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Research Article

Investigation of Perceived Loneliness and Death Anxiety Levels in COVID-19 Patients

COVID-19 Hastalarında Algılanan Yalnızlık ve Ölüm Kaygısı Düzeylerinin İncelenmesi

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Abstract

Aim: The study was conducted to investigation of perceived loneliness and death anxiety levels in COVID-19 patients.
Material and Methods: This cross-sectional and correlational study was carried out in Siirt Education and Research Hospital, located in southeastern Turkey, between January and April 2021. The population of the study consisted of patients who were diagnosed with COVID-19 over the age of 18. The sample of the study consisted of 152 patients who agreed to participate in the study at the time of the study without any sampling selection. The data were collected using an patient information form, the UCLA-Loneliness Scale and the Death Anxiety Scale and evaluated using descriptive statistics, independent samples t test, Mann Whitney-U test, ANOVA, Kruskal-Wallis test, Dunn-Bonferroni post hoc test, and Pearson correlation analysis.
Results: The loneliness and death anxiety mean scores of the patients were 44.26 10.12 and 8.65 3.23, respectively. There was a highly significant positive correlation between their loneliness and death anxiety mean scores ($p<0.05$).
Conclusion: In the study, it was determined that the patients experienced moderate levels of loneliness and death anxiety. It was determined that perceived loneliness increased the fear of death.

Keywords: COVID-19, death anxiety, loneliness

Öz

Amaç: Bu çalışma, COVID-19 tanılı hastalarda algılanan yalnızlık ve ölüm kaygısı düzeylerinin incelenmesi amacıyla yapılmıştır.
Gereç ve Yöntem: Kesitsel ve korelasyonel nitelikte yapılan bu çalışma, Ocak-Nisan 2021 tarihleri arasında Türkiye'nin güneydoğusunda yer alan Siirt Eğitim ve Araştırma Hastanesi'nde gerçekleştirilmiştir. Çalışmanın evrenini, 18 yaş üzeri COVID-19 tanısı konulan hastalar oluşturdu. Çalışmanın örneklemi ise, herhangi örnekleme seçimi yapılmadan çalışmanın yapıldığı tarihlerde çalışmaya katılmayı kabul eden 152 hasta oluşturdu. Veriler, hasta bilgi formu, UCLA-Yalnızlık Ölçeği ve Ölüm Kaygısı Ölçeği kullanılarak toplanmış ve tanımlayıcı istatistikler, bağımsız örneklemler t testi, Mann Whitney-U testi, ANOVA, Kruskal-Wallis testi, Dunn-Bonferroni post hoc testi ve Pearson korelasyon analizi kullanılarak değerlendirildi.
Bulgular: Hastaların yalnızlık ve ölüm kaygısı puan ortalamaları sırasıyla 44.26 10.12 ve 8.65 3.23'tür. Yalnızlık ve ölüm kaygısı puan ortalamaları arasında anlamlı pozitif ilişki olduğu saptanmıştır ($p<0.05$).
Sonuç: Çalışmada, hastaların orta düzeyde yalnızlık ve ölüm kaygısı yaşadığı saptandı. Algılanan yalnızlığın ölüm korkusunu artırdığı belirlendi.

Anahtar Kelimeler: COVID-19, ölüm anksiyetesi, yalnızlık

INTRODUCTION

The corona virus (COVID-19) epidemic, which emerged at the beginning of 2020 and took the whole world under its influence in a short time, caused great concern and fear, while causing millions of people to be infected and many people to die (1,2). This unexpectedly wide spread of the disease and the increased number of COVID-19 patients and deaths cause psychological problems, such as anxiety, loneliness, depression, death anxiety and stress, in patients diagnosed with COVID-19 (1,2).

Unprecedented "social isolation" strategies have been implemented all over the world due to the increased

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number of COVID-19 cases and deaths (3,4). Like many countries such as America, Italy and China (5–7) Turkey has also adopted the quarantine strategy as a containment strategy, and leaving home is only permitted in cases of necessity (8,9). Individuals in social isolation are deprived of most of their usual routine life activities, such as visiting family and friends or attending social gatherings (3,8). As an expected result of social isolation restrictions, people have been forced to be left alone, both to protect vulnerable people and to prevent people diagnosed with COVID-19 from spreading the infection. This extraordinary situation, besides its benefits to public health, caused individuals to be alone (10,11).

Studies have shown that loneliness and social isolation have not equal impacts, but both can have a detrimental effect on health in common and different ways (3,12). Studies have also emphasized that decreased social relations and interactions during the pandemic negatively affects lives, causing them to feel lonely (11,13). Loneliness is an uncomfortable emotional situation where social relations are less than desired or limited, resulting from deprivation and inadequacy. Perceived loneliness has increased among people during the COVID-19 pandemic, worsening their mental health (2,14). A prolonged loneliness has a negative effect on health and well-being (15–17). One study reported that 36% of patients felt alone during the COVID-19 pandemic (18). Death anxiety increases in individuals diagnosed with COVID-19 due to the feeling of loneliness brought by social isolation and the number of symptoms caused by the disease (19,20).

Death anxiety refers to being aware of death attitudes such as negative emotional reactions, fear, grief, restlessness and bereavement (4,20,21). As COVID-19 is an infectious disease, social isolation measures to prevent the infection cause COVID-19 patients to have psychological problems such as death anxiety (2,4,14). Studies of the COVID-19 pandemic have stated that the pandemic took away the feelings of self-control, which is one of the most basic characteristics of individuals, and increased both loneliness and death anxiety by dragging them into uncertainty (12,15). In one study conducted with 175 people to determine their anxiety levels during the pandemic, 85% of the participants had death anxiety (19). Therefore, there is an urgent need to understand the possible psychosocial impact of the COVID-19 pandemic and to identify factors that may reduce its effects on people's psychological health (16,20). Therefore, it is important to determine the levels of loneliness and death anxiety in patients diagnosed with COVID-19 and to take the necessary measures to alleviate the negative mental health consequences in this difficult pandemic process. In this regard, this study was conducted to examine of perceived loneliness and death anxiety levels in COVID-19 patients.

Research questions

What is the level of loneliness in patients diagnosed with COVID-19?

What is the level of death anxiety in patients diagnosed with COVID-19?

Is there a relationship between loneliness and death anxiety in patients diagnosed with COVID-19?

MATERIAL AND METHOD

Study Type

This is a cross-sectional and correlational study.

Study Period and Place

The study was carried out in Siirt Education and Research Hospital, located in southeastern Turkey, between January and April 2021.

Study Population and Sample

The population of the study consists of patients who test positive with COVID-19. The patients who met the inclusion criteria and agreed to participate in the study were recruited. The sample size of the study was calculated using the G-Power 3.1 program. As a result of the power analysis; The sample was found to be sufficient with an effect size of 0.259, a power of 95%, and a margin of error of 0.05. In accordance with the isolation policy in effect in our country at the time the study was conducted, the study was carried out online in order to prevent contamination. The patients who applied to the COVID-19 outpatient clinic for the test were informed about the study face to face and their informed consent was obtained. Contact information of patients who accepted to participate in the study were obtained. Then, the questionnaires were sent online to the patients who tested positive. An online data collection form was prepared using the Google Forms program, and online questionnaires were sent individually via WhatsApp to the patients diagnosed with COVID-19 and kept in isolation for 14 days. Between the study dates, 152 patients who accepted to study and diagnosed with COVID-19 were reached.

Study inclusion criteria

- Being over 18 years old
- Patients who test positive for COVID-19
- Being in a 14-day isolation period
- Having social media accounts to reply to the online form.

Study exclusion criteria

- Being illiterate
- Giving no consent to participate in the study

Data Collection Tools

The data were collected using an online survey form, including an introductory information form, the UCLA-Loneliness Scale and the Death Anxiety Scale and consisting of a total of 44 questions and lasted around 10-

15 minutes.

Introductory Information Form: The form was prepared by the researchers in line with the literature (10,19) and consists of questions about the participants' descriptive features.

Death Anxiety Scale (DAS): The scale was developed by Templer (1970) (22) and adapted into Turkish by Akça and Köse (2008) (23). It consists of 15 items with a yes-no format, where 6 items are scored in reverse. The highest possible score from the scale is 15. The higher the score obtained from the scale, the higher the death anxiety level. A higher scale score refers to greater death anxiety, where 0-4= "low" death anxiety, 5-9="moderate" death anxiety, 10-14="severe" death anxiety, 15="panic level" of death anxiety. The test-retest reliability and reliability coefficient of the scale were 0.79 and 0.75, respectively (23). In this study, the Cronbach's alpha coefficient was found to be 0.74 for the scale.

University California of Los Angeles - Loneliness Scale (UCLA): The scale was developed by Russell et al. (1978) (24), revised by Russell et al (25) and finalized by Russell (1996) (26). It was adapted into Turkish by Demir (1989) (27). In the final version of the scale, half of the items were arranged as positive and the other half as negative. A total of 10 items are scored in reverse. This is a 4-point Likert type, consisting of 20 items to reflect how lonely people describe their lives. The lowest and highest scale scores are 20 and 80, respectively, where 50-64=high loneliness, 35-49 moderate loneliness, and 20-34=low loneliness (27). The Cronbach's alpha internal consistency coefficient of the scale was 0.94 (27). In this study, the Cronbach's Alpha coefficient was found to be 0.84 for the scale.

Ethical Considerations

This study was conducted in accordance with the Helsinki Principles and approved by the Ethics Committee of Siirt University Non-Interventional Clinical Research Ethics Committee (Application date: 31.12.2020 and Approval number:14177). The necessary permissions to conduct the study were obtained from the Ministry of Health and the hospital where the study was conducted. An informed consent was obtained online from all patients included in the study by sending the form containing necessary information about the purpose and method of the study.

Data Evaluation

The data were analyzed using the Statistical Package for Social Science (SPSS 25.0). The Shapiro Wilk test and Q-Q charts were used to test the normality of the data. Parametric tests were used in the normal distribution of the data, and non-parametric tests were used if they were not normally distributed. For those who did not meet the frequency, percentage, mean standard deviation or normality assumption, the ranked scores value was used in descriptive statistics. The data were evaluated using descriptive statistics, independent samples t test, Mann Whitney-U test, Kruskal-Wallis test, One-Way Variance Analysis (ANOVA) and Pearson analysis. Dunn-Bonferroni post hoc test was used among the variables found to be significant as a result of Kruskal-Wallis analysis. A p value less than 0.05 was considered statistically significant.

RESULTS

The mean age of the patients was 26.15±8.67 years. Of them, 67.8% were female, 77.0% were single, 38.8% had bachelor's degree, 20.4 % were workers, 68.4% lived with their parents, 86.2% did not have a chronic disease, 63.8% knew people died from COVID-19 in the immediate vicinity, and 87.5% were not hospitalized due to COVID-19 (Table 1).

Table 1. Characteristic data of the patients

Descriptive Characteristics	n	%
Gender		
Female	103	67.8
Male	49	32.2
Marital Status		
Single	117	77.0
Married	35	23.0
Education		
Primary school	17	11.2
High school	35	23.0
Associate degree	33	21.7
Bachelor's degree	59	38.8
Master's Degree	8	5.3
Occupation		
Unemployed	20	13.2
Worker	31	20.4
Health employee	15	9.9
Officer	20	13.2
Teacher	13	8.6
Housewife	10	6.6
Self-employment	27	17.8
Others	16	10.5
Cohabitants		
Spouse and children	25	16.4
Spouse	10	6.6
Parents	104	68.4
Roommate	8	5.3
Alone	5	3.3
Chronic disease		
Yes	21	13.8
No	131	86.2
Knowing people who died from COVID-19		
Yes	97	63.8
No	55	36.2
Hospitalization due to COVID-19		
Yes	19	12.5
No	133	87.5
Mean Age	$\bar{X}$ **±SD 26.15± 8.67**	

SD: Standard deviation; $\bar{X}$= Mean

The UCLA-LS and DAS scale mean scores of the patients were 44.26±10.12 and 8.65±3.25, respectively (Table 2).

Distribution of patients according to UCLA-LS and DAS levels 53.3% had moderate loneliness and 47.4% had moderate death anxiety (Table 3).

A statistically significant difference was found between the patients' UCLA-LS mean scores according to cohabitants (p=0.04), chronic disease status, death from COVID-19 in their environment, and hospitalization due to COVID-19 (p=0.00). A statistically significant difference was also found between their DAS mean scores according to chronic disease status, death from COVID-19 in their environment, and hospitalization due to COVID-19 (p=0.00). The Dunn-Bonferroni multiple comparison test, which was made to determine which group the difference originated from, suggested a significant difference between those living with their roommates and those living with their parents, where those living with their parents had a higher mean score (p=0.04) (Table 4).

Table 2. Patients' UCLA-LS and DAS Scale Score Levels (n=152)

Scales	Number of Items	Min. - Max. Score	(X) ±SD
UCLA-LS	20	23- 75	44.26±10.12
DAS	15	1- 15	8.65±3.25

SD: Standard deviation; (X)=Mean; Min: Minimum; Max: Maximum; UCLA: University California of Los Angeles- Loneliness Scale; DAS: Death Anxiety Scale

Table 3. Distribution of Patients by UCLA-LS and DAS Levels (n=152)

Scale Score Levels		n	%
UCLA-LS	Low Loneliness (20-34)	27	17.8
	Moderate Loneliness (35-49)	81	53.3
	High Loneliness (50-64)	44	28.9
DAS	Low Death Anxiety (0-4)	17	11.2
	Moderate Death Anxiety (5-9)	72	47.4
	Severe Death Anxiety (10-14)	61	40.1
	Panic Level Death Anxiety (15)	2	1.3

UCLA:University California of Los Angeles- Loneliness Scale; DAS: Death Anxiety Scale

Table 4. Comparison of Patients' UCLA-LS and DAS Scores by Descriptive Characteristics (n=152)

Descriptive Characteristics	UCLA-LS (X+SD) (Mean rank)a	Test and Significance	DAS (X+SD) (Mean rank)a	Test and Significance
Gender				
Female	44.79±10.34	t= 0.92	8.90±3.28	t=1.35
Male	43.16±9.67	p=0.35	8.14±3.14	p=0.17
Marital Status				
Single	45.03±9.66	t=1.71	8.75±3.22	t= 0.65
Married	41.71±11.31	p=0.08	8.34±3.36	p=0.51
Education				
Primary school	44.82±8.95(81.35)x	Z=0.51 p=0.77	9.76±3.15(90.53)x	Z=2.90 p=0.23
High school	47.00±10.99(86.97)x		9.51±3.13(87.50)x	
Associate degree	45.03±7.21(81.12)x		8.45±2.55(73.35)x	
Bachelor's degree	43.54±10.82(72.69)x		8.30±3.56(72.64)x	
Master's Degree	33.37±7.28(29.44)x		6.00±2.50(40.00)x	
Occupation				
Unemployed	45.35±9.84(82.05)x	Z=15.56 p=0.06	8.50±3.76(75.03)x	Z=8.08 p=0.32
Worker	44.41±8.66(75.94)x		8.77±2.85(76.95)x	
Health employee	39.06±8.07(53.17)x		7.20±3.14(57.53)x	
Officer	40.90±6.78(61.58)x		7.70±2.61(63.25)x	
Teacher	42.84±14.85(66.23)x		8.63±4.53(77.12)x	
Housewife	44.60±7.45(81.15)x		10.00±3.36(94.35)x	
Self-employment	46.37±12.92(86.41)x		9.29±2.70(84.48)x	
Others	49.12±10.12(99.91)x		9.37±3.57(86.69)x	
Cohabitants				
Spouse and childrena	41.12±11.49(60.90)x	Z=9.88 p=0.04 d-c*	8.08±3.21(68.36)x	Z=2.78 p=0.59
Spouse b	43.20±11.30(73.00)x		9.00±3.80(79.85)x	
Parentsc	45.59±9.77(82.51)x		8.89±3.19(79.54)x	
Roommated	37.12±6.72(44.00)x		7.12±3.52(58.44)x	
Alonee	46.00±6.04(87.40)x		8.40±3.43(76.10)x	
Chronic disease				
Yes	59.33±7.05	t=9.12	12.23±1.70	U=342.50
No	41.85±8.30	p=0.00	8.08±3.07	p=0.00
Knowing people who died from COVID-19				
Yes	48.29±9.13	t=7.65	9.49±3.17	t=4.47
No	37.16±7.62	p=0.00	7.18±2.84	p=0.00
Hospitalization due to COVID-19				
Yes	58.73±8.12	t=7.89	12.15±1.92	U=358.00
No	42.20±8.59	p=0.00	8.15±3.09	p=0.00

t: Independent samples to test; xMean rank; U: Mann Whitney-U test; Z: Kruskal Wallis Test; UCLA:University California of Los Angeles- Loneliness Scale; DAS: Death Anxiety Scale; p□0.05 is considered statistically significant.;* Dunn-Bonferroni test

In addition, a strong positive correlation was found between the patients' UCLA-LS and DAS mean scores (r:0.763, p=0.00) (Table 5).

Table 5. The Relationship Between Patients' UCLA-LS and DAS Mean Scores

	DAS
UCLA-LS	r= 0.763 p=0.00

Correlation coefficient; Statistical significance was identified if the P-value was lower than 0.001 (p<0.001). UCLA: University California of Los Angeles- Loneliness Scale; DAS: Death Anxiety Scale

DISCUSSION

It is important to protect and maintain mental and physical health during the pandemic. In early 2020, a number of public health measures, from physical distancing to stay-at-home orders, were introduced to prevent further spread of COVID-19 across the world (11,15) Patients diagnosed with COVID-19 and exposed to social isolation may have physical symptoms and psychological problems such as loneliness, fear, death anxiety, and inability to control their own life (15,28).

This study determined that the patients had moderate loneliness (Table 2). Studies conducted in the early days of the COVID-19 pandemic determined that more than one-third of the participants felt lonely (1,16,18). One study found that perceived loneliness increased significantly after an average isolation period of approximately 37 days (8). Different studies have reported that the sense of loneliness increases during the pandemic (2,3,10,28). Studies have also emphasized that negative feelings such as loneliness are an increasingly important factor in the COVID-19 pandemic and stated that loneliness experienced during the pandemic is the main risk factor for some mental conditions such as anxiety and stress (4,12,15,17). In studies similar to our study, it has been observed that patients experience loneliness due to various social isolation measures taken during the pandemic, inability of individuals to meet their daily needs, being separated from their loved ones, and restrictions brought by the disease.

In our study, it was found that the level of loneliness perceived by the patients was significant according to whom they lived with, and in the post-hoc analysis performed to determine which group the difference originated from, there was a significant difference between roommates and those living with their parents, and those living with their parents had a higher mean score. In a study comparing the levels of loneliness, it was stated that the highest feeling of loneliness was in those living alone at home (42.5%), then in a nursing home (23%) and at home with their family (25.5%) (29). Since the mean age of our study was young (26.15± 8.67), the fact that they chatted more with their friends rather than their families might have decreased their perceived loneliness level (Table 4).

Our study determined that the patients with chronic disease had higher loneliness mean score than those without chronic disease (Table 4). Luchetti et al. (2020) observed that the level of loneliness of individuals with chronic diseases in the high-risk group increased during the COVID-19 pandemic (11). Studies of patients infected with COVID-19 have reported that more than 32% of them had a chronic disease (30–32). Studies have also determined that COVID-19 patients with chronic diseases have more severe symptoms during the disease (33). In the studies conducted, it has been determined that those with chronic diseases are more affected by the pandemic process and more disease symptoms are observed in those who have had COVID-19 disease. According to these results, it can be said that it is an expected result that people with chronic diseases have a high loneliness score.

As those with chronic diseases constitute a high-risk group for COVID-19, their perceived loneliness increases because of isolation measures. This study determined that the patients who knew a person died from COVID-19 in their immediate surroundings had higher loneliness mean score than those who did not (Table 4). One study conducted during the pandemic found that knowing people in the family or close circle who died because of the COVID-19 disease increased one's sense of loneliness (13). If patients diagnosed with COVID-19 know dead people in the family or close circle due to the pandemic, this causes them to worry more and their loneliness increases. This result may also be because of their inability to access social support resources due to isolation measures during the disease. In addition, our study determined that the patients who were hospitalized due to COVID-19 had higher loneliness mean score than those who were not hospitalized (Table 4). One qualitative study conducted with individuals who were diagnosed with COVID-19 and stayed in the hospital room alone has determined that their inability to touch and get close to anyone and their inability to recognize healthcare professionals due to the use of protective equipment increased their sense of loneliness (34). This may be because patients who are isolated in line with contact-prevention measures and have limited immobility, are emotionally separated from their loved ones due to visitor restriction (35), therefore they focus on their feeling of loneliness, triggering intense anxiety.

Our study determined that the patients had moderate death anxiety (Table 3). Enea et al. (2021) showed that death obsession increased after an average isolation period of approximately 37 days (8). Another study has reported that 85% of individuals have death anxiety.(19) One qualitative study conducted with 8 COVID-19 patients found that fear of death was among the psychological consequences of this disease (36). The COVID-19 pandemic, which distances social life from its usual boundaries through social isolation measures, increases death anxiety (21). At the time of data collection, mortality rates due to COVID-19 in the world are increasing day by day, and this situation causes death anxiety in COVID-19

patients. In addition, although people's attitudes towards the COVID-19 infection are different, factors such as the publication of death rates every day in the media, around the world and throughout the country, the lack of a complete treatment method for the disease, social isolation measures, and getting away from the routine of life increase death anxiety.

The present study determined that the patients with chronic disease had higher death anxiety mean score than those without chronic disease (Table 4). At the time study data was collected, no effective drug has been developed in the treatment of COVID-19-associated viral pneumonia. The presence of chronic diseases significantly affects the course of the disease in patients infected with COVID-19, increasing the need for intensive care and raising mortality (37). Individuals with chronic diseases constitute a risky group for COVID-19 and publication of the daily number of COVID-19 deaths through social media increases the death anxiety of these individuals. In addition, our study found that the patients who knew a person died from COVID-19 in the close vicinity had higher death anxiety mean score than those who did not (Table 3). One study conducted with healthcare professionals found that 66.3% of them were more concerned about the death of their family members or individuals in their social circles, increasing their death anxiety (19). Another study reported that 42% of those tested positive for COVID-19 first thought about their family and close circles and worried about them, while 17% remembered death (38). Studies of the pandemic found that the fear of COVID-19 and death obsession increased in individuals who thought the deaths of themselves and those around them due to the disease (8,20). In addition to the process of obscurity and uncertainty, it can be said that the death rates are published in the world and in our country every day and witnessing the death of their own relative due to the COVID-19 disease increases the death anxiety in patients diagnosed with COVID-19.

The present study found that the patients who were hospitalized due to COVID-19 had higher death anxiety mean score than those who were not (Table 4). In many studies, it has been determined that hospitalized patients with the diagnosis of COVID-19 during the epidemic experienced psychological problems (34,39). The inability to see one's children and families during the social isolation process, the uncertainty about the end of the disease, the lack of a definitive treatment for the disease, increased number of intubated patients and deaths, disease-related comments on social media, and being exposed to false information about COVID-19 may have led to death anxiety in patients hospitalized with COVID-19. In addition, visitor restrictions, necessity of seeing patients from afar, lack of adequate support for patients, and stigmatization may also increase death anxiety in patients hospitalized with COVID-19.

Our study determined that death anxiety increased as perceived loneliness increased in COVID-19 patients (Table 5). Keskin et al. have found that those who live alone have higher death anxiety (40). In other studies has reported that social isolation of individuals during the pandemic increases their perceived loneliness, whereby they have more death anxiety (8,14). Individuals with COVID-19 feel loneliness more intensely as they focus on their own emotions and feel lonely because of the physical and social isolation measures during the disease, and it can be said that this increases their death anxiety.

CONCLUSION

This study determined that the patients had moderate loneliness and death anxiety and that the perceived loneliness increased the death anxiety. Beyond being a physical disease, the COVID-19 is a pandemic with significant social, psychological and economic effects. Therefore, the psychological aspect of the COVID-19 pandemic, which affects people in all aspects, should be paid sufficient attention. Developing and implementing psychological support programs to cope with stress and strengthen social support resources can alleviate the negative consequences of loneliness and death anxiety in patients with COVID-19.

Limitations

The results of this study cannot be generalized to all patients, as this study consisted of patients who wanted to test for COVID-19 in a single hospital, was conducted online, and consisted of young COVID-19 patients using more social media.

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Conflict of Interest: *The authors declare that they have no competing interest.*

Ethical approval: *This study was conducted in accordance with the Helsinki Principles and approved by the Ethics Committee of Siirt University Non-Interventional Clinical Research Ethics Committee (Application date: 31.12.2020 and Approval number:14177).*

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