Psychiatria Danubina, 2023; Vol. 35, No. 1, pp 97-102 https://doi.org/10.24869/psyd.2023.97 *Original paper*

ASSESSMENT OF THE PSYCHOLOGICAL EFFECT OF THE COVID-19 PANDEMIC ON PATIENTS WITH GENERALIZED ANXIETY DISORDER

Mehmet Celal Kefeli & Mustafa Akkus

Department of Psychiatry, University of Erzincan Binali Yıldırım, Mengucek Gazi Education and Research Hospital Erzincan, Erzincan, Turkey

received: 3.3.2022; revised: 9.5.2022; accepted: 8.6.2022

SUMMARY

***Background**: The pandemic caused by the coronavirus disease of 2019 (COVID-19) has affected the mental health of the general population, leading to an increase in depression, anxiety and stress. The results of the studies on the psychological effects of the pandemic in patients with psychiatric illnesses were contradictory in that some reported higher adverse effects in patients with psychiatric illnesses compared to the healthy control subjects, whereas some did not. Thus, the aim of this study is to compare the patients with a diagnosis of generalized anxiety disorder and the healthy control subjects in terms of certain psychological parameters during the pandemic period.*

***Subjects and methods:** 81 patients, who were diagnosed with generalized anxiety disorder and 80 healthy volunteers of matching characteristics were included in this study. Both the patient and control groups were administered a sociodemographic questionnaire, short form of the Depression, Anxiety and Stress Scale (DASS-21) and the Revised Impact of Event Scale (IES-R). The resulting research data were analyzed using the SPSS 22.0 software*

***Results:** No significant difference was found between the two groups in terms of depression, stress, intrusion, hyperarousal and avoidance. On the other hand, the increase observed in the anxiety symptoms was found to be significant in the patient group compared to the control group.*

***Conclusion:** The findings of this study revealed that the depression, stress and trauma-related stress responses of GAD patients have not differred during the COVID-19 pandemic period, whereas that their anxiety levels have increased significantly, as compared to the healthy control subjects. In this context, it is recommended that the clinicians take into consideration that the pandemic may lead to an increase in the symptoms of individuals diagnosed with anxiety disorder.*

***Key words:** COVID-19 - Generalized Anxiety Disorder – Depression, Anxiety and Stress Scale - Revised Impact of Event Scale*

* * * * *

INTRODUCTION

The coronavirus disease of 2019 (COVID-19), which was caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in the Wuhan City of Hubei region of China. The first confirmed cases were reported on December 31st, 2019 (Wang et al. 2020, Wilson et al. 2020). The COVID-19 pandemic has officially affected the 190 countries listed by United Nations (UN) and caused a substantial number of infections and deaths, leading to panic and mental stress in populations across the world (Huang & Zhao 2020a). Widespread spread of an infectious disease such as COVID-19 has been shown to be associated with psychological distress and symptoms of mental illness (Bao et al. 2020, Fanaj & Mustafa 2021).

Psychiatric symptoms including post-traumatic stress disorder, anxiety disorder, and depression have been previously reported during and after the SARS epidemic caused by SARS-CoV-1 (severe acute respiratory syndrome coronavirus 1), which emerged in Foshan City of Guangdong Region of China on November 16th, 2002. It has been demonstrated that outbreakslead to an increase in anxiety-related symptoms in the general population (Su et al. 2007). As demonstrated in the studies conducted in relation to the SARS epidemic, studies conducted on the effects of COVID-19 pandemic have also demonstrated both direct or indirect negative effects of the COVID-19 pandemic on the general mental health having led to an increase in depression and anxiety symptoms (Vindegaard & Benros 2020, He et al. 2021). It has been determined that one-third of the total population showed symptoms of anxiety disorder during the COVID-19 pandemic (Huang & Zhao 2020b).

In a study conducted in Ireland, the effect of the restrictions imposed due to COVID-19 pandemic on individuals, who were previously treated with the diagnosis of anxiety disorder, was examined, and it was found that the anxiety symptoms increased minimally in these patients during the pandemic period compared to the pre-pandemic period (Plunkett et al. 2020). In view of the foregoing, it is aimed with this study to investigate the effects of the COVID-19 pandemic on the patients, who have been receiving treatment with the diagnosis of Generalized Anxiety Disorder (GAD) and were in remission, and on the healthy control subjects, based on the hypothesis that patients, who are under treatment with the diagnosis of GAD and in remission may have different anxiety, depression, stress and trauma-related stress responses to the COVID-19 pandemic process compared to the healthy control subjects.

SUBJECTS AND METHOD

The ethics committee approval (Decision No. 01/11 dated 14/01/2021) required to conduct the study was obtained from the Erzincan Binali Yıldırım University Clinical Research Ethics Committee. The patients and healthy volunteers included in this study were informed about the purpose of the study, and their written consents were obtained prior to the study. They were informed that they can refuse participation or withdraw from the research at any stage of the research, and they were assured that the research data would be kept confidential.

The patient group of the study consisted of 81 patients, who were between the ages of 18 and 65 at the time of the study, who were diagnosed with GAD prior to the COVID-19 pandemic period, who applied to the psychiatry outpatient clinic of Erzincan Binali Yıldırım University Mengücek Gazi Training and Research Hospital, who were indicated by a psychiatrist to be in remission for at least 6 months as of the time of the study, and who voluntarily agreed to participate in the study. The exclusion criteria were determined as having any physical diseases that may cause hearing and speech disorders to the extent that they may prevent responding to questionnaires and scales administered within the scope of the study, having been diagnosed by any psychiatric disease other than GAD, presence of mental retardation and illiteracy. Additionally, 80 individuals who had sociodemographic characteristics that match the patients included in the patient group in terms of age and gender and who voluntarily agreed to participate in the study were included in the study as the control group. All participants were evaluated by a psychiatrist and administered a semi-structured interview form addressing their clinical-sociodemographic characteristics, in addition to the short form of the Depression Anxiety and Stress Scale (DASS-21) and the Revised Impact of Event Scale (IES-R).

The Questionnaire and the Scales Administered to the Participants

Sociodemographic Questionnaire

The sociodemographic questionnaire administered to the participants included in this study was a semi-structured interview form designed to obtain general information about the participants. The questions included in the questionnaire addressed both sociodemographic and clinical characteristics of the participants such as their age, gender, marital status, educational status, status of having a chronic disease and status of having a psychiatric disease, in addition to the changes on the time they spent at home, social media usage time and the workload as a result of the pandemic situation.

Depression Anxiety and Stress Scale-Short Form (DASS-21)

The original Depression Anxiety and Stress Scale (DASS-42) was developed by Lovibond et al. (1995) as a Likert-type scale consisting of 42 items. The said scale was downsized to a new scale (DASS-21) that consist of only 21 items by Brown et al. (1997), who demonstrated that this new shorter version of DASS-42 can be used to obtain the same outcome that was originally intended with DASS-42. The validity and reliability studies of the Turkish version of DASS-21 were carried out by Yıldırım et al. (2018). DASS-21 includes 3 subscales, that is, depression, anxiety and stress, each of which includes 7 questions. Four answer choices that range from 0 ("did not apply to me at all") to 3 ("applied to me very much or most of the time") are provided in each question to choose from. Each question is assigned a score between 0 and 3 based on the answer choice marked by the participant. Scores obtained from each sub-scale are calculated by adding up the scores assigned to each question included in the respective scale, whereas the overall scale score is calculated by summing up the scores obtained from each sub-scale. Accordingly, sub-scale scores range from 0 to 21 and total scale score ranges from 0 to 63. The higher the scores the more severe the depression, anxiety and stress.

Revised Impact of Event Scale (IES-R)

The IES-R is a 22-item self-report Likert-type scale that assesses subjective distress caused by traumatic events based on the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th edition) criteria. The original Impact of Event Scale (IES) was developed by Horowitz et al. (1979) as a 15-item scale, whereas the IES-R scale was developed by Weiss and Marmar (1997) to also include hyperarousal sub-scale, which was demonstrated to have high internal consistency with the other two sub-scales. The IES-R scale includes 3 sub-scales, that is, intrusion, avoidance and hyperarousal, which include 8, 8 and 6 items, respectively. The validity and reliability studies of the Turkish version of IES-R were carried out by Corapcioglu et al. (2006). Items included in IES-R scale are rated on a 5-point scale ranging from 0 ("not at all") to 4 ("extremely") based on the extent the symptoms in question have been experienced in the last 7 days. Hence, the total IES-R score ranges from 0 to 88. The higher the score the higher the traumatic stress.

The statistical analyses were conducted using the SPSS 22.0 (IBM Statistical Package for the Social Sciences Version 22.0) software package. Kolmogorov-Smirnov test was used to check the conformance of the resarch data to normal distribution. Mann-Whitney U test was used for statistical analysis and chi-squared test was used for independent samples. Spearman correlation test was used in the correlation analysis. Probability (p) values of <0.05 were deemed to indicate statistical significance.

RESULTS

Certain sociodemographic and clinical parameters that were not intended to be investigated within the scope of this study, yet were deemed to be likely to affect the outcome of the study as confounding variables, were

tried to be ruled out by choosing participants of matching characteristics. The patient and control groups created as such were compared using the chi-square test, and no statistically significant difference was found between the two groups in terms of demographic and clinical characteristics such as age, gender, educational status, marital status and status of having a chronic disease, as well as time spent at home, daily social media usage times and changes in the workload during the pandemic period (Table 1).

In addition to the dimensions assessed by the IES-R Scale, the dimensions assessed by the DASS-21 scale, that is, depression, anxiety and stress as the most common emotional reactions in traumatic processes, were also examined. The correlation between these parameters and the sub-scales of the IES-R was examined (Table 2).

The analysis of the results given in Table 2 revealed that the total impact of event (pandemic) scale scores were moderately correlated with both depression (r=0.66, p<0.01) and stress (r=0.68, p<0.01) in the positive direction and highly correlated with anxiety also in the positive direction (r=0.73, p<0.01), that the IES-R intrusion sub-scale scores were moderately correlated with both depression (r=0.67, p<0.01) and stress (r=0.68, p<0.01) in the positive direction and highly correlated with anxiety also in the positive direction (r=0.72, p<0.01), that the IES-R avoidance sub-scale scores were moderately correlated with depression (r=0.38, p<0.01), stress (r=0.38, p<0.01) and anxiety (r=0.44, p<0.01) in the positive direction, and that the IES-R hyperarousal sub-scale scores were moderately correlated with depression (r=0.69, p<0.01) and highly correlated with both stress (r=0.73, p<0.01) and anxiety (r=0.75, p<0.01) in the positive direction. As a result, all sub-scales addressed within the scope of this study were found to have a statistically significant correlation with one another.

Table 1. Sociodemographic and Clinical Characteristics of the Patient and Control Groups

Variables	Control Group		Patient Group		χ^2	P
Sub-Groups	n	%	n	%		
Gender					0.017	0.860
Female	59	73.8	58	71.6		
Male	21	26.3	23	28.4		
Educational Status					7.841	0.098
Elementary School	13	16.3	28	34.6		
Middle School	9	11.3	8	9.9		
High School	28	35.0	20	24.7		
Associate's degree	7	8.8	8	9.9		
Undergraduate degree	23	28.7	17	21.0		
Age Group					3.654	0.455
18 to 30	27	33.8	20	24.7		
31 to 40	16	20.0	25	30.9		
41 to 50	20	25.0	18	22.2		
51 to 60	14	17.5	13	16.0		
61 and above	3	3.8	5	6.2		
Marital Status					0.050	0.823
Married	56	70.0	59	72.8		
Single/Divorced	24	30.0	22	27.2		
Chronic Disease(s)					1.489	0.222
Yes	17	21.3	24	29.6		
No	63	78.8	57	70.4		
Time Spent at Home in a Day*					4.748	0.191
8 to 12 hours	9	11.3	6	7.4		
13 to 16 hours	6	7.5	11	13.6		
17 to 20 hours	5	6.3	11	13.6		
21 to 24 hours	60	75.0	53	65.4		
Daily Social Media Usage Time*					7.308	0.063
0 to 2 hours	34	42.5	50	61.8		
3 to 6 hours	28	35.0	19	23.5		
7 hours and above	18	22.6	12	14.8		
Workload*					2.232	0.328
Decreased	25	31.3	17	21.0		
No change	31	38.8	35	43.2		
Increased	24	30.0	29	35.8		

Table 2. The relationship between the sub-scales of DASS-21 and the IES-R scale and its sub-scales

Sub-dimensions	Stress	Anxiety	Depression	Intrusion	Avoidance	Hyperarousal	Total IES-R
Stress	1						
Anxiety	0.817	1					
Depression	0.783	0.704	1				
Intrusion	0.684	0.717	0.665	1			
Avoidance	0.376	0.435	0.381	0.514	1		
Hyperarousal	0.729	0.751	0.692	0.869	0.530	1	
Total IES-R	0.682	0.726	0.663	0.916	0.784	0.913	1

Table 3. Comparison of the DASS-21 and IES-R Scale Scores of the GAD Patients and Healthy Control Subjects

Sub-dimensions	Study Groups	N	$\overline{x}_{sira}$	$\sum_{sira}$	U	z	p
Depression	Control Group	80	75.36	6029.00	2789.000	-1.530	0.126
	Patient Group	81	86.57	7012.00			
Anxiety	Control Group	80	69.16	5532.50	2292.500	-3.223	0.001
	Patient Group	81	92.70	7508.50			
Stress	Control Group	80	79.90	6392.00	3152.000	-0.299	0.765
	Patient Group	81	82.09	6649.00			
Intrusion	Control Group	80	81.15	6492.00	3228.000	-0.041	0.968
	Patient Group	81	80.85	6549.00			
Avoidance	Control Group	80	80.28	6422.50	3182.500	-0.195	0.846
	Patient Group	81	81.71	6618.50			
Hyperarousal	Control Group	80	77.38	6190.00	2950.000	-0.985	0.325
	Patient Group	81	84.58	6851.00			
Total IES-R Score	Control Group	80	78.76	6300.50	3060.500	-0.607	0.544
	Patient Group	81	83.22	6740.50			

The main research question posed was to determine whether there was a difference between the psychological impact of the COVID-19 pandemic process on GAD patients, who were under treatment and in remission for a while, and on the healthy volunteers. Mann Whitney-U analysis was performed to determine whether there was such a difference as hypothesized using the data obtained by DASS-21 and IES-R scales (Table 3).

The analysis of the results given in Table 3 revealed that the mean rank of GAD patients was significantly higher than the healthy control subjects in the DASS-21 anxiety sub-scale (U=2292.5, p=0.001) and that the mean rank of GAD patients was higher than the healthy control subjects in the DASS-21 depression sub-scale, albeit not statistically significantly (U=2789. p=0.126). Similarly, there were some differences between the mean ranks of the GAD patients and the healthy control subjects in the DASS-21 stress sub-scale, IES-R scale and its sub-scales, however these differences were not significant.

DISCUSSION

It has been demonstrated in the literature that the psychological impact of COVID-19 was higher and the COVID-19-related anxiety and depressive symptoms were more severe in younger patients (Huang & Zhao 2020a). There is also scientific evidence that individuals over the age of 60 have lower levels of anxiety, depression and stress compared to the individuals in other age groups (Ozamiz-Etxebarria et al. 2020). In addition, it has been also shown that anxiety and depression symptoms were more severe in women during the COVID-19 pandemic (Gao et al. 2020, González-Sanguino et al. 2020, Özdin & Bayrak Özdin 2020) Furthermore, being married has been shown to be among the risk factors associated with the development of anxiety during the COVID-19 pandemic period (Santabárbara et al. 2021). Moreover, it was stated in a review that living alone, low educational level and presence of a medical illness are among the risk factors associated with the development of depression and anxiety during the COVID-19 pandemic period (Vindegaard & Benros 2020). There are studies which reported higher depression, anxiety and stress scores in the presence of chronic disease (Ozamiz-Etxebarria et al. 2020, Özdin & Bayrak Özdin 2020). It has been also revealed that differences in education level affect chronic anxiety (Liu et al. 2020). In view of the foregoing, certain sociodemographic and clinical parameters such as age, gender, marital status, educational status, and status of having chronic illness, which were not intended to be investigated within the scope of this study, yet were deemed to be likely to affect the outcome of the study as confounding variables, were tried to be ruled out by choosing participants of matching characteristics in both patient and control groups. In this way, it was aimed to minimize the effect of sociodemographic and clinical variables on the psychological parameters assessed within the scope of this study.

On the other hand, it has been demonstrated that the increases in the workload during the pandemic period is associated with increased anxiety level (Şanlı & Kefeli 2021, Mosheva et al. 2020). Additionally, there are studies that reported that the excessive use of social media may be associated with anxiety and depression (Woods & Scott 2016, Şanlı & Kefeli 2021). It has been also shown that there is a relationship between the prolonged stays at home during the pandemic period and the symptoms of anxiety, depression and stress (Ozamiz-Etxebarria et al. 2020). In comparison, the fact that no statistically significant difference was found between the patient and control groups included in this study in terms of the aforementioned parameters has been expedient in that these parameters could be ruled out as confounding variables.

Taking into consideration that the sub-dimensions of DASS-21, that is, depression, anxiety, and stress, are parameters that can be affected by many different factors, the relationship of these parameters with IES-R, which was used to specifically assess the psychological impact of the pandemic, and its sub-scales was investigated in this study. As a consequence, positive correlations were found between the total IES-R score and the scores obtained from the sub-scales of IES-R and the scores obtained from the DASS-21 scale. As a matter of fact, it has been reported in the literature that the COVID-19 pandemic is associated with traumatic stress symptoms, and that IES-R was used to assess these symptoms (Vanaken et al. 2020).

The prevalence of anxiety disorders has been shown to be high in the Chinese population during the COVID-19 pandemic period. It has been reported that the pandemic has caused anxiety-related symptoms in one-third of the population, depressive symptoms in about one-fifth of the population, and led to greater psychological stress due to the uncertainties associated with the outcome of the pandemic (Huang and Zhao 2020a). In addition to the symptoms of anxiety and depression (16-28%), symptoms of stress have also been shown to be among the common psychological reactions manifested in response to the COVID-19 pandemic (Rajkumar 2020). In a study conducted in Hong Kong, the prevalences of depression and anxiety, which were 10.7% and 4.1% respectively, in the pre-pandemic period, were found to have increased during the pandemic period to 19.8% and 14.0%, respectively (Choi at al. 2020).

Information on the impact of the COVID-19 pandemic in people with psychiatric illness is very limited (Rajkumar 2020). Nevertheless, the results of the few studies conducted in respect thereof revealed that the depression and anxiety scores of those with existing psychiatric disease(s) or a history of psychiatric disease(s) were significantly higher compared to those without any psychiatric disease or a history of psychiatric disease (Özdin & Bayrak Özdin 2020). It has also been demonstrated that individuals with anxiety disorders have a high risk of developing post-traumatic stress disorder (Ozen at al. 2018). Additionally, it has been reported that individuals with pre-existing mental disorders may have a higher risk of relapse due to the stress associated with the COVID-19 pandemic, and that their psychiatric symptoms may worsen (Yao at al. 2020, Zhou et al. 2020).

On the other hand, there are also studies in which it was found that COVID-19 did not have any effect on the anxiety and mood symptoms of the patients with comorbid psychiatric disease than those without any psychiatric disease. It was concluded in these studies that the presence of any comorbid psychiatric disease was not associated with additional symptomatology or deterioration. The only effect that was deemed worthy of note was the minimal increase observed only in the subjective anxiety symptoms of those with a previous diagnosis of anxiety disorder, which was identified as a moderate effect of COVID-19 (Plunkett et al. 2020).

In comparison, in this study, no significant difference was found between the patients with a diagnosis of GAD and the healthy control subjects during the pandemic period in terms of symptoms of depression and stress as well as trauma-related stress responses such as intrusion, avoidance, and hyperarousal. It was only in terms of anxiety symptoms that the patient group was found to be significantly higher than the control group. This result can be generally interpreted that the two groups reacted similarly to COVID-19 in terms of depression, stress and trauma-related stress responses. The fact that the patient group was found not to have been affected more by COVID-19 as compared to the control group can be attributed to the fact that the GAD patients were under treatment and in remission. On the other hand, the high level of anxiety symptoms observed in the patient group can be explained by their pre-existing predisposition to anxiety, as pointed out in the literature.

CONCLUSION

The findings of this study revealed that the depression, stress and trauma-related stress responses of GAD patients have not differred during the COVID-19 pandemic period, whereas that their anxiety levels have increased significantly, as compared to the healthy control subjects. In this context, it is recommended that the clinicians, while making a diagnosis and deciding on the treatment, take into consideration that the pandemic may lead to an increase in the symptoms of individuals diagnosed with generalized anxiety disorder, symptoms of anxiety in particular. Moreover, further studies to be conducted with larger populations would contribute more to the literature on this subject.

Acknowledgements: None.

Conflict of interest: None to declare.

Contribution of individual authors:

Mehmet Celal Kefeli: study design, data collection, first draft, statistical analysis.

Mustafa Akkuş: study design, data collection.

All authors approved the final manuscript.

References

1. *Bao Y, Sun Y, Meng S, Shi J, Lu L: 2019-nCoV epidemic: address mental health care to empower society. The Lancet 2020; 395:e37-e38*
2. *Brown TA, Chorpita BF, Korotitsch W, Barlow DH: Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. Behaviour research and therapy 1997; 35:79-89*
3. *Choi EPH, Hui BPH, Wan EYF: Depression and anxiety in Hong Kong during COVID-19. International journal of environmental Research and Public Health 2020; 17:3740. doi:10.3390/ijerph17103740*
4. *Çorapçıoğlu A, Yargıç İ, Geyran P, Kocabaşoğlu N: Validity and reliability of Turkish version of "impact of event scale-revised"(IES-R). Yeni Symposium 2006; pp. 14-22*
5. *Fanaj N, Mustafa S: Depression Measured by PHQ-9 in Kosovo during the COVID-19 Outbreak: An Online Survey. Psychiatr Danub 2021; 33 95-100*
6. *Gao J, Zheng P, Jia Y, Chen H, Mao Y, Chen S et al.: Mental health problems and social media exposure during COVID-19 outbreak. Plos One 2020; 15. doi:10.1371/journal.pone.0231924*
7. *González-Sanguino C, Ausín B, Castellanos MÁ, Saiz J, López-Gómez A, Ugidos C et al.: Mental health consequences during the initial stage of the 2020 Coronavirus pandemic (COVID-19) in Spain. Brain, Behavior, and Immunity 2020; 87:172-6*
8. *He Y, Yu R, Ren J: The Correlation between Psychiatric Disorders and COVID-19: A Narrative Review. Psychiatr Danub 2021; 33:76-85*
9. *Huang Y, Zhao N: Chinese mental health burden during the COVID-19 pandemic. Asian Journal of Psychiatry 2020a: 51. DOI: 10.1016/j.ajp.2020.102052*
10. *Huang Y, Zhao N: Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. Psychiatry Research 2020b. doi:10.1016/j.psychres.2020.112954*
11. *Liu X, Luo W-T, Li Y, Li C-N, Hong Z-S, Chen H-L et al.: Psychological status and behavior changes of the public during the COVID-19 epidemic in China. Infectious Diseases of Poverty 2020; 9:1-11*
12. *Lovibond PF, Lovibond SH: The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behaviour Research and Therapy 1995; 33:335-43*
13. *Mosheva M, Hertz-Palmor N, Dorman Ilan S, Matalon N, Pessach IM, Afek A et al.: Anxiety, pandemic-related stress and resilience among physicians during the COVID-19 pandemic. Depression and Anxiety 2020; 37:965-71*
14. *Ozamiz-Etxebarria N, Dosil-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. Cadernos de Saude Publica 2020; 36. doi:10.1590/0102-311X00054020*
15. *Ozen S, Dalbudak E, Topcu M: The relationship of post-traumatic stress disorder with childhood traumas, personality characteristics, depression and anxiety symptoms in patients with diagnosis of mixed anxiety-depression disorder. Psychiatr Danub 2018; 30:340-7*
16. *Özdin S, Bayrak Özdin Ş: Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. International Journal of Social Psychiatry 2020; 66:504-11*
17. *Plunkett R, Costello S, McGovern M, McDonald C, Hallahan B: Impact of the COVID-19 pandemic on patients with pre-existing anxiety disorders attending secondary care. Irish Journal of Psychological Medicine 2020; 1-9. doi:10.1017/ipm.2020.75*
18. *Rajkumar RP: COVID-19 and mental health: A review of the existing literature. Asian Journal of Psychiatry 2020; 52. doi:10.1016/j.ajp.2020.102066*
19. *Santabárbara J, Lasheras I, Lipnicki DM, Bueno-Notivol J, Pérez-Moreno M, López-Antón R et al.: Prevalence of anxiety in the COVID-19 pandemic: An updated meta-analysis of community-based studies. Progress in Neuro-Psychopharmacology and Biological Psychiatry 2021: 109. doi:10.1016/j.pnpbp.2020.110207*
20. *Su TP, Lien TC, Yang CY, Su YL, Wang JH, Tsai SL et al.: Prevalence of psychiatric morbidity and psychological adaptation of the nurses in a structured SARS caring unit during outbreak: a prospective and periodic assessment study in Taiwan. Journal of Psychiatric Research 2007: 41:119-30*
21. *Şanlı E, Kefeli MC: Research of the factors affecting depression, anxiety and stress levels of individuals in the COVID-19 pandemic process. ASEAN Journal of Psychiatry 2021; 22:1-13*
22. *Vanaken L, Scheveneels S, Belmans E, Hermans D: Validation of the impact of event scale with modifications for COVID-19 (IES-COVID19). Frontiers in Psychiatry 2020; 11:738. doi:10.3389/fpsyt.2020.00738*
23. *Vindegaard N, Benros ME: COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. Brain, Behavior, and Immunity 2020; 89:531-42*
24. *Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J et al.: Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus–infected pneumonia in Wuhan, China. Jama 2020; 323:1061-9*
25. *Wilson M, Coulden R, Low G: COVID-19-related cardiac involvement and potential implications for cardiothoracic imaging. Clinical Radiology 2020; 75:476. doi: 10.1016/j.crad.2020.04.004*
26. *Woods HC, Scott H: # Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. Journal of adolescence 2016; 51:41-9*
27. *Yao H, Chen JH, Xu YF: Patients with mental health disorders in the COVID-19 epidemic. 2020. doi:10.1016/S2215-0366(20)30090-0*
28. *Yıldırım A, Boysan M, Kefeli MC: Psychometric properties of the Turkish version of the Depression Anxiety Stress Scale-21 (DASS-21). British Journal of Guidance & Counselling 2018; 46:582-95*
29. *Zhou J, Liu L, Xue P, Yang X, Tang X: Mental health response to the COVID-19 outbreak in China. American Journal of Psychiatry 2020; 177:574-5*

Correspondence:
Mehmet Celal Kefeli, MD
Department of Psychiatry University of Erzincan Binali Yıldırım, Mengucek Gazi Education and Research Hospital Erzincan, Erzincan, Turkey
E-mail: psikobilim24@gmail.com