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Evaluation of psychiatric symptoms in patients diagnosed with fibromyalgia during COVID-19 pandemic: a cross-sectional study

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ABSTRACT

Objectives: Our aim was to assess depression, anxiety, trauma symptoms and sleep problems in patients with fibromyalgia during the COVID-19 pandemic

Methods: This study was conducted face-to-face with 62 SARS-CoV-2 negative fibromyalgia patients. Sociodemographic and Clinical Data Form, Hospital Anxiety and Depression Scale (HADS), Pittsburgh Sleep Quality Index (PSQI), Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5), Coronavirus Anxiety Scale (CAS), Obsession with COVID-19 Scale (OCS), the American College of Rheumatology (ACR) Preliminary Diagnostic Criteria for Fibromyalgia 2010 were applied to the subjects.

Results: Patient mean scores on the HAD Depression and HAD Anxiety scales were 8.42 ± 3.73 and 9.58 ± 3.86, respectively. The patients' PSQI and PCL-5 scores were 8.10 ± 3.49 and 33.90 ± 16.91, respectively. While the CAS score average was found to be 1.13 ± 2.79, the OCS score average was found to be 1.81 ± 2.27. The mean scores for the Widespread Pain Index (WPI), Symptom Severity Scale (SSS), and Visual Analog Scale (VAS) were 9.90 ± 3.03, 7.84 ± 2.07 and 7.37 ± 1.81, respectively. Poor sleep quality was identified in 75.8% and a risk of post-traumatic stress symptoms in 16.1%. SSS scores were found to be higher in those at risk of depression than those without (U=265, $p = 0.003$). OCS (U=256, $p = 0.007$), SSS (U=203.5, $p = 0.001$), VAS (U=263.5, $p = 0.012$), PCL-5 (U=144, $p = 0.001$) scores were found to be higher in those at risk of anxiety than those without.

Conclusions: It was observed that depression was a predictor of fibromyalgia symptom severity and anxiety was a predictor of obsession with coronavirus, fibromyalgia symptom severity, VAS, and post-traumatic stress symptoms.

Keywords: Fibromyalgia, depression, anxiety, COVID-19

The world is struggling with the COVID-19 pandemic and its aftermath caused by the Sars-CoV-2 coronavirus, which first emerged in Wuhan, China in 2019. Post-traumatic stress disorder, depression and anxiety disorders have been known to have been detected in infected individuals during the SARS-Cov-1 epidemic. A mental health review during the SARS-CoV-2 pandemic found that post-traumatic stress disorder and depressive symptoms were high in COVID-19 patients and symptoms have worsened in those with psychiatric symptoms; It has been shown that in the general population, mental well-being was

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low and the severity of anxiety and depression symptoms was high (1). Post-traumatic stress symptoms are positively associated with female gender and subjective sleep quality during the COVID-19 pandemic [1].

Fibromyalgia (FM) is one of the most common causes of widespread chronic pain and its prevalence reaches 2-3% worldwide. Although pain is one of its main distinguishing features, it is a multi-symptomatic syndrome that includes fatigue, sleep disorders, autonomic disorders, cognitive dysfunction, hypersensitivity to external stimuli, somatic symptoms, and psychiatric disorders. Stress is very important to the onset or worsening of the syndrome in many people with FM. Psychologically, patients with FM mostly have negative emotions characterized by a general state of stress. As a result of this negative mental state, patients with fibromyalgia can develop depression and anxiety disorders. While the lifetime prevalence of anxiety disorders is 60%, the prevalence of depression is between 14% and 36%, which is significantly higher than in the rest of the population [2].

Sleep problems can occur in FM syndrome, characterized by all kinds of insomnia and frequent awakenings. Non-restorative sleep predominates. Even with normal sleep duration and quality, patients complain that they do not get enough rest from sleep. The presence of chronic widespread pain affects sleep quality in patients with FM. There is also a bidirectional relationship between sleep disorders and depression and anxiety disorders [3].

The relationship between FM and trauma has been demonstrated in many patients [4]. Patients with FM may have reduced psychological resilience and coping skills. A low level of resilience is a risk factor for the development of post-traumatic stress disorder, anxiety, and mood disorders [5].

Salaffi *et al*. [6] studied patients with FM who had or did not have COVID-19 infection. In this study, FM-associated symptoms (distant pain, sleep disturbances, fatigue, functional symptoms) and quality of life of the patients were evaluated. The scores of FM patients with COVID-19 infection were statistically higher on all scales [6].

In this study, we aimed to determine depression symptoms, anxiety symptoms, sleep quality, trauma symptoms, anxiety, and obsession levels for the COVID-19 pandemic in patients with FM during the COVID-19 pandemic. In addition, it was also examined whether there was a significant difference between patients diagnosed with FM with and without depression and anxiety disorders in relation to the variables used in the study.

METHODS

Study Design and Panels

This study was conducted face-to-face involving 62 SARS-CoV-2 negative FM patients treated and followed-up in the Department of Physiotherapy and Rehabilitation in a third-level hospital. The research team consisted of a psychiatrist and a specialist in physiotherapy and rehabilitation. All participants were at least 18 years old and gave written informed consent. The study protocol was approved by the ethics committee. (Date: 07/12/2019, No.: 2020/10-12).

Sociodemographic and Clinical Data Form, Hospital Anxiety and Depression Scale (HADS), Pittsburgh Sleep Quality Index (PSQI), Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5), Coronavirus Anxiety Scale (CAS), Obsession with COVID-19 Scale (OCS), the American College of Rheumatology (ACR) Preliminary Diagnostic Criteria for Fibromyalgia 2010 were applied to the subjects.

Study Assessments

The socio-demographic and clinical data form collects information on the following areas: gender, age, marital status, level of education, work status, monthly income, smoking status, and alcohol consumption. The Hospital Anxiety and Depression Scale is used to determine the risk of anxiety and depression, as well as to measure the severity and change in severity of anxiety and depression in a given patient [7]. It has two subscales, one for depression and one for anxiety. The reliability and validity study of the Turkish version has been completed [8]. The cut-off scores for the Anxiety and Depression subscales of the Turkish version were set at 10 and 7 points, respectively. In this study, Cronbach's alpha value for the 14 items was 0.790.

The Pittsburgh Sleep Quality Index (PSQI), developed by Buysse *et al*. [9]) assesses sleep quality through a standardized questionnaire that is easy to understand and answer, distinguishing between good and bad sleepers [9]. It evaluates sleep quality over 1

month. The PSQI components are as follows: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The sum of these 7 components forms the global PSQI score. A global PSQI score of 5 is consistent with poor sleep quality. The reliability and validity study of the Turkish version has been completed [10].

PCL-DSM-5 (PCL-5): It is a self-report scale consisting of 20 items rated from 0 to 4, out of a maximum of 80 [11]. PCL-5 assesses PTSD symptoms explained in 4 clusters (reexperiencing, avoidance, negative changes in cognition and mood, hyperarousal) in The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). The PCL-5 can be used to monitor symptom changes, screen for PTSD, or provide a preliminary PTSD diagnosis. The reliability and validity study of the Turkish version was completed and the cut-off score of 47 points for the PTSD diagnosis was established [12].

CAS is a 5-point scale with scores between 0 and 4. The cut-off score of 9 distinguishes dysfunctional anxiety and non-anxiety in people with a COVID-19 infection [13]. The Turkish validity and reliability study of the scale was conducted but a cut-off score was not determined. The higher the score, the greater the anxiety associated with COVID-19 [14]. In this study, Cronbach's alpha value for the 5 items was 0.914.

OCS is a 4-point scale ranging from 0 to 4. The cut-off score of 7 distinguishes non-functional COVID-19 thought patterns from those without such patterns [15]. The Turkish validity and reliability study of the scale was conducted but a cut-off score was not determined. The higher the score, the greater the obsession related to COVID-19 [14]. In this study, Cronbach's alpha value for the 5 items was 0.640.

The ACR 2010 consists of 2 scales, the Widespread Pain Index (WPI) and the Symptom Severity (SS) scale. The widely used Pain Index Questionnaire is designed to determine if you experience pain or tenderness in the shoulder girdle, hip, jaw, upper back, lower back, upper arm, thigh, chest, neck, abdomen, forearm and in the lower leg had last week. The purpose of the Symptom Scale Questionnaire is to identify the severity of fatigue, difficulty thinking or remembering, and waking up tired (unrefreshed) in the previous week by a rating from 0 to 3 [16]. Patients with symptoms for at least 3 months with a WPI 7 and SS score 5 or WPI 3-6 and SS scale score 9 and without a disorder that would otherwise explain the pain were considered to have met the ACR 2010 criteria [17].

Statistical Analysis

The data obtained in the study was entered into the database created in the program SPSS (Statistical Package For Social Sciences) 18.0 and statistical evaluations were carried out with the same program. The agreement of continuous variables with the normal distribution was examined. As a result of both sample size, graphical examination, and normality tests, it was decided that the conditions for normality agreement were not met for these variables, and nonparametric methods were preferred for the comparisons of independent groups. Independent group comparisons were performed using the Mann-Whitney U test. Median

Table 1. FM Patients' demographics and clinical characteristics

	n	%
Gender		
Male	6	9.7
Female	56	90.3
Marital status		
Single	14	22.6
Married	48	77.4
Education level		
No Education	12	19.4
Primary school	17	27.4
High school	10	16.1
Bachelor's degree	23	37.1
Working status		
Not working	32	51.6
Working	30	48.4
Income status		
Low	6	9.7
Middle	38	61.3
High	18	29.0
Smoking status		
Yes	12	19.4
No	40	81.6
Alcohol use		
Yes	2	3.2
No	60	96.8
Past psychiatric treatment		
Yes	47	75.8
No	15	24.2

FM = Fibromyalgia

minimum and maximum values were presented as descriptive statistics. Categorical variables were crosstabulated as frequencies and percentages and their distributions compared using chi-square test methods. The relationship between numerical variables was examined using the correlation method. In all statistical comparison tests, the margin of error for the first type was determined to be = 0.05 and it was tested with two tails. If the p-value was less than 0.05, the difference between the groups was considered statistically significant.

RESULTS

FM Patients' Demographics and Clinical Characteristics

Fifty-six (90.3%) participants were female patients. The mean age was 42.44 ± 9.66 years. Forty-seven (75.8%) patients stated that they had received psychiatric treatment for depression and anxiety disorders in the past. Additional sociodemographic and clinical data are summarized in Table 1.

The Scores of the Patients from the Scales

Patient mean scores on the HAD Depression and HAD Anxiety scales were 8.42 ± 3.73 and 9.58 ± 3.86, respectively (Table 2). The patients' PSQI and PCL-5 scores were 8.10 ± 3.49 and 33.90 ± 16.91, respectively. While the CAS score average was found to be 1.13 ± 2.79, the OCS score average was found to be 1.81 ± 2.27. WPI, SSS, and VAS score averages were found to be 9.90 ± 3.03, 7.84 ± 2.07 and 7.37 ± 1.81, respectively (see Table 2).

Evaluation of FM Patients According to the Cut-off Values of the Scales

According to HADS, patients with and without risk of depression and anxiety were assessed for poor sleep quality and PTSD using the chi-square method. A significant difference was only found with regard to an anxiety disorder ($X^2 = 5.846$; $p = 0.03$) (Table 3). According to the HAD Anxiety Scale, patients with or without risk of an anxiety disorder were assessed for depression, poor sleep quality, and PTSD using the chi-square method. A significant difference was only found for anxiety PTSD ($X^2=11.327$; $p = 0.002$) (see Table 3).

No significant difference was found when the sociodemographic and clinical characteristics of the pa-

Table 2. The scores of the patients from the scales

	Valid (n)	Mean	Standard Deviation	Minimum	Maximum		Frequency (n)	Percent (%)
HAD Depression	62	8.42	3.73	2.00	18.00	> 7	34	54.8
						≤ 7	28	45.2
HAD Anxiety	62	9.58	3.86	0.00	19.00	> 10	21	33.9
						≤ 10	41	66.1
PSQI Score	62	8.10	3.49	2.00	15.00	> 5	47	75.8
						≤ 5	15	24.2
PCL-5	62	33.90	16.91	7.00	7.00	> 47	10	16.1
						≤ 47	52	83.9
CAS Score	62	1.13	2.79	0.00	13.00			
OCS Score	62	1.81	2.27	0.00	9.00			
WPI	62	9.90	3.03	5.00	19.00			
SSS	62	7.84	2.07	5.00	12.00			
VAS	62	7.37	1.81	3.00	10.00			

HADS = Hospital Anxiety and Depression Scale, PSQI = Pittsburgh Sleep Quality Index, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5, CAS = Coronavirus Anxiety Scale, OCS = Obsession with COVID-19 Scale, WPI = Widespread pain index, SSS = Symptom severity score, VAS = Visual analog scale

Table 3. Evaluation of FM patients according to the cut-off valuesof the scales

		HAD Depression			
		> 7	≤ 7	X^2	*p* value
HAD Anxiety	> 10	16 (76.2%)	5 (23.8%)	5,846	**0.030**
	≤ 10	18 (43.9%)	23 (56.1%)		
PSQI	> 5	29 (61.7%)	18 (38.3%)	2,638	0.104
	≤ 5	5 (33.3%)	10 (66.7%)		
PCL-5	> 47	8 (80.0%)	2 (20.0%)	3,048	0.097
	≤ 47	26 (50.0%)	26 (50.0%)		
		HAD Anxiety			
		> 10	≤ 10	X^2	*p* value
PCL-5	> 47	8 (80.0%)	2 (20.0%)	11.327	**0.002**
	≤ 47	13 (25.0%)	39 (75.0%)		
PSQI	> 5	18 (38.3%)	29 (61.7%)	1.700	0.322
	≤ 5	3 (20.0%)	12 (80.0%)		

FM = Fibromyalgia, HADS = Hospital Anxiety and Depression Scale, PSQI = Pittsburgh Sleep Quality Index, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5

tients were examined using the chi-square statistical method in relation to HAD depression, HAD anxiety and PSQI cut-off scores.

Comparison of Patients with FM in Terms of Depression, Anxiety, and Sleep Quality

In this study, patients were divided into groups according to the cutoff score of HADS and PSQI scales related to risk of depressive disorder, risk of anxiety disorder, and poor sleep quality, and these groups were compared according to CAS, OCS, WPI, SSS, VAS, PCL-5, and age variables (Table 4). The Mann-Whitney U test was used to compare group means because the group data were not normally distributed. As a result between the group with and without risk of depression and SSS (u = 268; p = 0.03); between the group with and without risk of anxiety and OCS (u = 256; p = 0.007), SSS (u = 203.5; p = 0.001), VAS (u = 263.5; p = 0.012), PCL-5 (u = 144; p = 0.001) a statistically significant difference was found between the group with and without poor sleep quality and SSS (u = 197.5; p = 0.01) (see Table 4).

Correlations between Variables of FM Patients

As a result of the correlation between the numerical values obtained from the scales applied to the patients, many statistically significant values were obtained (Table 5. Positive significant correlations were found between risk of depressive disorder and risk of anxiety disorder (r = 0.469; p = 0.001), poor sleep quality (r = 0.414; p = 0.001), FM symptom severity (r = 0.406; p = 0.001), VAS (r = 0.321; p = 0.011), between anxiety disorder risk and poor sleep quality (r = 0.349; p = 0.005), PTSD risk (r = 0.634; p = 0.001), CAS (r = 307; p = 0.015), OCS (r = 0.292; p = 0.021), FM symptom severity (r = 0.408; p = 0.001), VAS (r = 0.374; p = 0.003) and between poor sleep quality, FM symptom severity (r = 0.485; p = 0.001) and VAS (r = 0.274; p = 0.031) (see Table 5).

DISCUSSION

In this study, the risk of depression was found in 54.8% of FM patients and the risk of anxiety in 33.9%. In addition, the majority of FM patients (75.8%) were found to have poor sleep quality and 16.1% were at risk of PTSD.

The studies conducted found that the prevalence of lifelong depression in FM patients ranged from 13% to 48% (18, 19) and the prevalence of anxiety disorders ranged from 27% to 60% [20]. In addition,

Table 4. Comparison of FM patients according to HADS and PSQI scale cut-off scores

	HAD Depression								
	> 7				≤ 7				
	n	Med.	Min.	Max.	n	Med.	Min.	Max.	*p* value
CAS	34	0.00	0.00	13.00	28	0.00	0.00	8.00	0.943
OCS	34	1.00	0.00	9.00	28	1.00	0.00	8.00	0.736
WPI	34	10.00	5.00	19.00	28	9.00	7.00	18.00	0.328
SSS	34	8.00	5.00	12.00	28	7.00	5.00	11.00	**0.003**
VAS	34	8.00	4.00	10.00	28	7.00	3.00	10.00	0.056
PCL-5	34	35.50	9.00	70.00	28	26.50	7.00	76.00	0.063
Age	34	44.50	26.00	65.00	28	42.00	21.00	58.00	0.474
	HAD Anxiety								
	> 10				≤ 10				
	n	Med.	Min.	Max.	n	Med.	Min.	Max.	*p* value
CAS	21	0.00	0.00	13.00	41	0.00	0.00	8.00	0.114
OCS	21	2.00	0.00	9.00	41	1.00	0.00	8.00	**0.007**
WPI	21	9.00	5.00	19.00	41	9.00	7.00	18.00	0.210
SSS	21	9.00	6.00	12.00	41	7.00	5.00	11.00	**0.001**
VAS	21	8.00	4.00	10.00	41	7.00	3.00	10.00	**0.012**
PCL-5	21	46.00	22.00	76.00	41	25.00	7.00	62.00	**< 0.001**
Age	21	41.00	21.00	65.00	41	45.00	26.00	64.00	0,208
	PSQI								
	> 5				≤ 5				
	n	Med.	Min.	Max.	n	Med.	Min.	Max.	*p* value
CAS	47	0.00	0.00	13.00	15	0.00	0.00	10.00	0.408
OCS	47	1.00	0.00	9.00	15	1.00	0.00	9.00	0.418
WPI	47	9.00	5.00	19.00	15	11.00	6.00	18.00	0.210
SSS	47	8.00	5.00	12.00	15	6.00	5.00	11.00	**0.010**
VAS	47	8.00	3.00	10.00	15	7.00	4.00	10.00	0.12
PCL-5	47	33.00	7.00	76.00	15	36.00	8.00	70.00	0.616
Age	47	44.00	25.00	65.00	15	40.00	21.00	50.00	0.199

n = number of participants, med = median, max = maximum, min = minimum, FM = Fibromyalgia, HADS = Hospital Anxiety and Depression Scale, PSQI = Pittsburgh Sleep Quality Index, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5, CAS = Coronavirus Anxiety Scale, OCS = Obsession with COVID-19 Scale, WPI = Widespread pain index, SSS = Symptom severity score, VAS = Visual analog scale

one study has shown that most FM patients (70-90%) have poor sleep quality [21]. PTSD is one of the most important causes of anxiety in FM patients. In the studies conducted, it was found that the rate of patients who fully met the PTSD criteria varied between 3-57% [20, 22].

A review assessing the prevalence of depression and anxiety during the COVID-19 pandemic found a depression prevalence of 33.7% and an anxiety prevalence of 31.9% in the general population [23]. In a study evaluating the impact of the COVID-19 pandemic on sleep disorders, sleep disorders were found

Table 5. Correlations between variables of FM patients

	1	2	3	4	5	6	7	8	9	10
1. Age	1									
2. HAD-D	.157	1								
3. HAD-A	.020	.469**	1							
4. PSQI	.204	.414**	.349**	1						
5. PCL-5	-.066	.376**	.634**	.203	1					
6. CAS	-.045	.129	.307*	.078	.250*	1				
7. OCS	-.091	.056	.292*	.083	.325**	.654**	1			
8. WPI	-.200	.098	-.096	.004	.045	.009	-.160	1		
9. SSS	-.053	.406**	.408**	.485**	.419**	.222	.248	.175	1	
10. VAS	.020	.321*	.374**	.274*	.324*	.075	.117	.117	.600**	1

FM = Fibromyalgia, HADS = Hospital Anxiety and Depression Scale, PSQI = Pittsburgh Sleep Quality Index, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5, CAS = Coronavirus Anxiety Scale, OCS = Obsession with COVID-19 Scale, WPI = Widespread pain index, SSS = Symptom severity score, VAS = Visual analog scale

*$p < 0.05$, **$p < 0.01$

in 42.2% of participants [24].

During the COVID-19 pandemic, Alaosh *et al*. [25] found that 22.1% moderate-severe generalized anxiety disorder, 29.5% severe generalized anxiety disorder, 28% moderate-severe depressive disorder, 23.8% severe depressive disorder, 42.8% moderate-severe insomnia, 29.4 % severe insomnia in the patients with FM diagnosis.

When interpreting these obtained rates, it was found that the depression rate in FM patients during the COVID-19 pandemic was higher than the depression rate in FM patients, with the exception of the Covid-19 pandemic and the depression rate in the general population during the COVID-19 pandemic period. This result shows that the negative psychological effects of the COVID-19 pandemic increase the rate of depression in patients with FM. The anxiety rate was within expected limits. As expected, the sleep disturbance rate is higher than in the general population and similar to the rate in patients with FM. The PTSD rate was also within the expected range.

When compared to other studies conducted with FM patients during the COVID-19 pandemic, it was observed that the mean values of the WPI scores were similar and there was a relative difference in the mean values of the SSS and VAS scores. The reason for this difference in SSS and VAS may be the impact of existing psychological problems such as depression and anxiety in FM patients.

In this study, a significant relationship was found between the presence of depression and the presence of anxiety in FM patients. Recent data shows that FM, depressive disorders, and anxiety disorders tend to be comorbid conditions. They share a common neurochemical dysfunction, such as changes in the reactivity of the hypothalamic-pituitary-adrenal axis and the hypofunctional serotonergic system [26]. Therefore, this result was realized as expected.

A significant association was found between the presence of an anxiety disorder and PTSD. Johnson *et al*. [27] found an association between anxiety and PTSD symptoms in their study during the COVID-19 pandemic. It is known that FM patients' existing symptoms worsen with stress and that anxiety and post-traumatic stress disorder are in their etiology. It is an expected finding that the symptoms of anxiety and post-traumatic stress caused by the COVID-19 pandemic are related.

There was a significant difference in SSS between FM patients who were at risk of depression and those who were not. There is no other study examining FM patients at and without risk of depression for SSS in the COVID-19 pandemic. But in the study by Aloush *et al*. [25] in which they examined FM patients in the Covid-19 pandemic, they found a significant correlation between depression and SSS.

A significant difference was found between FM patients with and without anxiety risk in terms of obsession, symptom severity, VAS and post-traumatic symptom severity for COVID-19. Kharko *et al*. [28] showed that there is a positive correlation between pain and anxiety in FM patients during the COVID-19 period in their study. Studies have shown that people with more post-traumatic stress symptoms also have more anxiety symptoms [27, 29]. Taking into account the correlation scores, there is a positive correlation between depression and anxiety and SSS deterioration, sleep quality, and VAS deterioration; A positive correlation was found between deterioration in sleep quality and SSS. In the study by Aloush *et al*. [25], as expected, a positive correlation was found between COVID-19 anxiety, COVID-19 obsession and both general anxiety and post-traumatic stress symptoms.

Limitations

It can be noted that this is a study conducted from a single center and the number of samples is relatively small. We believe that conducting new prospective studies with control groups to determine the change in symptoms in FM patients over time will further expand our knowledge in this area.

CONCLUSION

In this study, SARS-CoV-2 negative FM patients with and without risks of depression and anxiety were examined. It was observed that depression was a predictor of FM symptom severity and anxiety was a predictor of obsession with coronavirus, FM symptom severity, VAS, and post-traumatic stress symptoms. In addition, it was found that there was a significant difference in symptom severity between those with good sleep quality and those without good sleep quality. A positive correlation was found between worsening sleep quality and the risk of depression and anxiety. Another positive correlation was found between the severity of trauma and the severity of depression and anxiety. Finally, a positive correlation was found between obsessions regarding COVID-19 and trauma symptoms. All of this data suggests that patients diagnosed with FM may have been affected by the psychological burden of COVID-19 during the COVID-19 pandemic and FM patients should be followed up more frequently from a psychiatric perspective.

Authors' Contribution

Study Conception: KA, ZAÖ; Study Design: KA, ZAÖ; Supervision: KA, ZAÖ; Funding: KA, ZAÖ; Materials: ZAÖ; Data Collection and/or Processing: KA, ZAÖ; Statistical Analysis and/or Data Interpretation: KA, ZAÖ; Literature Review: KA, ZAÖ; Manuscript Preparation: KA and Critical Review: KA.

Conflict of interest

The authors disclosed no conflict of interest during the preparation or publication of this manuscript.

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