the participants was 73.3 years (SD= 0.5; range 65-93), 62.0% (n = 93) were female and 38.0% (n = 57) were male. Most of the participants (60.0%; n = 90) were illiterate, and 18.0% (n = 27) of them lived alone at home. The proportion of people who live in the same house with their spouse was 70.0% (n = 105). 90.0% (n = 135) of the participants had at least one chronic disease. Information about the demographic variables of the participants is shown in Table 1.

**Table 1.** *The demographic variables of the participants*

	Total	Woman	Man	p
Age (Mean ± SD)	73.3±0.5	72.4±5.5	74.9±6.7	0.017
Education level (n, %)				
Illiterate	90, 60%	86, 95.6%	4, 4.4%	<0.001
Primary school	53, 35.3%	6, 11.3%	47, 88.7%	
Secondary school	6, 4.0%	1, 16.7%	5, 83.3%	
High school	1, 0.7%	0, 0%	1, 100%	
Relatives who lived with at home (n, %)**				
Alone	27, 18.0%	24, 88.3%	3, 11.1%	0.001
Spouse	105, 70.0%	53, 50.5%	52, 49.5%	<0.001
Children	38, 25.3%	25, 65.8%	13, 34.2%	0.361
Grandchildren	20, 13.3%	10, 50.0%	10, 50.0%	0.173
Chronic diseases (n, %)				
Hypertension	102, 68.0%	71, 69.6%	31, 30.4%	0.005
Diabetes mellitus	36, 24.0%	24, 66.7%	12, 33.3%	0.324
Chronic lung disease	23, 15.3%	16, 69.6%	7, 30.4%	0.285
Chronic artery disease	29, 19.3%	14, 48.3%	15, 51.7%	0.135
Cancer	5, 3.3%	2, 40.0%	3, 60.0%	0.281
Other*	45, 30.0%	31, 68.9%	14, 31.1%	0.170
Using their medicines regularly during the pandemic process (n, %)				
Yes	122, 89.1%	76, 62.3%	46, 37.7%	0.593
Sometimes	7, 5.1%	4, 50.0%	4, 50.0%	
No	8, 5.8%	4, 57.1%	3, 42.9%	

\* Cerebrovascular disease, hypothyroidism, hyperlipidemia, osteoporosis, chronic kidney failure, benign prostatic hyperplasia, glaucoma, vertigo, rheumatic diseases

\*\*This question has multi sectional answers. Some participants had chosen more than one option.

When the sources of information about the COVID-19 pandemic are questioned, the answers given are TV/radio (n = 132, 88.0%), family (n = 34, 22.7%), friend (n = 33, 22.0%), health workers (n = 3, 2.0%), and the internet (n = 1, 0.7%). Participants' frequency of talking about the pandemic at their homes: 0.7% (n = 1) rarely, 30.6% (n = 46) sometimes, 42.0% (n = 63) frequently, 26.7% (n = 40) very often. 85.3% (n = 128) of them said that they obeyed the curfew, 10.0% (n = 15) sometimes obeyed, and 4.7% (n = 7) did not. Only 1 (0.7%) of the individuals had relatives who had COVID-19 in their family, and no one lost their relatives due to COVID-19 infection. During the pandemic period, 13.3% (n = 20) applied to the hospital for various reasons. Reasons for applying to the hospital; 20.0% (n = 4) for COVID-19 suspicion, 35.0% (n = 7) for medication or non-urgent reasons, 15.0% (n = 3) falls, and 30.0% (n = 6) for other emergency reasons. The difficulties and occupational situations experienced by the participants during the curfew due to the pandemic are shown in Table 2.

**Table 2.** *The difficulties and occupational situations experienced by the participants during the curfew due to the pandemic*

	Percent (%)	Number (n)
Having an extra occupation at home		
Have	34.7	52
Do not have	65.3	98
Their occupation		
Garden work	57.3	86
Housework	42.7	64
Types of houses		
Flat	16.0	24
Detached House	84.0	126
Being affected by the curfew		
Pleased	73.3	110
Do not affected	18.0	27
Bored	8.7	13
The most difficult thing in this process		
Do not feel difficulty	63.3	95
Staying at home	22.0	33
Not meeting with relatives	17.3	26
Not being able to go to the health institution	6.7	10
Not reaching basic needs	2.7	4
Financial difficulty	5.3	8

Of the 95 people who could be reached in the 6th month, 82.1% (n = 78) stated that they fully complied with social precautions within this period. 83.2% (n = 79) of them said that they did not have any COVID-19 infection during this period. Of the 16 patients with infection, 50.0% (n = 8) were mild, 25.0% (n = 4) were hospitalized, 12.5% (n = 2) were asymptomatic, 6.3% (n = 1) had severe symptoms at home, and 6.3% (n = 1) stated that he survived with intensive care treatment. 20.0% (n = 19) had a close relative in their family who had a COVID-19 infection. 1.1% (n = 1) had lost his/her close relative due to COVID-19. Of the 15 individuals who stated that they smoked before the pandemic, 26.7% (n = 4) quit, 26.7% (n = 4) decreased, 26.7% (n = 4) continued in the same way, 20.0% (n = 3) 'increased the amount of consumption. 24.2% (n = 23) of them stated that they had information about COVID-19 vaccines, 71.6% (n = 68) of them said they had partial knowledge. Information resources were TV/media (80.0%; n = 76), family (34.7%; n = 33), and healthcare workers (1.1%; n = 1). 80.0% (n = 76) of the participants stated that they trust COVID-19 vaccines. 86.3% (n = 82) said that they wanted to be vaccinated. 50.5% (n = 48) of the participants had pneumococcus and 34.7% (n = 33) had the fluvaccine.

While the mean score of the first Geriatric Anxiety Scale was  $1.0 \pm 2.4$ , the mean score after 15 days was  $0.5 \pm 2.1$ . The mean GAS scale score applied in the sixth month was  $0.3 \pm 1.8$ . The change in Geriatric Anxiety Scale scores over time is shown in Table 3.

**Table 3.** *Change of geriatric anxiety scale mean of the participants over time*

	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	p	F
GAS	1.0±2.3	0.5±2.2	0.3±1.8	<b>0.016<sup>a</sup></b>	4.198
Somatic	0.3±1.1	0.2±1.0	0.1±0.6	0.115	2.188
Cognitive	0.5±1.1	0.1±0.7	0.1±0.8	<b>0.001<sup>a,b</sup></b>	7.729
Affective	0.1±0.6	0.1±0.7	0.1±0.4	0.528	0.640

GAS, Geriatric anxiety scale; Somatic, Somatic subscale score of GAS; Cognitive, Cognitive subscale score of GAS; Affective, Affective subscale score of GAS T<sub>0</sub>, first; T<sub>1</sub>, 15th day; T<sub>2</sub>, 6th month

Tamhane post-hoc analyzes; a difference between T<sub>0</sub> and T<sub>2</sub>, b difference between T<sub>0</sub> and T<sub>1</sub>

The differences between the measurement times and the various factors affecting the Geriatric Anxiety Scale have been shown in Table 4.

**Table 4.** The differences between the measurement times and the various factors affecting the Geriatric Anxiety Scale

	GAS			p	Somatic			p	Cognitive			p	Affective			p
	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>		T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>		T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>		T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	
<b>Sex</b>																
Woman	1.2±2.4	0.3±1.3	0.1±0.3	<b>0.024<sup>a</sup></b>	0.5±1.5	0.2±0.9	0±0	<b>0.033<sup>a</sup></b>	0.7±1.2	0.1±0.6	0.1±0.3	0.058	0.1±0.3	0±0	0±0.1	0.330
Man	0.7±2.1	0.7±3.0	0.7±2.6		0.1±0.5	0.2±1.2	0.2±1.0		0.4±1.0	0.2±0.8	0.3±1.2		0.2±0.8	0.3±1.1	0.1±0.6	
<b>Education level</b>																
Illiterate	1.4±2.5	0.6±2.8	0.1±0.3	<b>0.047<sup>a</sup></b>	0.5±1.5	0.4±1.4	0±0	<b>0.042<sup>b</sup></b>	0.7±1.2	0.2±0.8	0.1±0.3	0.140	0.1±0.6	0.1±0.8	0.0±0.2	<b>0.045<sup>b</sup></b>
Primary school	0.6±2.0	0.2±1.1	0.6±2.3		0.1±0.5	0.1±0.3	0.1±0.4		0.3±0.9	0.1±0.4	0.2±1.1		0.1±0.7	0.1±0.3	0.2±0.7	
Elementary school	0.8±1.3	1.3±2.4	0.7±4.0		0.1±0.4	0.2±0.4	1.0±2.4		0.7±1.2	0.5±0.8	0.7±1.6		0±0	0.7±1.6	0±0	
<b>Living alone</b>																
Yes	2.4±3.7	0.6±2.1	0.4±0.9	<b>0.018<sup>a</sup></b>	1.1±2.2	0.2±0.8	0±0	<b>0.006<sup>a</sup></b>	1.2±1.7	0.4±1.3	0.1±0.3	<b>0.020<sup>a</sup></b>	0.1±0.2	0±0	0.1±0.3	0.383
No	0.7±1.9	0.5±2.3	0.4±1.9		0.2±0.8	0.2±1.1	0.1±0.7		0.4±0.9	0.1±0.6	0.1±0.9		0.1±0.6	0.1±0.8	0.1±0.4	
<b>Having an occupation at home</b>																
Have	0.9±2.2	0.3±1.2	0.1±0.5	0.517	0.2±0.6	0.3±1.5	0.3±1.2	0.133	0.7±1.3	0.3±0.9	0.4±1.4	0.198	0.3±1.0	0.5±1.3	0.2±0.7	0.191
Do not have	1.2±2.5	1.1±3.6	0.9±3.1		0.4±1.3	0.2±0.8	0±0		0.5±1.0	0.1±0.6	0.1±0.2		0.1±0.2	0±0	0±0.1	
<b>Doing gardening</b>																
Yes	1.1±2.3	0.3±1.3	0.1±0.6	0.222	0.5±1.4	0.2±0.8	0±0	0.064	0.5±1.1	0.1±0.6	0.1±0.3	0.512	0.1±0.3	0±0	0±0.1	0.291
No	0.9±2.2	0.9±3.2	0.7±2.7		0.2±0.5	0.3±1.3	0.2±1.0		0.5±1.1	0.2±0.8	0.3±1.2		0.2±0.9	0.3±1.1	0.1±0.6	
<b>Doing housework</b>																
Yes	1.5±3.0	0.6±1.8	0.1±0.5	0.102	0.8±1.9	0.4±1.2	0±0	<b>0.026<sup>a,b</sup></b>	0.6±1.3	0.2±0.9	0±0.1	0.288	0.1±0.4	0±0	0±0.1	0.455
No	0.8±1.9	0.5±2.4	0.5±2.1		0.2±0.6	0.2±1.0	0.1±0.8		0.5±1.0	0.1±0.6	0.2±1.0		0.1±0.7	0.2±0.9	0±0.5	
<b>Types of houses</b>																
Flat	0.5±0.8	0.7±1.8	0.9±3.0	<b>0.022<sup>a,b</sup></b>	0.1±0.3	0.1±0.3	0.5±1.8	0.090	0.4±0.6	0.3±0.6	0.4±1.2	0.810	0±0	0.4±1.2	0±0	0.107
Detached House	1.1±2.4	0.5±2.3	0.3±1.6		0.4±1.2	0.2±1.1	0±0.3		0.5±1.2	0.1±0.7	0.1±0.8		0.2±0.6	0.1±0.6	0.1±0.4	
<b>History of passing COVID-19 infection</b>																
Yes	1.4±3.1	0.4±1.7	0.8±3.5	0.514	0.2±0.7	0.1±0.5	0.2±0.7	0.624	1.0±1.7	0.2±0.7	0.4±1.7	0.266	0.3±0.1	0.1±0.5	0.2±1.0	0.387
No	1.0±2.1	0.5±2.3	0.3±1.2		0.4±1.2	0.2±1.1	0.1±0.6		0.4±0.9	0.2±0.7	0.1±0.5		0.1±0.5	0.1±0.8	0±0.1	
<b>History of passing COVID-19 infection in their relative family</b>																
Yes	1.0±2.7	0.4±1.6	1.0±3.2	0.240	0.2±0.7	0.2±0.5	0.2±0.6	0.701	0.5±1.3	0.2±0.6	0.5±1.6	0.256	0.3±0.9	0.1±0.4	0.3±0.9	0.117
No	1.0±2.2	0.5±2.4	0.2±1.2		0.4±1.2	0.2±1.1	0.1±0.6		0.5±1.1	0.2±0.7	0.1±0.5		0.1±0.5	0.1±0.8	0.1±0.1	

Note.

GAS, Geriatric anxiety scale total score; Somatic, Somatic subscale score of GAS; Cognitive, Cognitive subscale score of GAS; Affective, Affective subscale score of GAS; T<sub>0</sub>, first; T<sub>1</sub>, 15th day; T<sub>2</sub>, 6th month

Tamhane post-hoc analyzes; a difference between T<sub>0</sub> and T<sub>1</sub>, b difference between T<sub>0</sub> and T<sub>2</sub>

## Discussion

Prolonged social isolation of the elderly during the COVID-19 pandemic may cause medium and long-term secondary damages and this condition must be considered in the risk assessment. This study identifies the difficulties, occupational situations, and changing anxiety status of the elderly during the COVID-19 curfew. According to our study, although the vast majority (85.3%) of older people stated that they complied with the curfew, their anxiety levels were low and anxiety levels decreased significantly after the 15th day and sixth months. It is well known that social isolation among the elderly puts them at greater risk of depression and anxiety.<sup>10</sup> Meng et al. represented in their study that 37.1% of the seniors during COVID-19 experienced depression and anxiety.<sup>11</sup> Qiu et al. have recently shown the emotional reaction of the aged (over 60 years old) is more obvious.<sup>12</sup> In our study, we evaluated older people's anxiety status at an interval of 15 days and six months during the COVID-19 pandemic. Incompatible with our hypothesis, the total anxiety scores of our sample were low. Also, there was a significant difference between the three measurements, anxiety level was found to decrease at 15th days and sixth months. Maggi et al. performed a follow-up study during and after quarantine and measured anxiety levels at the 15-day interval and there was no significant difference in mental health scores between the two measurements.<sup>13</sup> When the subscales of the scale were compared, there was no significant difference in the affective subscale between the three measurements; there was a significant difference in somatic and cognitive subscale and there was a decrease. As the time passed in the curfew period of the pandemic, it was thought that the elderly may have reduced their anxiety for many reasons. More studies show that elderly people have lower anxiety levels than youngsters during the pandemic.<sup>14-17</sup> Having a relative with these diseases in their environment or having had this disease may have increased the perception towards this disease and also affect anxiety levels.<sup>18</sup> In our study, the number of people whose relatives had COVID-19 infection was very few and no one had COVID-19 or lost one of her/his relatives due to COVID-19 at the first and second calls. However, in our study, no significant difference was found between exposure to COVID-19 and anxiety.

We determined anxiety levels by using the Geriatric Anxiety Scale and evaluated the home business, struggles in this process, type of home, being affected by the curfew, and the most difficult things for older people in this process. Also, these factors were related to social activities, and in the literature, it was documented that the association of higher prevalence of anxiety and depression in the elderly was associated with limited social activity.<sup>19</sup> Sirin et al. presented a study measuring anxiety by using the Geriatric Anxiety Scale during the pandemic curfew period in Turkey and they also found female gender, economic loss, uncertainty, and the time participants spent following news about the COVID-19 pandemic were the risk factors of anxiety. Higher education levels, hobbies, and regular physical activity were protective factors against anxiety.<sup>20</sup> Another study conducted on geriatric anxiety during the same period in Turkey by Yildirim et al. used the Trait Anxiety Inventory and Geriatric Depression Scale and had similar results.<sup>21</sup> In Ireland, Hyland et al. used GAD-7 and PHQ-9 scales to determine the anxiety levels of the elderly and they found anxiety was associated with younger age, female sex, loss of income due to COVID-19, experiencing COVID-19 infection, and higher perceived risk of COVID-19 infection.<sup>22</sup> In London, Robb et al. used the Hospital Anxiety Depression Scale (HADS) for the same population at the same period to determine anxiety and found a strong negative association between anxiety and loneliness.<sup>23</sup> Studies from different countries using different scales for the elderly found that anxiety has a positive correlation with economic loss and loneliness.<sup>14,24,25</sup>

One of the reasons for the overall low level of anxiety in our study was that a major part of our participants was living in houses with gardens. Isolation was imported as one of the anxiety triggers of older people.<sup>10</sup> In an individual who lives in a garden house, the effects of isolation may be less visible due to reasons such as gardening or coming together with nature. In our opinion, one of the most important factors of these low anxiety scores in our study is related to the fact that the elderly are less exposed to the negative effects of the pandemic due to the characteristics of the place where they live. In our study, nearly three-quarters of participants were happy to have a curfew because of thinking of the benefits to their health, two-thirds of participants stated that they had no difficulty in this process.

Older people may face unprecedented difficulties while seeking help from healthcare facilities.<sup>26</sup> In our study, 13.3% of the elderly applied to the hospital for any reason during the pandemic process. 20.0% of the hospital admissions were made due to the suspicion of COVID-19. According to our study, gender, education level, living alone, and house type were found to be related to changes in anxiety scores. In women, T0 anxiety scores were higher than those of men, however, the anxiety scores were seen to be decreased in women in the latter scores. By our study, Meng et al. and Alsharji KE found women experiencing more anxiety and depression than men during the COVID-19 pandemic.<sup>11,20-22,27,28</sup> Also, gender differences in anxiety were examined in many studies, and there was a preponderance of females among current and recovered anxiety disorder cases.<sup>29,30</sup> In our study, anxiety scores were found to be higher in those who lived alone at the first follow-up, in other follow-ups, the scores decreased. At the beginning of the pandemic, it was thought that explanations about an unknown disease from



various sources and the infodemic may have increased the level of anxiety in individuals who lived alone because they could not find support as presented in the literature.<sup>20,21</sup> Our population had higher anxiety levels at the beginning of the pandemic. In the follow-ups, it was observed that the level of anxiety of those living in village houses decreased and those living in apartments increased. The fact that there are social areas such as gardens in village houses in general and the fact that such facilities are fewer in apartments and this situation has become more important due to the curfews in the pandemic may have affected the results of the study.

Some limitations should be considered when interpreting the results. First, these findings were based on self-reported data, which implies the possibility of self-report bias. Second, using phone calls for data collection could limit respondents' ability to express themselves due to time constraints or lack of a physical questionnaire. Third, the sample was selected from the same region, so there was not a variety of people, and we don't have a comparison with people living in the city center. Fourth, because of the number and the selection criteria of the sample, these results cannot be generalized to all older people.

The strengths of the study include the specific sample (older people), the prospective design with validated scales for anxiety, and the same researcher applying the questionnaires during follow-ups. Despite the challenges of doing research in rural areas like less communication skills of people or less willingness to participate in studies they don't understand, this research was conducted successfully. It is seen that the number of studies conducted in rural areas is low, and it is aimed to support academic studies in this field.

### **Conclusions**

In our study, we evaluated the anxiety status of the elderly with an interval of 15 days and six months during the COVID-19 pandemic. Incompatible with our hypothesis, the total anxiety scores of our sample were low. There was a significant difference between the three measurements, anxiety was seen to decrease at the 15th day and the sixth month. When the subscales of the scale were compared, there was no significant difference in the affective subscale between the three measurements, there was a significant decrease in somatic and cognitive subscales. As the time passed in the curfew period of the pandemic, it was thought that the elderly may have reduced their anxiety for many reasons. Gender, education level, living alone, and house type were found to be related to the changes in anxiety scores. In our opinion, one of the most important factors of these low anxiety scores in our study is related to the fact that the elderly living in rural areas are less exposed to the negative effects of the pandemic due to the characteristics of the place where they live.

### **Ethical Considerations**

Permission was obtained to use the scale in the study from Karahan, the author of the Turkish validity study of this scale. Before the research, ethics committee approval was obtained from the COVID-19 Scientific Research Evaluation Commission, which is affiliated with the Ministry of Health of the Republic of Turkey. Ethics committee approval was obtained from the Ankara City Hospital Non-interventional Clinical Research Ethics Committee (Approval date-number: May 28,2020-E1/692/2020).

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### **Conflict of Interest**

The authors report no conflict of interest.

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