Evaluation of Coronavirus Phobia and Depression in Patients With Cardiovascular Disease

Kardiyovasküler Hastalığa Sahip Bireylerde Koronavirüs Fobisi ve Depresyonun Değerlendirilmesi

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Özet

Amaç: COVID-19 pandemisinin genel popülasyondaki psikolojik etkilerini inceleyen çok sayıda çalışma olmasına rağmen kardiyovasküler hastalığa sahip bireyler üzerindeki etkilerinin araştırıldığı çalışma sayısı kısıtlıdır. Bu çalışma mevcut pandemi sürecinde kardiyovasküler hastalığı olan bireylerde korona-virüs fobisi ve depresif belirtiler ile bunlarla ilişkili olabilecek faktörleri tespit etmeyi amaçlamıştır.

Gereç ve Yöntemler: Kesitsel nitelikteki bu çalışmaya, Kasım-Aralık 2020 tarihleri arasında kardiyovasküler bir hastalık nedeniyle kardiyoloji polikli-niğine başvuran hastalar ile herhangi bir kardiyovasküler hastalığı olmayan bireyler dâhil edildi. Katılımcılar sosyodemografik değişkenler, Hasta sağlığı anketi-9 (PHQ-9) ve COVID-19 Fobi Ölçeği (C19P-S)'ye ait sorulardan oluşan bir anketi yanıtladı.

Bulgular: Çalışmaya kardiyovasküler hastalığı olan 213 ve olmayan 159 hasta olmak üzere toplam 372 kişi katıldı. Hasta grubunun C19P-S total ve PHQ-9 total puanları, kontrol grubundan yüksekti. Hastalar en çok aileden birinin korona virüse yakalanma olasılığından korktuğunu ifade etti. Kadın cinsiyette PHQ-9 total, psikiyatrik hastalık öyküsü olanlarda C19P-S ve PHQ-9 total puanlarını yüksekti. Evli hastaların psikolojik, somatik, sosyal alt ölçek puanları ile C19P-S ve PHQ-9 total puanları bekârlardan düşüktü. Eğitim düzeyi yüksekliği C19P-S total, psikolojik ve sosyal alt puanlarını arttırdı. Sigara içenlerin psikolojik ve somatik alt ölçek puanları yüksekken, PHQ-9 total puanları düşüktü. COVID-19 enfeksiyonu nedeniyle yoğun bakım ünitesinde tedavi görmüş olmak, ekonomik alt ölçek ve C19P-S toplam puanlarını azalttı. Korelasyon analizi C19P-S alt ölçek ve toplam puanları ile PHQ-9 toplam puanları arasında ilişki olduğunu gösterdi.

Sonuç: COVID-19 pandemisi kardiyovasküler hastalığa sahip bireyleri psikolojik olarak etkilemiştir. Oluşan bu etkinin değerlendirilmesi kardiyovasküler hastalığa sahip bireylerin prognozuna ve mortalitesine katkı sağlayacak önlemlerin alınmasında yol gösterici olabilir.

Anahtar kelimeler: COVID-19, Depresyon, Fobi, Kardiyovasküler hastalık, Pandemi

Abstract

Objective: Although there are numerous studies examining the psychological effects of COVID-19 pandemic on the general population, the number of studies on individuals with cardiovascular disease is limited. This study aimed to determine coronavirus phobia and depressive symptoms and their possible associated factors in cardiovascular disease patients during the current pandemic period.

Material and Methods: In this cross-sectional study, patients applied to the cardiology outpatient clinic due to a cardiovascular disease between November-December, 2020, and individuals without any cardiovascular diseases were included. Participants answered a questionnaire consisting of sociodemographic variables, Patient Health Questionnaire-9 (PHQ-9) and COVID-19 Phobia Scale (C19P-S).

Results: A total of 372 people, 213 with cardiovascular disease and 159 without, participated in the study. The C19P-S and PHQ-9 total scores of the patient group were higher than the control group. Patients reported that they most afraid of someone in the family might infected with the coronavirus. PHQ-9 total scores of females, C19P-S and PHQ-9 total scores of those with a history of psychiatric illness were high. Psychological, somatic, social subscale scores, C19P-S and PHQ-9 total scores of married patients were lower than singles. High leveled-education increased C19P-S total, psychological and social sub-scores. While the psychological and somatic subscale scores of the smokers were high, their PHQ-9 total scores were low. Being treated in the intensive care unit for COVID-19 infection decreased the economic subscale and C19P-S total scores. Correlation analysis showed a relationship between the C19P-S subscale, total scores and PHQ-9 total scores.

Conclusion: The COVID-19 pandemic has psychologically affected cardiovascular patients. Evaluation of this effect may guide the taking of measures that will contribute to the prognosis and mortality of patients with cardiovascular disease.

Keywords: Cardiovascular disease, COVID-19, depression, Pandemic, Phobia

INTRODUCTION

Declared as a cause of pandemic by the World Health Organization (WHO) shortly after being identified in China in December 2019, COVID -19 continues to spread across continents and affect a high number of people. Today, 218,946,836 people have been infected worldwide and 4,539,723 people have died due to COVID-19 infection (as of 3 September 2021) (1).

COVID-19 causes more medical complications in individuals with chronic illnesses. It has been reported that there is a linear relationship between cardiovascular diseases (CVD), diabetes, chronic lung disease, and diseases requiring immunosuppression therapy, and the severity and mortality of COVID-19 infection (2-4). The results of a study conducted in the USA showed that the riskiest groups among these diseases are CVD, chronic lung diseases, and diabetes (5).

In addition to being shown as a high-risk group in terms of mortality, the unpreventable rate of spread of COVID-19, the lack of a cure, the unscientific news in the media that some drugs cause death, difficulties in benefiting from health services, social isolation, and loneliness, has caused individuals with chronic diseases to be psychologically affected by the pandemic (6). In their recently published study Al Rahimi et al. showed that patients who received immunosuppressive therapy experienced serious fear and anxiety (7). Similarly, in a study conducted in Greece indicated that patients with chronic diseases had higher symptoms of anxiety and somatization (8).

Studies have proven that these psychopathological reactions play a role in the intensification of the underlying physical disease as well as the development of permanent psychiatric diseases over time. For example, a study conducted during the SARS epidemic reported that psychopathological symptoms led to instability of myocardial electricity and secretion of extra catechol amines, which had negative consequences in individuals with CVD (9). Similarly, depression may pose a risk for CVD by increasing sympathetic tonus, decreasing heart rate variability, or triggering mechanisms that activate blood coagulation factors (10).

Despite advances in diagnosis and treatment, CVD are still the leading cause of death worldwide, and psychological stressors have an almost certain impact on prognosis and mortality (11). Therefore, awareness of the fear and depression caused by the pandemic, especially in these patients, is essential for the development of appropriate infection prevention strategies, effective mental health and medical interventions.

In this study, it was aimed to determine the fear and depression levels caused by the pandemic in patients with CVD and the demographic characteristics that may be associated with them. As far as we know, there is no research in our country showing the mental effects of COVID-19 on individuals with CVD.

MATERIALS AND METHODS

This cross-sectional study was first approved by the Inonu University Faculty of Medicine Ethics Committee (2020/1248). The study included literate individuals with cardiovascular disease, aged 18-65, who applied to the Turgut Ozal Medical Center Cardiology outpatient clinic between November-December 2020, and the general population, who were matched with the case group in terms of age and gender, without any cardiovascular disease.

A questionnaire was administered to the participants, questioning their age, gender, education level, marital status, number of children, occupation, history of comorbid psychiatric and chronic diseases (diabetes mellitus, chronic respiratory diseases, rheumatic diseases, malignancy, etc.), their adherence to treatment during the pandemic and their continuation of medical controls, and their treatment/intensive care history due to COVID-19 and the COVID-19 Phobia Scale (C19P-S) was used to measure their COVID-19-related phobias and the Patient Health Questionnaire-9 (PHQ-9) to measure their depression levels. The participants who agreed to participate in the study were divided into 4 groups by the cardiologist, based on their basic diseases, as hypertension (HT), heart failure (HF), coronary artery disease (CAD), and structural heart disease (SHD). Those younger than 18 years of age, and the ones with psychiatric and neurological diseases that would cause severe cognitive impairment, and mental retardation were not included in the study.

COVID-19 Phobia Scale

The COVID-19 Phobia Scale (C19P-S) is a self-report scale developed by Arpaci et al. to measure the phobia levels for coronavirus (12). In the Likert-type scale consisting of 20 items each item is scored between "strongly disagree (1 point)" and "strongly agree (5 points)".1st, 5th, 9th, 13th, 17th and 20th items measure the psychological subscale; Items 2. 6. 10. 14. and 18. somatic subscale; 3. 7. 11. 15. and 19. items social subscale; Items 4, 8, 12 and 16 measure the economic subscale. The scores obtained from the scale can vary between 20 and 100. High scores indicate high phobia (mean=65.42, SD=14.09). In the development study of the scale, Cronbach's α coefficient was 0.925 for the all items, 0.876 for the psychological subscale, 0.899 for the psychosomatic subscale, 0.903 for the economic subscale, and 0.851 for the social subscale (12). In this study, Cronbach's α for the overall scale was 0.894.

Patient Health Questionnaire-9

Patient Health Questionnaire-9 (PHQ-9) is a self-report scale used to screen depression in patients applying to health services. The scale was first used by Spitzer et al. (13) and its Turkish validity and reliability study was performed by Sarı et al. (14). In the survey consisting of 9 questions, each question is scored from 0 (not at all) to 3 (almost every day). According to the scoring system of the original questionnaire,

scores of 1-4 were rated as minimal, 5-9 mild, 10-14 moderate, 15-19 moderately severe, and 20-27 severe depression. In the Turkish adaptation study, the Cronbach's α internal consistency coefficient of the scale was found to be 0.842 (14). Similarly, the Cronbach α coefficient of 9 items was found to be 0.842 in this study.

Statistical Analyses

Statistical analyzes were performed on IBM SPSS version 25 (IBM, Inc., Armonk, NY, USA). The conformity of quantitative variables to normal distribution was checked with Kolmogorov Smirnov and Shapiro Wilk tests. Quantitative variables that provided the assumption of normal distribution were summarized as mean and standard deviation, and quantitative variables that did not show normal distribution were summarized as median and min-max. Mann Whitney U test and Kruskal Wallis test were used for the variables that did not show normal distribution in the statistical analysis, and the Conover test was used for pairwise comparisons. For the variables with normal distribution, analyzes were performed with t-test in independent groups. Qualitative variables were summarized with number percent and Yates corrected Chi-Square, Pearson Chi-Square and Fisher's Exact tests were used. Statistical significance level was accepted as p<0.05.

RESULTS

1. Demographic data of the participants

A total of 372 people took part in the study, of which 213 were in the case group and 159 in the control group. While the mean age of the case group was 49.7±9.3, it was 48.43±8.45 in the control group (p=0.15). There was no significant difference between the groups in terms of age, gender, education level and marital status (p>0.05). In the case group, the number of patients with HT was 102, the number of patients with CAD was 99, the number of patients with HF was 55, and the number of patients with SHD was 29. While 8.5% of the patients have a psychiatric disorder, this rate was 8.8% in the control group. Five people (2.3%) in the case group and 5 (3.1%) people in the control group were hospitalized and treated for coronavirus disease (p>0.05).

One hundred forty nine of the patients (70%) were not able to go to their routine medical controls during the pan-

Table 1. Descriptive statistics of sociodemographic data						
Variable		**Groups**				**p**
		Patient group		**Control Group**		
Age (Mean±SD)		49.7±9.3		48.43±8.45		0.15*
		n	%	n	%	
Gender	Female	86	40.4	68	42.8	0.71**
	Male	127	59.6	91	57.2	
Marital status	Married	170	79.8	126	79.2	0.95**
	Widowed/single	43	20.2	33	20.8	
Education level	Literate/primary school	101	47.4	60	37.7	0.14**
	High school	75	35.2	69	43.4	
	University	37	17.4	30	18.9	
Smoking	No	134	62.9	99	62.3	0.83**
	Yes	79	37.1	60	37.7	
Do you have any known psychiatric illness?	No	195	91.5	145	91.2	1*
	Yes	18	8.5	14	8.8	
Do you have any known chronic diseases?	No	139	65.3	80	50.3	**0.002***
	Yes	74	34.7	79	49.7	
Have you been hospitalized for coronavirus disease?	No	208	97.7	154	96.9	0.63*
	Yes	5	2.3	5	3.1	
Have you been hospitalized in intensive care for coronavirus disease?	No	210	98.6	159	100	0.26*
	Yes	3	1.4	0	0	
Were you able to come to your controls regularly during the pandemic period?	No	149	70	50	63.3	0.35*
	Yes	64	30	29	36.7	
Have you used your medicines regularly during the pandemic period?	No	84	39.4	28	35.4	0.64*
	Yes	129	60.6	51	64.6	

*Pearson Chi-square test.
** Independent Samples t test

demic period. The patients stated that the most common reason why they could not go to their controls regularly was the concern of being infected with COVID-19 (57%). This was followed by difficulties in getting an appointment (20.1%), having other reasons (22.8%), respectively. While 26.2% of the patients stated that they had difficulty in obtaining their medicines, and 16.7% stated that they did not take their medicines because they were afraid that the medicines would reduce immunity against COVID-19 infection. The remaining patients stated that they were well (32.1%) and did not take it because they did not care (25%). The demographic characteristics of the participants are shown in **Table 1**.

2. Comparison of the scale scores of the case and control groups

There was a statistically significant difference between the patient and control groups in terms of C19P-S total and PHQ-9 total scores, and both C19P-S total and PHQ-9 total scores in the patient group were significantly higher than the control group (p=0.0001, p=0.022, respectively) **(Table 2)**.

In the analysis made among the patient groups; while PHQ-9 total scores of patients with HT were higher than those without HT (p=0.014), C19P-S scores of patients with HF were higher than those without HF (p=0.028) **(Table 3)**.

3. Distribution of patients'responses to C19P-S questions

In the analysis made as "I strongly agree" and "strongly disagree" with the answers given by the patients to the C19P-S scale questions; The first 5 rows in which patients experienced the most distress were as follows: "I am extremely afraid of the possibility of someone in my family become infected by the coronavirus" (27.2%), "The fear of coming down with coronavirus makes me very anxious" (17.4%), " News about coronavirus-related deaths causes me great anxiety" (13.1%), " I am aware that I spend too much time cleaning my hands due to the corona virus " (12.2%), "I run away from people who sneeze on suspicion of coronavirus" (12.2%).

Distribution of the first 5 questions they answered as strongly disagree was "I experience serious stomachaches out of the fear of coronavirus" (42.7%)", "I experience tremors in my hands and feet due to the fear of coronavirus" (41.8%), "I experience serious chest pain out of the fear of coronavirus" (41.3%), "I stock up on food for fear of coronavirus" (38%) and, "I'm worried about running out of cleaning supplies due to the corona virus" (37.1%).

Table 2. Comparison of the scale scores of the patient and control groups							
Variable		**Groups**					**p**
		Patient group Median (Min-Max)	**n**	**%**	**Control Group Median (Min-Max)**	**n**	**%**	
C19P-S Total		52 (24-96)	-	-	47(20-85)	-	-	0.0001*
PHQ-9 Total		5 (0-27)	-	-	4 (0-19)	-	-	0.022*
PHQ-9 category	Low	-	176	82.6	-	135	84.9	0.65**
	Medium and above	-	37	17.4	-	24	15.1	

* Mann-Whitney U test
**Pearson Chi-square test
CP19-S:COVID-19 Phobia Scale, PHQ:Patient Health Questionnaire

Table 3. Comparison of scale scores of patient subgroups					
Groups		**C19P-S Total Median (Min-Max)**	**p**	**PHQ-9 Total Median (Min-Max)**	**p**
HT	No	48 (20-96)	0.13*	4 (0-27)	0.014*
	Yes	52 (25-85)		6 (0-22)	
CAD	No	49 (20-85)	0.7*	4 (0-22)	0.56*
	Yes	49.5 (24-96)		4 (0-27)	
HF	No	48 (20-96)	0.028*	4 (0-27)	0.13*
	Yes	55 (33-74)		5 (0-19)	
SHD	No	49 (20-96)	0.63*	4 (0-27)	0.26*
	Yes	48 (27-84)		4 (0-19)	

* Mann- Whitney U test
HT: Hypertension, CAD: Coronary Artery Disease, HF: Heart Failure, SHD: Structural Heart Diseases

Group		Variable median (min-max)					
		Psychological score	Somatic score	Economic score	Social score	C19P-S total	PHQ-9 total
All Patients		18.78 (6-30)	15.85 (6-29)	8.31 (4-19)	14.84 (5-25)	52 (24-96)	5 (0-27)
Gender	Female	18 (7-29)	15 (7-28)	8 (4-16)	14.5 (8-23)	48 (29-85)	5 (0-22)
	Male	19 (6-30)	16 (6-29)	8 (4-19)	15 (5-25)	49 (20-96)	4 (0-27)
p		0.34*	0.21*	0.52*	0.65*	0.66*	0.007*
Marital status	Married	18 (6-30)	15 (6-28)	8 (4-15)	15 (5-23)	48 (20-85)	4(0-22)
	Widowed/ Single	21 (10-30)	17 (11-29)	8 (4-19)	17 (9-25)	54 (34-96)	6(0-27)
p		0.005*	0.009*	0.31*	0.005*	0.002*	0.002*
Education level	Literate/ primary school	18[a] (7-30)	15 (7-29)	8 (4-19)	15[a](7-25)	49[a](29-96)	5 (0-27)
	High school	18[a](8-29)	15 (7-28)	8 (4-15)	15[a](5-23)	48[a](24-85)	4 (0-16)
	University	22[b](6-30)	17 (6-28)	8 (4-15)	17[b](9-25)	54[b](20-849)	5 (1-19)
p		0.004**	0.07**	0.68**	0.005**	0.017**	0.054**
Smoking	No	18 (6-30)	15 (6-29)	8 (4-17)	15 (6-25)	49 (20-96)	5 (0-27)
	Yes	20 (10-30)	17 (8-28)	8 (4-19)	15 (5-25)	49 (24-85)	4 (0-22)
p		0.018*	0.008*	0.95*	0.33*	0.31*	0.03*
Do you have any known chronic diseases?	No	19 (6-30)	15 (6-28)	8 (4-19)	15 (6-25)	48 (20-85)	4 (0-22)
	Yes	19 (7-30)	16 (7-29)	8 (4-17)	15 (5-25)	50 (24-96)	4 (0-27)
p		0.52*	0.82*	0.98*	0.33*	0.38*	0.1*
Do you have any known psychiatric illness?	No	19 (6-30)	15(6-28)	8(4-19)	15 (5-25)	48.5 (20-85)	4 (0-22)
	Yes	20.5 (14-30)	17 (11-29)	8 (4-17)	16.5 (9-25)	51.5 (33-96)	6.5 (2-27)
p		0.2*	0.11*	0.5*	0.19*	0.037*	0.0001*
Have you been hospitalized for coronavirus disease?	No	19 (6-30)	15 (6-299)	8 (4-19)	15(5-25)	49 (20-96)	4 (0-27)
	Yes	25(16-27)	22(13-24)	8 (5-13)	21(11-22)	48 (34-79)	8 (2-17)
p		0.15*	0.1*	0.88*	0.22*	0.63*	0.12*
Have you been hospitalized in intensive care for coronavirus disease?	No	19 (7-30)	15.5 (7-29)	8 (4-19)	15 (5-25)	49 (20-96)	4 (0-17)
	Yes	16 (6-17)	13 (6-15)	5 (4-5)	12 (11-12)	40 (27-43)	5 (2-13)
p		0.097*	0.095*	0.017*	0.11*	0.04*	0.76*
Were you able to come to your controls regularly during the pandemic period?	No	19 (7-30)	16 (7-29)	8 (4-19)	15 (5-25)	51 (24-96)	5 (0-27)
	Yes	17 (6-28)	15 (6-24)	8 (4-16)	14 (6-22)	47 (27-96)	5 (0-19)
p		0.004*	0.01*	0.83*	0.004*	0.012*	0.42*
Have you used your medicines regularly during the pandemic period?	No	20 (7-30)	17 (7-29)	8 (4-17)	15 (7-25)	52 (31-96)	4 (0-27)
	Yes	18 (6-30)	15 (6-28)	8 (4-19)	14 (5-22)	48 (24-83)	5 (0-22)
p		0.04*	0.02*	0.57*	0.026*	0.012*	0.93*

Table 4. The relationship between patients' demographic variables and scale scores

a,b: Different characters in each row show a statistically significant difference (p <0.05)

* Mann- Whitney U test, **Kruskal Wallis test.

CP19-S:COVID-19 Phobia Scale, PHQ:Patient Health Questionnaire

4. Comparison of C19P-S and PHQ-9 scores of the case group with demographic characteristics

The mean psychological subscale score of the patients was 18.78 (6-30), the somatic subscale mean score was 15.85 (6-29), the economic subscale mean score was 8.31(4-19), and the social subscale mean score was 14.84 (5-25).

While there was no difference between male and female patients in terms of C19P-S total and subscale scores, women's PHQ-9 total scores were higher than men's (p=0.007). Psychological, somatic, social subscale scores and C19P-S and PHQ-9 total scores of married patients were lower than those of single patients (p=0.005, p=0.009, p=0.005, p=0.002, p=0.002, respectively). In the analysis made according to education levels, there was a statistical difference between psychological, social subscale, and PHQ-9 total scores, and this difference was due to university graduates (p<0.05).

While psychological and somatic subscale scores of smokers were significantly higher than nonsmokers (p<0.05), PHQ-9 total scores were lower (p=0.03). The C19P-S total (p=0.037) and PHQ-9 total scores of the patients with a history of psychiatric disease were higher than those without (p=0.0001).

Both the economic subscale scores (p=0.017) and the C19P-S total scores of those who were hospitalized in intensive care due to COVID-19 disease were lower than those who were not hospitalized in there (p=0.04).

Psychological, somatic, social subscale and C19P-S total scores of those who did not come to their doctor controls regularly and who did not use their drugs regularly during the pandemic period were significantly higher than those who could come to their controls and regularly use drugs (p<0.05) **(Table 4).**

In the correlation analysis, there was a significant positive correlation in terms of C19P-S subscale and C19P-S total and PHQ-9 total scores **(Table 5).**

DISCUSSION

The World Health Organization defines being healthy as "not merely the absence of disease or infirmity, but a state of complete physical, mental and social well-being" (15). In this respect, taking care of the mental health of individuals with chronic diseases as well as their physical health has formed the basis of today's health service. In this study, the relationship between descriptive variables, fear of COVID-19 and depression in patients with CVD was examined and compared with healthy controls.

In our study, it was found that the coronaphobia scores of patients with CVD were higher than the control group, and 17.9% had clinically significant depression. Bakioğlu et al., in their study investigating the fear of COVID-19 in individuals with chronic disease, found that those with chronic diseases had higher phobia scores than those without (16).

Considering the intensity of information and sharing that COVID-19 is more mortal in individuals with chronic diseases, it was understandable to see higher fear scores in patients with CVD than in the healthy population. Although the design of our study did not allow us to provide a clear explanation, the high rates of depression in patients suggested that, in addition to the biological effects of physical illness, reasons such as loneliness and social isolation that come with the pandemic may cause an increase in depressive symptoms (17). As a matter of fact, the high depression and phobia scores in single and lonely people supported this idea.

Based on the most accepted answers, the rates of psychological anxiety in our patients outweighed the social, econo-

Table 5. The correlation analysis results

Variable		Gender	C19P-S Total	PHQ-9 Total	Psychological Score	Somatic Score	Economic Score	Social Score
Gender	rho	1.000	-0.013	0.067	-0.049	-0.032	0.051	-0.046
	p	-	0.855	0.334	0.475	0.638	0.460	0.507
C19P-S Total	rho	-0.013	1.000	0.322	0.858	0.890	0.592	0.893
	p	0.855	-	0.0001	0.0001	0.0001	0.0001	0.0001
PHQ-9 Total	rho	0.067	0.322	1.000	0.227	0.259	0.327	0.250
	p	0.334	0.0001	-	0.001	0.0001	0.0001	0.0001
Psychological Score	rho	-0.049	0.858	0.227	1.000	0.889	0.244	0.832
	p	0.475	0.000	0.001	-	0.0001	0.0001	0.0001
Somatic Score	rho	-0.032	0.890	0.259	0.889	1.000	0.370	0.779
	p	0.638	0.0001	0.0001	0.0001	-	0.0001	0.0001
Economic Score	rho	0.051	0.592	0.327	0.244	0.370	1.000	0.349
	p	0.460	0.0001	0.0001	0.0001	0.0001	-	0.0001
Social Score	rho	-0.046	0.893	0.250	0.832	0.779	0.349	1.000
	p	0.507	0.0001	0.0001	0.0001	0.0001	0.0001	-

Rho: spearman rho correlation coefficient

CP19-S:COVID-19 Phobia Scale, PHQ:Patient Health Questionnaire

mic and somatic concerns. In the study of El-rahimi et al., it was shown that the psychological fear of the pandemic is high (7). In our study, what caused the most fear in patients was the possibility of a family member getting the coronavirus, while the least was the bodily pain caused by thinking about the coronavirus. In our previous community-based study on pandemics and issues of concern, 82.4% of the participants stated that they were most concerned about the illness of their relatives (l8). In fact, as in many countries where the concept of family is valued, this result was completely in line with the value judgments of our society (19).

Contrary to studies showing that coronaphobia is higher in women (16, 20), no difference was found between the coronaphobia scores of male and female patients in this study. In fact, the result was curious considering that women express their emotions more easily, are more easily affected by environmental variables, and are more fragile psychologically due to differences in their biological structure (21,22). This difference may have been due to the changes in the mean age of the studied groups, although the studies were conducted in groups with different clinical and cultural characteristics. As a matter of fact, it is stated in a study that the issues of concern may change with age (23). The fact that the female patients in our study were older than the previous study (16), may have allowed them to develop the maturity to cope with their fears and to be less anxious over time. On the other hand, this result revealed the view that the pandemic may have the same effect in both sexes, beyond all known biological and social factors.

Contrary to studies showing a negative correlation between education level and anxiety and depression, in our study, higher education did not affect depression scores, but it caused an increase in COVID-19 fear scores (7,16). In fact, while increasing the level of education would allow people to have sufficient information about the disease and its course and to reduce the fear of uncertainty (24), our results did not support this view. Perhaps the decrease in effectiveness in social and vocational fields provided by higher education, disconnection from business and social life, more awareness of education, production, and economic losses, etc. caused more fear in these highly educated people. As a matter of fact, the high level of psychological and social anxiety in highly educated people supported our hypothesis.

Another factor that has been shown to be important in the etiology and prognosis of CVD is marriage. A good marriage can contribute positively to the course of CVD (25-27). In this study, it was found that single and widowed patients with cardiovascular disease had higher depression and phobia scores than married ones. Adding other isolating factors such as long quarantine measures, social distance and isolation to the stress of living alone seems to have caused this difference. In addition, considering that having a CVD increases the need for communication, care and spiritual support, this result once again showed that a quality marriage or partnership may be important for the protection of mental health (28).

Contrary to studies (29), which stated that the rates of psychiatric illness increased after discharge in patients receiving inpatient treatment for COVID-19, in this study, both C19P-S total scores and economic anxiety scores of inpatients in the intensive care unit were found to be low. Factors such as the length of stay in the hospital, the medication administered, and the severity of the disease may cause differences between studies as well as the strength of surviving a serious and untreated disease seems to have contributed to the reduction of patients' fears (30). Perhaps this experience was also one reason why patients developed the view that "health is much more important than economic problems".

Another result in our study was that patients with high fear of COVID-19 did not come to their controls regularly and did not take their medications regularly. As a matter of fact, most of the patients (57%) stated that they did not come to their controls because they were afraid of the contagiousness of the virus. 14% of them stated that they stopped their medication because the drugs pose a risk for COVID-19. Disruption of follow-up and treatment can lead to vital problems in these people who are already at risk due to their existing diseases. For this reason, it seems that important contributions would be made if the authorities make the necessary explanations about contamination /treatment/ possible risks/ medication, and integrate technological opportunities into clinical practices in order to ensure the continuity of routine controls and treatment (31).

Despite having CVD, 37.9% of our patients were smokers, and smoking did not affect depression scores, but increased fear scores. Since the relationship between smoking and the development of psychiatric disease has not been fully elucidated (32), we have not been able to make a definitive interpretation. However, this result can be attributed to the increase in anxiety symptoms caused by the physiological effects of hypoxia caused by smoking, or to the fact that smoking is a very risky behavior in terms of COVID-19 (33).

In our study, the presence of HF was found to be a factor causing an increase in coronaphobia scores. HF is a serious disease with symptoms such as shortness of breath, insomnia, edema, and loss of energy (34,35). Increased anxiety in these patients may increase the load on the heart by increasing sympathetic activity, which means the development of serious complications. In addition, depression is a common mental disorder in hypertension patients, as in other cardiovascular diseases. High blood pressure, physical fatigue, neurological complications, and antihypertensive used may cause depression development (36). In our study, the presence of HT caused an increase in the depression scores of the patients. Although our data cannot explain this causality, it has revealed the need to be more careful especially for these two groups of patients.

In this study, a positive correlation was found between depression and phobia scores, and it was found that patients with psychiatric comorbidities had high both phobia and depression scores. Considering that comorbid depression

(37) and anxiety (38) cause an increase in poor prognosis and mortality rates for patients with CVD and that existing psychiatric disease contributes to the development of comorbidities, this correlation we found indicates that the mental and physical effects of the pandemic may be much higher than expected.

LIMITATIONS

Our study has some limitations. First of all, this study was conducted with patients who applied to our hospital, were literate and spoke Turkish. Therefore, the results do not reflect the entire population. The relatively low reliability of the data obtained from the self-report scales may have affected our results. However, despite these limitations, our study may provide preliminary data for future studies.

CONCLUSION

This study evaluated the levels of fear and depression in individuals with cardiovascular disease during the CO-VID-19 outbreak and explored their possible predictors. In the current COVID-19 outbreak, patients were found to have higher fear and depression scores than healthy individuals. Being a woman, being divorced or widowed, having a chronic comorbid disease were found to be risky for depression, while higher education, smoking, and non-compliance with treatment were risk factors for phobia. The phobia scores of those hospitalized in the intensive care unit due to the coronavirus disease were low.

In conclusion, a comprehensive assessment of the effects of the pandemic on patients with CVD is important not only for maintaining physical health but also for protecting the mental health of these patients. The development of effective interventions and support strategies to increase the resilience and improve the mental health of patients with psychological problems can make significant contributions to the protection of public health, now and in the future.

Conflicts of interest: The authors declare that they have no conflict of interest. Research Contribution Rate Statement Summary

Author contribution statement: The authors declare that, they have contributed equally to the manuscript.

Ethics and Patient Consent: The study protocol was approved by the Ethics Committee of the Inonu University Faculty of Medicine (2020/1248). Informed consent form was taken from all the patients participating in the study.

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