



Research

Fear, Anxiety, and Obsession Levels of Dialysis Patients and Healthy Individuals During the COVID-19 Pandemic

COVID-19 Pandemisi Sırasında Diyaliz Hastaları ve Sağlıklı Bireylerin Korku, Anksiyete ve Takıntı Düzeyleri

Arife Albayrak Coşar¹, Sibel Yücel Koçak², Filiz Turan³, Arzu Öztürk³, Mürvet Yılmaz²

¹Alanya Alaaddin Keykubat University Faculty of Health Science, Department of Nursing, Antalya, Türkiye

²University of Health Sciences Türkiye, Bakırköy Dr. Sadi Konuk Training and Research Hospital, Clinic of Nephrology, İstanbul, Türkiye

³University of Health Sciences Türkiye, Bakırköy Dr. Sadi Konuk Training and Research Hospital, Unit of Dialysis, İstanbul, Türkiye

ABSTRACT

Objective: The aim of this study was to determine the level of fear, anxiety, and obsession caused by the coronavirus disease-2019 (COVID-19) pandemic in hemodialysis (HD) and peritoneal dialysis (PD) patients, and to make a comparison with healthy individuals.

Methods: This analytical cross-sectional study was conducted with 162 people (n=162) who were HD or PD patients or healthy individuals when lockdown measures were in force. Data were collected using a personal information form, the coronavirus anxiety scale (CAS), the obsession with COVID-19 scale (OCS), and the fear of COVID-19 scale.

Results: The fear and OCS scores of the PD patients were significantly higher than those of the HD patients and healthy individuals (p<0.01). There was no difference between the groups with regard to the CAS scores. Positive correlations were found in the study between the COVID-19 Fear scale and the CAS and OCS (r=0.353; r=0.564 respectively; p<0.01). A positive correlation was also found between the COVID-19 anxiety scale and OCS (r=0.331; p<0.01).

Conclusion: The fear, anxiety, and obsession levels of HD patients were similar to those of healthy individuals, but higher in PD patients. It is recommended that doctors and nurses should provide and maintain social and psychological support in extraordinary situations such as the pandemic, especially to patients with chronic illnesses such as PD patients who have to perform their own treatment at home, in order to reduce levels of fear, anxiety, and obsession.

Keywords: Anxiety, COVID-19, fear, hemodialysis, peritoneal dialysis, obsession, healthy individual

ÖZ

Amaç: Bu çalışmanın amacı, hemodiyaliz (HD) ve periton diyalizi (PD) hastalarında koronavirüs hastalığı-2019 (COVID-19) pandemisinin neden olduğu korku, kaygı ve takıntı düzeyini belirlemek ve sağlıklı kişilerle karşılaştırma yapmaktır.

Gereç ve Yöntem: Bu analitik-kesitsel çalışma sokağa çıkma yasağı önlemlerinin yürürlükte olduğu zamanda HD, PD hastaları ve sağlıklı bireyler olmak üzere 162 (n=162) kişi ile yapıldı. Veriler kişisel bilgi formu, COVID-19 korku ölçeği, koronavirüs anksiyete ölçeği (CAS) ve COVID-19 ile takıntı ölçeği (OCS) ile toplandı.

Bulgular: PD hastalarının korku ve OCS puanları HD hastaları ve sağlıklı bireylere göre anlamlı olarak daha yüksekti (p<0,01). CAS puanları açısından gruplar arasında fark yoktu. Çalışmada COVID-19 korkusu ölçeğiyle, sırasıyla CAS ve OCS arasında pozitif yönlü korelasyon bulundu (r=0,353; r=0,564; p<0,01). COVID-19 anksiyete ölçeğiyle OCS arasında da pozitif yönlü ilişki bulundu (r=0,331; p<0,01).

Sonuç: HD hastalarının korku, anksiyete ve obsesyon düzeyleri sağlıklı bireyler ile benzer iken PD hastalarında yüksekti. Pandemi gibi olağanüstü durumlarda özellikle tedavilerini evde kendileri sürdürmek zorunda kalan PD hastaları gibi kronik hastalığı olan hastalarda hekim ve hemşireleri tarafından korku, anksiyete ve obsesyon düzeylerinin azaltılmasına yönelik sosyal ve psikolojik desteğin sağlanması ve sürdürülmesi önerilmektedir.

Anahtar Kelimeler: Anksiyete, COVID-19, korku, hemodiyaliz, periton diyalizi, takıntı, sağlıklı birey

Address for Correspondence: Arife Albayrak Coşar, Alanya Alaaddin Keykubat University Faculty of Health Science, Department of Nursing, Antalya, Türkiye
Phone: +90 505 806 16 62 E-mail: albayrakcosar@hotmail.com ORCID ID: orcid.org/0000-0003-3049-5895

Cite as: Albayrak Coşar A, Yücel Koçak S, Turan F, Öztürk A, Yılmaz M. Fear, Anxiety, and Obsession Levels of Dialysis Patients and Healthy Individuals During the COVID-19 Pandemic. Med J Bakirkoy 2023;19:365-371

Received: 20.01.2023
Accepted: 24.04.2023

INTRODUCTION

The coronavirus disease-2019 (COVID-19) first appeared in the city of Wuhan in China in December 2019, but spread quickly and within a short time affected the entire world. The World Health Organization declared it a pandemic on March 11, 2020 (1,2). Since its first appearance, the virus has caused the deaths of more than 6 million people (COVID-19 Visualizer, 2022 June 29). As COVID-19 continued its spread, the first case was reported in Türkiye on March 11, 2020, and from that date, measures were introduced to limit the spread of the virus, including working from home, the closure of all educational institutions, restaurants, culture and sport facilities, and public transportation systems, the restriction of travel, a lockdown, the restriction of the gathering of groups of people, and the enforcement of social distancing.

Most people who are infected with the COVID-19 show only slight or moderate symptoms that do not necessitate any particular treatment. However, in patients receiving dialysis treatment for end-stage renal disease (ESRD), there is a higher risk of serious clinical progress and a worse outcome (3). In renal failure patients who need hemodialysis (HD) or peritoneal dialysis (PD) to maintain their lives, COVID-19 increases the rate of morbidity and mortality when their immune system is under pressure because of uremia or they have more than one illness at the same time (4,5). At this time, both healthy people and the chronically ill are subjected to social isolation, separation from friends and family, and restrictions on their lives. The pandemic has increased the need for social support, especially for the chronically ill, such as those with end-stage renal failure. For this reason, cutting off social support as part of lockdown or an isolation strategy may negatively affect mental health, especially in at-risk groups, resulting in an unwillingness to accept health services, not going regularly for check-ups or going late, or developing a negative attitude toward health workers because of fear of infection (6).

The pandemic has been shown to have increased levels of fear, anxiety and obsession in the general population (7,8) and the knowledge that their risk of infection with COVID-19 is high, that they can become seriously ill, and that they may have a greater risk of death can cause greater fear, anxiety, and obsession in ESRD patients than in healthy individuals. All of these negative feelings can naturally have negative effects on mental health and on conformity to and continuation of treatment in the chronically ill (9). Accordingly, the aim of this study was to compare the levels of fear, anxiety, and obsession caused by the COVID-19 pandemic in patients receiving HD and PD treatment.

METHODS

Participants and the Procedure

This analytical cross-sectional research was conducted with healthy individuals and ESRD patients receiving treatment at the dialysis unit of a teaching and research hospital in Istanbul, Türkiye, between April 1 and 30, 2021, when lockdown measures were in force.

The study was conducted with adult (>18 years of age) patients and healthy individuals. The first and second groups comprised 50 HD patients (90.5%) and 31 PD patients (90.7%), respectively, who were regularly being followed up at the dialysis unit of a teaching and research hospital in Istanbul. The third group consisted of 81 healthy individuals who came to the hospital as friends or relatives of patients and who were contacted using a simple sampling method. Thus, 162 people were included in the study. Individuals who were aged 18 or more, had no communication impediment, had no psychiatric diagnosis, were literate, had a diagnosis of ESRD and were undergoing treatment for it, or were healthy individuals without any chronic disease were included in the research. Patients were included if they had been on regular HD (three times weekly, four hours per session) or PD (continuous ambulatory PD or automated PD) for at least three months. The data collection instruments were handed out to the participants and then collected after completion. Completing the data collection instruments took approximately 10-15 minutes.

The patients and healthy individuals were informed about the study, and signed informed consent forms were obtained according to the Helsinki Declaration before they were included in the study. Before starting the research, approval was obtained from the Ministry of Health (2021-02-07T14_34_35) and from the Ethics Committee of Alanya Alaaddin Keykubat University Faculty of Medicine Clinical Research Ethics Committee (decision no: 05-05, date: 10.03.2021). Institutional permission was obtained from the hospital where the research was conducted.

Measures

Data collection was achieved using a personal information form, created by the researchers after a scan of the literature and consisting of 16 questions on sociodemographic characteristics and HD and PD patients' clinical parameters (4,10-12), the coronavirus anxiety scale (CAS), the obsession with COVID-19 scale (OCS), and the fear of COVID-19 scale (FCV-19S) (13-15).

The FCV-19S was developed to measure the levels of fear arising from COVID-19. The scale has a single dimension and

seven items of five-way Likert type (1= I definitely disagree, 5= I definitely agree). Item-total correlations were between 0.47 and 0.56, and factor loads varied 0.66 and 0.74. Internal consistency was high ($\alpha=0.80$), and test-retest reliability was at an acceptable level ($r=0.72$). A higher score on the scale indicates a higher level of fear related to COVID-19 (13). The Turkish version of the scale has powerful psychometric characteristics (11). In this study, the Cronbach's alpha was 0.87.

The OCS measures an individual's experience of persistent and disturbing thoughts related to COVID-19 over the previous two weeks. It is a four-item self-reporting instrument in which each item is evaluated on a five-point scale from 0 (not at all) to 4 (almost every day). The score range is 0-16, and higher scores indicate a higher rate of obsessive thought. A score of 7 or more indicates a problematic or dysfunctional thought. It is a reliable ($\alpha>0.83$) and valid instrument (14). The Turkish version of the scale was used (10). In our study, the Cronbach's alpha was found to be 0.600.

The CAS is a five-item scale scored between 0 (not at all) and 5 (almost every day). Measures an individual's experience of anxiety related to COVID-19 over the previous two weeks. The score is between 0 and 20, and the cutoff score is 9. High scores are considered problematic. The internal consistency of the scale was high ($\alpha=0.93$). The scale has high diagnostic characteristics, with 90% sensitivity and 85% specificity (15). The Turkish version used has powerful psychometric characteristics (10). Cronbach's alpha in our study was 0.828.

Statistical Analysis

The program Number Cruncher Statistical System 2007 (Kaysville, Utah, USA) was used for the statistical analyses, and descriptive statistical methods (mean, standard deviation, median, frequency, percentage, minimum, maximum) were used in the evaluation of the study data. The conformity of quantitative data to normal distribution was tested using the Shapiro-Wilk test and graphical examinations. In comparisons of quantitative data that showed normal distribution between more than two groups, one-way variance analysis and Bonferroni two-way evaluations were used. In comparisons of quantitative data that did not show normal distribution between more than two groups, the Kruskal-Wallis test and the Dunn-Bonferroni test were used. The Pearson chi-square test and Fisher-Freeman-Halton exact test were used for the comparison of qualitative data. The Spearman correlation test was used to evaluate correlations between quantitative variables. Statistical significance was taken as $p<0.05$.

RESULTS

Table 1 shows the sociodemographic data of the participants. As a whole and as groups, the distributions of the participants were similar in terms of gender, marital status, education status, and economic status ($p>0.05$). The mean age of individuals included in the study was 48.14 ± 14.52 , and there was no statistically significant difference in the mean ages of the PD and HD patients. The mean age of the healthy individuals was found to be significantly lower than that of the HD and PD patients ($p<0.01$). No statistically significant difference was found between the groups of participants according to whether they had had COVID-19, whether they received support from their families, or whether family members had had COVID-19 ($p>0.05$). All HD patients received HD treatment three times a week, and the primary diagnosis of 50% was hypertension. The HD patients had been on dialysis for a mean of 64.90 ± 42.47 months. Examining the clinical characteristics of the PD patients, it was observed that the type of dialysis of 58.1% was continuous ambulatory PD. The primary diagnosis was 38.7% hypertension, and they had been receiving treatment for a mean of 50.65 ± 32.19 months.

Table 2 shows the participants' mean FCV-19S, CAS, and OCS scores. The mean score obtained from the participants on the FCV-19S was 17.85 ± 6.21 , and there was a statistically significant difference between the groups ($p<0.01$). According to two-way comparisons to determine the difference, the mean scores of PD patients on the FCV-19S were higher than those of healthy individuals and HD patients ($p<0.01$).

The total mean score on the CAS was 1.09 ± 2.5 , and there was no statistically significant difference between the groups ($p>0.05$).

The participants' mean score on the OCS was 3.35 ± 2.26 , and a statistically significant difference was found between the groups ($p<0.01$). According to two-way comparisons, the scores obtained by PD patients on the OCS were significantly higher than those of healthy individuals or HD patients ($p<0.05$).

Table 3 shows the correlation between fear of COVID-19, CAS, and OCS scores. A weak positive correlation was found between the total mean score on the FCV-19S and CAS ($r=0.353$; $p<0.01$). A medium-level positive correlation was found between the total mean score on the FCV-19S and OCS ($r=0.564$; $p<0.01$). A weak but statistically significant positive correlation was found between the mean CAS score and the mean total OCS score ($r=0.331$; $p<0.01$).

Table 1. Demographic, clinical and sociocultural data of the participants

		All (n=162) n (%)	HD (n=50) n (%)	PD (n=31) n (%)	Healthy individual (n=81)	p-value
Mean age (years); mean \pm SD		48.14 \pm 14.52	54.20 \pm 16.01	51.19 \pm 11.80	43.23 \pm 12.82	*0.001**
Sex	Female	87 (53.7)	22 (44)	19 (61.3)	46 (56.8)	^c 0.232
	Male	75 (46.3)	28 (56)	12 (38.7)	35 (43.2)	
Primary kidney disease	Hypertension		25 (50)	12 (38.7)		
	Diabetes mellitus		13 (26)	4 (12.9)		
	Glomerulonephritis		7 (14)	3 (9.7)		
	Cystic kidney disease		1 (2)	2 (6.5)		
	Other/unknown		4 (8)	10 (32.3)		
Dialysis vintage (months); median (min-max) Mean \pm SD			60 (6-156) 64.90 \pm 42.47	52 (6-126) 50.65 \pm 32.19		
Marital status	Married	107 (66.0)	30 (60.0)	24 (77.4)	53 (65.4)	^c 0.270
	Literate	28 (17.3)	11 (22.0)	7 (22.6)	10 (12.3)	
Education	Primary/secondary school	83 (51.2)	29 (58.0)	14 (45.2)	40 (49.4)	^b 0.203
	High school	44 (27.2)	8 (16.0)	10 (32.3)	26 (32.1)	
	University or higher	7 (4.3)	2 (4.0)	0 (0.0)	5 (6.2)	
Economical status	Income less than expenses	68 (42.0)	26 (52.0)	12 (38.7)	30 (37.0)	^c 0.150
	Income equals expense	75 (46.3)	19 (38.0)	18 (58.1)	38 (46.9)	
	Income more than expenses	19 (11.7)	5 (10.0)	1 (3.2)	13 (16.0)	
Family member support	Anytime	96 (59.3)	33 (66.0)	22 (71.0)	41 (50.6)	^c 0.143
	Never	32 (19.8)	9 (18.0)	6 (19.4)	17 (21.0)	
	Sometime	34 (21.0)	8 (16.0)	3 (9.7)	23 (28.4)	
COVID-19 diagnosis		40 (24.7)	14 (28.0)	9 (29.0)	17 (21.0)	^c 0.547
COVID status of family members		45 (27.8)	8 (16.0)	11 (35.5)	26 (32.1)	^c 0.077
Type of kidney replacement therapy	HD		50 (100)			
	PD			18 (58.1)		
	APD			13 (41.9)		

HD: Hemodialysis, PD: Peritoneal dialysis, CAPD: Continuous ambulatory peritoneal dialysis, APD: Automated peritoneal dialysis, COVID-19: Coronavirus disease-2019, SD: Standard deviation, min-max: Minimum-maximum

^aOne-Way ANOVA, ^bFisher-Freeman-Halton test, ^cPearson chi-square test, **p<0.01, significant p-values are written in bold

Table 2. FCV-19S, CAS, and OCS scores of participants by total and groups

		All (n=162)	HD (n=50)	PD (n=31)	Healthy individual (n=81)	p-value
FCV-19S score: mean \pm SD Median (min-max)		17.85 \pm 6.21	16.76 \pm 5.29	24.35 \pm 4.67	16.02 \pm 5.64	*0.001**
		18 (7-31)	17 (7-29)	25 (12-31)	16 (7-26)	
CAS score: mean \pm SD Median (min-max)		1.09 \pm 2.5	1.22 \pm 2.44	1.9 \pm 3.92	0.7 \pm 1.66	^c 0.206
		0 (0-16)	0 (0-10)	0 (0-16)	0 (0-10)	
OCS score: mean \pm SD Median (min-max)		3.35 \pm 2.26	3.4 \pm 1.88	4.97 \pm 2.01	2.7 \pm 2.26	*0.001**
		3 (0-10)	3 (0-7)	5 (2-10)	2 (0-10)	

FCV-19S: Fear of COVID-19 scale, CAS: Coronavirus anxiety scale, OCS: Obsession with COVID-19 scale, COVID-19: Coronavirus disease-2019, HD: Hemodialysis, PD: Peritoneal dialysis, SD: Standard deviation, min-max: Minimum-maximum, ^aKruskal Wallis Test, **p<0.01

Table 3. The relationship between FCV-19S, CAS, and OCS scales

	CAS		OCS	
	r	p	r	p
FCV-19S	0.353 [†]	0.001**	0.564 [†]	0.001**
CAS	-	-	0.331 [†]	0.001**

[†]r= Spearman correlation coefficient, **p<0.01. Significant p-values are written in bold.
CAS: Coronavirus anxiety scale, FCV-19S: Fear of COVID-19 scale, OCS: Obsession with COVID-19 scale, COVID-19: Coronavirus disease-2019

DISCUSSION

Our study is the first to compare the state of fear, obsession, and anxiety in HD and PD patients and healthy individuals in the COVID-19 pandemic. It was found in our study that the pandemic caused fear, anxiety and obsession in all individuals, whether or not they had a chronic illness, and that fear, anxiety and obsession were greater in PD patients than in HD patients and healthy individuals. The mean ages of HD and PD patients in our study were similar, and the mean age of healthy individuals was significantly lower. The HD, PD, and healthy groups were similar in terms of gender, economic status, and educational status. There was no significant difference between the groups of participants about support by family members, having had COVID-19, or having a family member who had had COVID-19.

In its early stages, the outbreak of COVID-19 caused worldwide fear, anxiety, and uncertainty. Uncertainty and feelings such as fear, unhappiness, and helplessness felt because of worry about the disease caused intense stress (9). In our study also, the participants' fear of COVID-19 was found to be at a medium level. It was also found in a comparison between the groups that the fear of COVID-19 in PD patients was significantly greater than that in HD patients or healthy individuals. In a meta-analysis by Luo et al. (8), it was determined that fear of COVID-19 was high worldwide. In a study by Bakioğlu et al. (16), the fear of COVID-19 in chronically ill individuals was greater than in individuals who were not chronically ill. Haktanir et al. (17) reported that no significant difference was found between healthy individuals and those who were chronically ill. It was found in our study that there was no significant difference in levels of fear between HD patients and healthy individuals included in the study. This result is similar to that of Haktanir et al. (17). However, in our study, the fear levels of the PD patients were found to be greater than those of the healthy individuals, and this result is similar to the study by Bakioğlu et al. (16,17). All clinics in hospitals were set aside for COVID-19 treatment, but HD units continued to accept

and treat patients. It is thought that the fear levels of PD patients were higher because PD patients had to manage their own treatment at home, hospitals did not accept patients other than in an emergency, all clinics were set aside for COVID-19 treatment, intensive care units were full of COVID-19 patients, social support was reduced because of the lockdowns, and all sources of information during the pandemic emphasized that COVID-19 had a greater effect on those with chronic health problems.

Anxiety plays an important role in our ability to continue our lives, but when it is at a high level, it prevents us from acting and continuing our daily lives and can sometimes even put us in danger (18). This study was conducted using people who were particularly sensitive to COVID-19 infection, and their general anxiety was found to be 44.7% (19). In a study by Hyland et al. (20), it was found that two out of four (27.7%) people who were in quarantine for COVID-19 had general anxiety disorder and depression. The mean score obtained from the participants in our study on the CAS was below the cutoff point, and no significant difference was found between the groups. Recently, in a study by Karaca et al. (12) comparing the psychological state of HD and PD patients in the period of social isolation because of COVID-19, it was reported that the scores obtained by PD patients on the hospital anxiety and depression scale were higher than those of HD patients, although the difference was not significant. In our study, the scores obtained on the COVID-19 anxiety scale by PD patients were higher than those of HD patients and healthy individuals, although this difference was not significant. It is thought that the high fear levels of patients with PD increased their levels of anxiety.

COVID-19 is a fast-spreading disease, and for this reason, measures were taken at a national and global level so that it would not affect the broader population. These measures included staying at home, regular hand washing, keeping a distance of at least 1 meter between people, using masks, washing produce brought into the house, and ventilation. Continuing the use of these measures for a long time causes obsessive behavior in people (21-23). In our study, it was found that the scores of PD patients on the obsession scale were significantly higher than those of HD patients or healthy individuals. In a study by Abba-Aji et al. (22) with 6041 people in the early period of the pandemic, it was reported that the prevalence of symptoms of obsessive-compulsive disorder was higher than before the pandemic. In our study, it was found that obsession levels were high in PD patients but low in HD patients and healthy individuals (22). This is because PD patients are far away from a dialysis center and manage all their treatment for themselves at home;

they perform their own dialysis; they pay more attention to measures such as regular hand washing, hygiene, and the use of face masks and gloves to avoid infection with the virus; and they regularly see news of COVID-19-related deaths on the media, which puts them into a state of obsession, so that their obsession levels may rise. It is thought that the low levels of obsession in the HD patients compared with the PD patients in our study arises from the high level of protective measures in HD units – drawing curtains between patients, not entering the unit without a mask, wearing a mask throughout the session, restricting entry and exit, and use of personal protective equipment by the staff – and from the provision of a fault-free service. During their treatment, HD patients can establish face-to-face communication with the health team, they can ask the doctors and nurses questions about COVID-19 face to face, they can share their concerns and worries, and they can communicate with other patients, socialize, and share their feelings, which may reduce their fear, anxiety, and obsessions.

The lack of confidence, fear of uncertainty, and strict measures taken have awakened a strong emotional reaction in the general population, which may lead to psychological problems. It was found in our study that emotional reactions such as fear, anxiety, and obsession, which could cause psychological problems, were felt particularly in the PD group, who had to manage their treatment at home by themselves and who were socially isolated to a greater extent than the HD group or healthy individuals.

CONCLUSION

It was found in our study that the levels of fear, anxiety, and obsession of HD patients were similar to those of healthy individuals, but in PD patients they were higher. It is recommended that in extraordinary situations such as the pandemic, doctors and nurses should provide and maintain social and psychological support to lower levels of fear, anxiety, and obsession in the chronically ill, such as PD patients who are obliged to carry on their treatment by themselves at home.

Acknowledgments: We thank Emire Bor, EMPIAR Statistics, for performing statistical analysis of the study. The present authors are especially grateful to all dialysis patients and healthy individuals who participated in this study.

ETHICS

Ethics Committee Approval: Before commencing the research, approval was obtained from the Ministry of Health (2021-02-07T14_34_35) and from the Clinical Research Ethics Committee of Alanya Alaaddin Keykubat University

Faculty of Medicine (decision no: 05-05, date: 10.03.2021). Institutional permission was obtained from the hospital where the research was conducted.

Informed Consent: Written informed consent was obtained from the participants.

Authorship Contributions

Concept: A.A.C., S.Y.K., Design: A.A.C., S.Y.K., M.Y., Data Collection or Processing: A.A.C., S.Y.K., F.T., A.Ö., Analysis or Interpretation: A.A.C., S.Y.K., Literature Search: A.A.C., S.Y.K., F.T., A.Ö., Writing: A.A.C., S.Y.K., F.T., A.Ö., M.Y.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declare that this study received no financial support.

REFERENCES

1. WHO. World Health Organisation. Coronavirus [Internet]. [cited 2020 Feb 6]. Available from: <https://www.who.int/health-topics/coronavirüs>
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020;395:497-506.
3. Williamson EJ, Walker AJ, Bhaskaran K, Bacon S, Bates C, Morton CE, et al. Factors associated with COVID-19-related death using OpenSAFELY. *Nature* 2020;584:430-6.
4. Kocak SY, Kayalar AO, Karaosmanoglu HK, Yilmaz M. COVID-19 in hemodialysis patients: a single-center experience in Istanbul. *Int Urol Nephrol* 2021;53:2385-97.
5. Jager KJ, Kramer A, Chesnaye NC, Couchoud C, Sánchez-Álvarez JE, Garneata L, et al. Results from the ERA-EDTA Registry indicate a high mortality due to COVID-19 in dialysis patients and kidney transplant recipients across Europe. *Kidney Int* 2020;98:1540-8.
6. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. *Emerg Infect Dis* 2004;10:1206-12.
7. Ozamiz-Etxebarria N, Dosal-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cad Saude Publica* 2020;36:e00054020.
8. Luo F, Ghanei Gheshlagh R, Dalvand S, Saedmoucheshi S, Li Q. Systematic Review and Meta-Analysis of Fear of COVID-19. *Front Psychol* 2021;12:661078.
9. Xiao H, Zhang Y, Kong D, Li S, Yang N. Social Capital and Sleep Quality in Individuals Who Self-Isolated for 14 Days During the Coronavirus Disease 2019 (COVID-19) Outbreak in January 2020 in China. *Med Sci Monit* 2020;26:e923921.
10. Evren C, Evren B, Dalbudak E, Topcu M, Kutlu N. Measuring anxiety related to COVID-19: A Turkish validation study of the Coronavirus Anxiety Scale. *Death Stud* 2022;46:1052-8.
11. Satici B, Gocet-Tekin E, Deniz ME, Satici SA. Adaptation of the Fear of COVID-19 Scale: Its Association with Psychological Distress and Life Satisfaction in Turkey. *Int J Ment Health Addict* 2021;19:1980-8.
12. Karaca C, Eren N, Dincer MT, Turan S, Karaca HK, Kucuk M, et al. How Dialysis Patients Cope with a Curfew? A Comparison of Psychological Status between Hemodialysis and Peritoneal Dialysis Patients During the COVID-19 Pandemic. *Blood Purif* 2022;51:458-63.

13. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 Scale: Development and Initial Validation. *Int J Ment Health Addict* 2020;20:1537-45.
14. Lee SA. How much "Thinking" about COVID-19 is clinically dysfunctional? *Brain Behav Immun* 2020;87:97-8.
15. Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. *Death Stud* 2020;44:393-401.
16. Bakioğlu F, Korkmaz O, Ercan H. Fear of COVID-19 and Positivity: Mediating Role of Intolerance of Uncertainty, Depression, Anxiety, and Stress. *Int J Ment Health Addict* 2021;19:2369-82.
17. Haktanir A, Seki T, Dılmaç B. Adaptation and evaluation of Turkish version of the fear of COVID-19 Scale. *Death Stud* 2022;46:719-27.
18. Koçak Z, Harmancı H. Mental Health in the Family During the COVID-19 Pandemic Process. *Journal of Karatay Social Research* 2020;5:183-207.
19. Liu S, Yang L, Zhang C, Xiang YT, Liu Z, Hu S, et al. Online mental health services in China during the COVID-19 outbreak. *Lancet Psychiatry* 2020;7:17-8.
20. Hyland P, Shevlin M, McBride O, Murphy J, Karatzias T, Bentall RP, et al. Anxiety and depression in the Republic of Ireland during the COVID-19 pandemic. *Acta Psychiatr Scand* 2020;142:249-56.
21. Özçakmak S, Var I. Good Hygiene Practices to Prevent Covid-19 Outbreak Spreading. *Akademik Gıda* 2020;18:433-41.
22. Abba-Aji A, Li D, Hrabok M, Shalaby R, Gusnowski A, Vuong W, et al. COVID-19 pandemic and mental health: Prevalence and correlates of new-onset obsessive-compulsive symptoms in a Canadian province. *Int J Environ Res Public Health* 2020;17:6986.
23. Erkal E, Ses A, Aydın S, Çalışkan D. Non-Pharmaceutical Public Health Measures to Prevent the Transmission of COVID-19 in Community. *ESTUDAM Public Health Journal* 2020;5:79-95.