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Obsessive–Compulsive Disorder During the COVID-19 Pandemic: Effects of COVID-19 Fear and Health Anxiety

Onur Gökçen*, Merve Akkuş, Süleyman Keleş

Kütahya Health Sciences University Evliya Celebi Training and Research Hospital Psychiatry Department

ABSTRACT

The impact of the COVID-19 pandemic on obsessive-compulsive disorder (OCD) has been a particular concern for the last two years, but the published evidence on the subject has remained contradictory and unclear thus far. This study was aimed to be a contribution to the research about the effects of COVID-19 fear and health anxiety on OCD symptoms.

OCD patients who were admitted to the psychiatry outpatient clinic were evaluated with the Padua-Inventory-Washington-State-University-Revision (PI-WSUR), The Fear of COVID-19 Scale and Health Anxiety Inventory (HAI) and the interview form prepared for this study.

Of the 54 patients diagnosed with OCD; 34 (62.9%) reported that their complaints had increased over the past year, PI-WSUR total scores and HAI total scores were found significantly related to the total scores of The Fear of COVID-19 Scale. The subscales of "obsessive impulses to harm self/others" and "dressing/grooming compulsions" from PI-WSUR were found significantly related to both HAI total scores and The Fear of COVID-19 Scale total scores. However, the subscale of "contamination obsessions and washing compulsions " was not found significantly related to either HAI total scores or The Fear of COVID-19 Scale total scores.

This study shows that the pandemic period negatively affected a significant population of OCD patients and that there is a significant relationship between the severity of OCD symptoms and health anxiety/COVID-19-related fear. Our study also indicates that COVID-19-related stress does not necessarily cause symptoms of contamination but rather shows specific symptoms based on the themes of OCD itself in one patient.

Keywords: Obsessive-Compulsive disorder, COVID-19, anxiety, fear

Introduction

The COVID-19 pandemic was identified as a pandemic by the World Health Organization on March 11, 2020, and its global mortality and morbidity rates have become a major public health concern ever since (1). Besides its physical effects, COVID-19 can also significantly affect the mental health of society as it has been causing anxiety all over the world (2).

Individuals with obsessive-compulsive disorder (OCD) have been a particular concern during this pandemic (3). OCD is a chronic psychiatric disorder that consists of persistent recurrent thoughts, images, or impulses (obsessions) and repetitive behaviors to defuse the anxiety caused by these obsessions (compulsions) (4). Transmission/contamination obsessions are among the most common obsessions that are seen (5). Transmission/contamination obsessions are often associated with compulsions such as repetitive hand washing, cleaning behaviors, and taking disproportionate measures to avoid the perceived sources of contamination (5).

Numerous studies have shown that COVID-19 is associated with a high level of stress (6) and health anxiety (7, 8). The uncertainty of the risk posed by the COVID-19 pandemic can be stressful for individuals with an intolerance to uncertainty (9). Patients with OCD typically have a high degree of intolerance to uncertain situations. They also have high levels of health anxiety and a tendency to overestimate any threat or dangerous situation (10, 11, 12,13). Intensive protective measures recommended by the authorities, such as physical distance and frequent hand washing during the COVID-19 pandemic can also be considered sources of stress for individuals with OCD. In addition, the economic and social conditions created by the pandemic can be sources of stress for patients with OCD too. It has been suggested by many authors that these stressors may worsen

***Corresponding Author:** Onur Gökçen, Assistant Professor, Department of Psychiatry Kütahya Health Sciences University Evliya Celebi Training and Research Hospital Psychiatry Department

ORCID ID: Onur Gökçen: 0000-0003-2058-9855, **Merve Akkuş:** 0000-0003-3046-2815, **Süleyman Keleş:** 0000-0002-7173-7865

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OCD due to the nature of the disorder (14,15). Many studies have found a significant increase in symptoms of OCD patients compared to the pre-pandemic. (16,17,18,19). On the other hand, some studies have found improvement or no change in symptoms after the onset of the pandemic (20,21,22,23). Given the heterogeneity of these results, questions remain about how this pandemic affects OCD patients.

It has been thought that the fear caused by the recommendations on reducing the risk of COVID-19 transmission may especially affect OCD patients who present symptoms of transmission/contamination more negatively (24). Although the types of obsessions and compulsions are not usually approached separately in most studies; in some lengthy works, it has been shown that transmission/contamination symptoms of OCD had a worse prognosis than other symptoms during the pandemic (17,18,19,25). Transmission/contamination symptoms in OCD patients have been associated with increased COVID-19-related stress. It has also been found that first-experienced transmission/contamination symptoms were usually associated with COVID-19 during this period (25). However, OCD patients also have symptoms other than symptoms of transmission/contamination (5,26). In a study conducted over the Internet, the negative effects of COVID-19 in OCD patients were found to be linked to symptoms of "feeling responsible for harm" besides the often seen symptoms of transmission/contamination (27). Furthermore, the authors who found the aggravation of OCD rates lower suggested that contamination obsessions cannot be generalized to COVID-19 and that OCD symptoms are subjective and patient-specific. They also indicated that the risk of a new virus would not always increase the fear of infection/contamination (28,22).

We think that it is important how the stress caused by the COVID-19 pandemic is handled individually. OCD patients with a high level of health anxiety and a tendency to overestimate the danger may experience COVID-19 as a threat. On the other hand, the communal concerns for COVID-19 and the protective measures taken against the infection can play a role in the improvement of the symptoms and prevent symptomatic exacerbations in some OCD patients. Furthermore, OCD patients tend to direct their attention to their own thoughts (29,28). For this reason, they may be less affected by external events, or even if they are affected, they may experience a worsening of other symptoms that were present in their previous thoughts, rather than developing COVID-19-related contamination symptoms. Therefore, we think that it will be important to evaluate the fear and health anxiety caused by COVID-19 in OCD patients and to address the relationship between these and OCD symptoms for this approach might provide a different view from the classical point of view.

Materials and Methods

The first cases of COVID-19 in Türkiye were reported on March 11, 2020. As of February 1, 2021; 2.485.182 cases and 26,117 deaths have been reported (30). In this study, patients who had been previously followed with the diagnosis of OCD and who applied to Kutahya Health Sciences University Evliya Çelebi Training and Research Hospital and Afyonkarahisar State Hospital psychiatric outpatient clinics between February 1st. 2021 and May 1st. 2021 were evaluated. The approval of the ethics committee was obtained from the ethics committee of Kutahya Health Sciences University Evliya Çelebi Training and Research Hospital and Afyonkarahisar State Hospital University (Decision No: 2021/01-11) on the 20th of May, 2021. Written consent of the patients who would participate in the study had been obtained. Patients were given the Padua Inventory-Washington State University Revision (PI-WSUR) to determine the severity and the type of OCD symptoms; The Fear of COVID-19 scale to determine the level of COVID-19 fear, and the Health Anxiety Inventory to determine the level of health anxiety. In addition, a specially prepared interview form was given to patients to determine the sociodemographic characteristics and subjective complaint levels of the patients, as well as their knowledge about COVID-19 and its treatment. In this interview form, they were asked if their complaints had increased in the last year.

The Padua Inventory was developed for the first time by Burns, Keortge, Formea, and Sternberger. The original scale, consisting of sixty items, was revised by Burns et al., excluding anxiety-related items (31). The highness of the total score on the scale indicates the severity of obsessive-compulsive symptoms. The Turkish validity and reliability study of PI-WSUR was conducted by Yorulmaz et al. (32).

The Health Anxiety Inventory (HAI) was developed to assess health anxiety (30). The Health Anxiety Inventory is a self-report scale consisting of 18 items. The Turkish validity and

reliability study of HAI was conducted by Aydemir et al (34).

The Fear of COVID-19 Scale was developed by Ahorsu et al. (35) to measure the levels of fear caused by COVID-19. The items of the scale were created based on a comprehensive review of the existing scales on fear, as well as expert assessments and participant interviews. The Turkish validity and reliability study of The Fear of COVID-19 Scale was conducted by Satıcı et al. (36).

In the study, SPSS 25.0 package program was used for data analysis. Descriptive data about the sociodemographic information of the participants are provided in the study as frequency tables.

When the data of the study were examined in terms of normality assumptions, Kolmogorov-Smirnov values were determined as $p<0.05$. Therefore, Spearman correlation analysis was chosen as the nonparametric test to be performed to detect the relationship between scale scores. To determine whether there are significant differences between the sociodemographic data of the participants, nonparametric tests Mann-Whitney U and Kruskal Wallis H were applied. In case of significant differences between the groups, a post hoc test was performed to determine which groups the significance was between. The Games-Howell Post-Hoc test was chosen because the variance was not uniformly distributed and the sample numbers were not equal. $p<0.05$ were considered statistically significant.

Results

The frequency distribution of the sociodemographic variables of the participants is seen in Table 1.

The frequency distribution of the clinic variables of the participants is seen in Table 2.

In Table 3, the relationships between the scores obtained from the scale and the subscales of the participants were shown with the Spearman correlation analysis. According to this analysis, a statistically significant positive relationship was found between the PI-WSUR total score and the HAI total score (Th Dec=0.373 p=0.005) and the fear of COVID-19 scale total score (r=0.302 p=0.026).

The subscale of “obsessive impulses to harm self/others” from PI-WSUR was found related to both HAI total scores (r=0.410 p=0.002) and The Fear of COVID-19 Scale total scores (r=0.269 p=0.050).

The "checking obsessions and compulsions" subscale scores had a statistically significant relationship to the total scores of HAI (r=0.310 p=0.022).

However, the subscale of “contamination obsessions and washing compulsions” was not found significantly related to either HAI total scores or The Fear of COVID-19 Scale total scores.

The "dressing/grooming rituals" subscale was also positively significant to the total scores of HAI (r=0.414 p=0.002) and The Fear of COVID-19 Scale (r=0.327 p=0.016).

The scale scores were compared in terms of various variables in Table 4.

A statistically significant difference was found between married and single patients. The total scores of PI-WSUR were found to be Z=-2,052; p=0.040, while the score of the "obsessional thoughts of harm to self/others" subscale was Z=-2,690; p=0.007 and the score of "obsessional impulses to harm self/others" subscale was Z=-2,391; p=0.017.

The score of the "contamination obsessions and washing compulsions" subscale of PI-WSUR was detected to have a statistically significant difference between genders. The score of "contamination obsessions and washing compulsions" was found to be higher in women compared to men (Z=-2.056 p=0.040).

According to the answers given to the question: “Have your complaints increased in the last year?" a statistically significant difference was detected between the patients who answered differently. The group of patients that were changed medications had been found to have higher HAI total scores (KV=10,062 p=0.018) and higher The Fear of COVID-19 Scale total scores (KV=11,787 p=0.008). In the Post-Hoc analysis, there was a statistically significant difference in HAI total scores between the patients whose medications were changed due to worsening of symptoms and the patients whose symptoms did not increase (p=0.044). There was also a statistically significant difference in the HAI total scores between the patients whose medications were changed due to worsening of symptoms and the patients whose complaints decreased (p=0.024). In addition, in the Post-Hoc analysis, there was a statistically significant difference in the total scores of The Fear of COVID-19 Scale between the patients whose medications were changed due to worsening of symptoms and the patients whose symptoms did not increase (p=0.008).

Table 1. Sociodemographic Data of the Participants (n=54)

Demographic variables	N or XAvg (Min-Max)	% or Avg. ±SD
Age	28,50 (18-61)	30,96±9,12
30 and Below	30	55,6
Above 30	24	44,4
Sex		
Male	13	24,1
Female	41	75,9
Marital Status		
Married	26	48,1
Unmarried	28	51,9
Occupation		
Unemployed	38	70,4
Employed	16	29,6
OCD diagnosis time (years)	4,50 (1,0-18,0)	5,12±3,90
Treatment type		
Untreated	6	11,1
Medication	46	85,2
CBT	1	1,9
CBT and Medication	1	1,9

Xavg=Median, **Min**=Minimum, **Max**=Maximum, **Avg.**=Average, SD=Standard deviation

Discussion

In this study, 34 (62,9%) of the 54 patients who were followed up with a diagnosis of OCD reported that their complaints had increased in the last year. The treatments of 14 of them (25.9%) were changed. As we did also ask in our studies, in the previous studies that were conducted by asking the patients if their symptoms worsened during the pandemic, there was a wide range between %6 to %72 in the rates of the reported symptom increase (%6, n: 84 (22); %10, n: 60 (37); %32, n: 65 (28); %36, n:123 (38); %45, n: 65 (39); %76.2, n: 252 (27); %72, n: 394 (40); %65, n: 127 (16)). Significant increases in OCD symptom severity were also found in some follow-up studies comparing the pandemic and the pre-pandemic periods (17,18,19,16). On the other hand, there are also follow-up studies that have not found an increase in symptom severity (20,21). These differences in medical scripts may be due to several different reasons. Firstly, it is known that sociocultural differences have an impact on OCD, and individuals who live in different societies may have handled pandemic stress differently (41,22,42). The different patterns of the studies are also another factor that may affect the results. In our study, 34 of 54 patients (62.9%) reported that their complaints had increased in the last year, but only 14 of them (25.9%) were changed treatments. Similarly, in a study by Alonso et al. (16), despite the 83 (%65,3) patients who reported worsening in their symptoms, only 40 of them (%31,4) were found to have above 25 percent increase in their pre-pandemic Y-BOCS scores. They also reported that only a quarter of the patients needed medication adjustments.

In our study, 13 (24.1%) people reported that their complaints had not changed and 7 (13%) people reported that their complaints had decreased. Similarly, in many other studies, there have been many patients who reported improvement or no change in their symptoms (20,21,22,28,42). These results draw attention to the heterogeneity of the OCD patient population and indicate that not every OCD patient will be affected by the pandemic in the same way. In our study, a significant relationship was found between the total scores of the PI-WSUR, HAI, and Fear of COVID-19 Scale. In addition, the total scores of the Health Anxiety Inventory and the total scores of the COVID-19 Fear Scale were found to be higher in OCD patients whose treatments were changed due to the worsening of the symptoms. In two previous studies, it was similarly found that OCD severity was related to COVID-19-induced fear (27) and that intrusive thoughts were related to stress caused by COVID-19 (43) In one of these studies, OCD patients reported higher COVID-related fear compared to

Table 2. Data of clinic variables of the participants (n=54)

Demographic variables		N	%
Have your complaints increased in the last year?	My complaints have increased, and my medications were changed.	14	25,9
	My complaints increased, but I did not seek medical help.	20	37,0
	My complaints have not increased.	13	24,1
	My complaints have decreased.	7	13,0
Have you had a COVID-19 infection?	Yes	6	11,1
	No	48	88,9
Has there been anyone who experienced a COVID-19 infection from your family/first-degree relatives/people you live with?	Yes	24	44,4
	No	30	55,6
Have the people you live with had a COVID-19 infection?	Yes (Mild)	10	18,5
	Yes (Hospitalization)	1	1,9
	Yes (Death)	2	3,7
	No	41	75,9
Medication	None	7	13,0
	SSRI	34	63,0
	Tricyclic	1	1,9
	SSRI and Antipsychotic	9	16,7
	Tricyclic and Antipsychotic	3	5,6
Cognitive Behavioral Therapy	Yes	14	25,9

Tablo 3. The Correlation Results of the Relation Between The Participants' OCD Diagnosis Duration, PI-WSUR, HAI and The Fear of COVID-19 Scale Scores

		1	2	3	4	5	6	7	8	9
1-OCD diagnosis (time after)	r	1								
	p	.								
2-PI-WSUR Total Score	r	0,057	1							
	p	0,682	.							
3-PI-WSUR Factor-1	r	0,139	,843**	1						
	p	0,317	<0.001	.						
4-PI-WSUR Factor-2	r	0,157	,654**	,664**	1					
	p	0,258	<0.001	<0.001	.					
5-PI-WSUR Factor-3	r	0,08	,858**	,692**	,501**	1				
	p	0,566	<0.001	<0.001	<0.001	.				
6-PI-WSUR Factor-4	r	-0,111	,792**	,507**	,316*	,524**	1			
	p	0,425	<0.001	<0.001	0,020	<0.001	.			
7-PI-WSUR Factor-5	r	0,119	,809**	,629**	,478**	,659**	,637**	1		
	p	0,391	<0.001	<0.001	<0.001	<0.001	<0.001	.		
8-HAI Total Score	r	0,124	,373**	,410**	0,257	,310*	0,226	,414**	1	
	p	0,373	0,005	0,002	0,061	0,022	0,101	0,002	.	
9-The Fear of COVID-19 Scale Total Score	r	0,225	,302*	,269*	0,162	0,178	0,192	,327*	0,186	1
	p	0,102	0,026	0,05	0,243	0,198	0,164	0,016	0,177	.

*Correlation is significant when it is above 0,05 (Spearman correlation test), ** Correlation is significant when it is at the level of 0,01 (Spearman correlation test), PI-WSUR Factor 1= obsessional thoughts about harm to self/others PI-WSUR Factor 2= Obsessional impulses to harm self/others, PI-WSUR Factor 3= Checking obsessions and compulsions, PI-WSUR Factor 4= Contamination obsessions and washing compulsions PI-WSUR Factor 5= Dressing/Grooming

Table 4. Comparison of Different Variables with the Scale Scores (n=54)

Variables		Number	PI-WSUR Total Score	HAI Total Score	The Fear of COVİD-19 Scale Total Score
			Avg.±SD	Avg.±SD	Avg.±SD
Age	30 and below	30	60,73±31,67	17,43±9,05	17,83±6,90
	Above 30	24	63,71±32,17	16,42±9,58	20,46±8,42
	Z=		-0,383	-0,628	-1,187
	p=		0,702	0,530	0.235
Sex	Male	13	54,69±30,60	17,77±8,86	16,92±5,28
	Female	41	64,39±31,95	16,73±9,42	19,66±8,21
	Z=		-1,022	-0,557	-0,903
	p=		0.307	0.577	0.367
Marital Status	Married	26	71,58±31,53	16,62±8,63	20,58±7,46
	Unmarried	28	53,21±29,57	17,32±9,87	17,54±7,67
	Z=		-2,052	-0,312	-1,770
	p=		0.040	0.755	0.077
Occupation	Unemployed	38	64,05±30,61	17,16±8,73	19,32±7,22
	Employed	16	57,31±34,48	16,56±10,56	18,25±8,81
	Z=		-0,739	-0,370	-0,741
	p		0.460	0.711	0.459
Has anyone you lived with had COVİD-19 infection?	Yes	24	59,38±30,25	17,67±10,18	20,29±8,24
	No	30	64,20±33,04	16,43±8,50	17,97±7,12
	Z=		-0,427	-0,663	-0,986
	p		0.670	0.508	0.324
Have your complaints increased in the last year?	1) My complaints have increased, and my medications were changed.	14	65,64±33,46	21,71±8,70	23,36±7,80
	2) My complaints increased, but I did not seek medical help.	20	72,25±30,33	17,95±10,09	17,65±7,56
	3) My complaints have not increased.	13	45,92±27,61	12,69±8,00	14,31±3,35
	4) My complaints have decreased.	7	55,71±31,36	12,71±4,31	22,86±8,15
	KW		6,241	10,062	11,787
	p		0.100	0.018	0.008
	Post-Hoc		-	1-3,1-4	1-3

Z; Mann Whitney U test, KW; Kruskall Wallis test, Post-Hoc=Games Howell test, $p<0.05$

the control group. But when the OCD group was evaluated singularly, only 50.1% reported that they were more worried about COVID-19 than other people's perceptions. In light of all these results, out of the OCD patients, who are a heterogeneous patient group as the nature of the disease, we think that those with a high level of health anxiety and a tendency to exaggerate the threat are affected worse by the pandemic.

Many studies have reported that OCD patients with contamination obsessions are more affected

by the stress brought on by the pandemic process than other OCD patients (16,17). In our study, the "obsessional impulses to harm self/others" and "dressing/grooming compulsions" subscales of PI-WSUR were found significantly related to the total scores of HAI and The Fear of COVID-19 Scale. Curiously, however, the subscale of "contamination obsessions and washing compulsions" was not found significantly related to either HAI total scores or The Fear of COVID-19 Scale total scores. It is known that the symptom types and areas do not change frequently in OCD patients (44). When a new stressor enters their lives, OCD patients may experience a worsening of their old symptoms instead of creating obsessions about this new stressor. In a study conducted online, when OCD patients were asked if their concerns about COVID-19 exceeded their OCD concerns, 70.9% of the participants reported that their OCD concerns remained primary. When participants were asked whether their level of anxiety about COVID-19 was experienced as part of the OCD or as a separate issue, 41,7% reported that their anxiety about COVID-19 was a separate issue (27). Fears of contamination and getting sick cannot always be generalized to COVID-19 obsession (22,42). OCD patients may not experience the COVID-19 pandemic as an OCD-specific threat. Due to the increase of stress caused by COVID-19 or health anxiety, they may experience a worsening of their own OCD symptoms instead of COVID-19-related contamination symptoms. Thus, these stressors may be found associated with other symptoms such as "obsessional impulses to harm self/others".

Compared to the unmarried, the total score of PI-WSUR and the score of "obsessive thoughts and impulses to harm oneself/others" were higher in married patients. People with OCD tend to heavily control others, often in relation to an exaggerated need for security (45). Studies have reported increased marital problems related to OCD patients, such as less satisfaction with spouses, and less intimacy experience (45). Although there is evidence that being married in society during the pandemic period is protective of mental health (46,47), it has also been reported that there is an increase in domestic violence cases with an increase in stay-at-home time (48). In this process, where there are "stay at home" warnings and quarantine closures, the problems caused by the communication styles of individuals with OCD may have increased. In one study, it was stated that individuals with OCD reported a greater deterioration in family life during quarantine than the healthy control group (16). Marital problems may have caused an increase in symptoms as a separate aggravator for OCD symptoms in individuals with OCD.

The score of the "contamination obsessions and washing compulsions" subscale of PI-WSUR was found to be higher in women compared to men. Although OCD usually affects women and men equally, contamination obsessions are more common in women (49,50) The results of our study also confirm this phenomenon.

This study has some limitations. First of all, the patients self-reported the changes in their symptoms. It is not a follow-up study comparing their status before the pandemic. The patients participating in the study are people who have applied to the outpatient clinic. There might be patients who had not applied to the outpatient clinic because their conditions were better, and the population of patients with acute complaints may have led to high rates of worsening symptoms. In addition, factors such as the active use of vaccines, a decrease in disease rates, and the increase in the general knowledge of COVID-19 among the public might have reduced the stress caused by uncertainty. We believe that it is important to evaluate how OCD patients are affected by new and ever-changing conditions of the pandemic, and new follow-up studies are needed. New treatment approaches can be developed in light of new information.

This study shows that the pandemic period negatively affected a significant part of OCD patients and that there is a relationship between OCD symptom severity and COVID-19-related fear and health anxiety. The study also gives the message that COVID-19-related stress does not only cause contamination symptoms and it might also affect other dimensions of OCD. We think that an individual approach is essential instead of a deductive overview in OCD patients who are a heterogeneous community.

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