Original Article

Investigation of Obsessions and Compulsions in Terms of Psychological Resilience in the Epidemic Period

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Abstract

Aims and Objectives: In this study, obsessions and compulsions observed during the epidemic period were investigated in terms of psychological resilience. **Materials and Methods:** The research was conducted on a voluntary basis with 208 people (51.4% women, 48.6% men) who were exposed to the COVID 19 epidemic. Participants were given a Sociodemographic Information Form including questions about COVID 19, Vancouver Obsession–Compulsion Inventory (VOCI), and Adult Psychological Resilience Scale. Data were analyzed with Statistical Package Program for Social Science 21.0 program. **Results:** When the findings were examined, no difference was found between obsession–compulsion and psychological resilience in terms of total score. However, there are relationships in subdimensions. Contamination subscore of VOCI and social resources subscore of Resilience Scale for Adults were found to be higher than the others. Hoarding was higher in men, while self perception, structural style, and family cohesion were higher in women. Single participants had higher obsession–compulsion scores, whereas married participants had higher self perception and family adjustment. It was concluded that as individuals' age increased, their self perception and social competence increased. Relationships were also found in terms of both obsession–compulsion and psychological resilience with variables, such as the frequency of COVID 19 news and case follow up, the frequency of body screening for COVID 19 symptoms, the change in the frequency of cleaning, and the idea of getting psychological support. **Conclusion:** This research is significant when it comes to seeing the effect of a compulsive life event, such as an epidemic disease on obsessive and compulsive behaviors.

Keywords: *COVID-19, epidemic disease, obsession–compulsion, psychological resilience*

Introduction

Epidemic diseases have severely affected human and animal health, economy, and psychology from the past till today and have led to losses.[1] These effects have been studied in various dimensions and fields (such as psychology, sociology, history, economy, and tourism) and have been the subject of research. COVID-19 (coronavirus) is one of these epidemic diseases. These effects have been studied in various dimensions and fields (such as psychology, sociology, history, economy, and tourism) and have been the subject of research. COVID-19 (coronavirus) is one of these epidemic diseases. It started in Wuhan, China, in December 2019 and rapidly spread to the whole world. The first case seen in our country was in March. There has been intense anxiety and stress since the first case was seen. It is a predictable result that the epidemic will cause and create physical disorders in people. However, the psychological consequences of the epidemic are as significant as the physiological consequences. Psychology has a prominent role in how individuals exposed to the epidemic will do in the face of such a crisis, as well as how to deal with the problems of social isolation, staying at home, washing hands, and fear of contamination.[2]

Whether the individual is infected or not can be quite psychologically worn out. However, it is unknown how corrosive it will be and how long the negative effect will last.[3] Negative effects and psychological disturbances will expect in people in line with what has been learned

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from previous pandemics and epidemics, even though the long-term psychiatric consequences of the pandemic period are not yet known.[4] The issue of how it will be affected by this crisis period may vary depending on many factors. Individuals with an anxious personality may become more anxious.[3] Fear of infection, financial difficulties, quarantine practices, increased losses, incomplete or misinformation in the media, increased concerns about the death of oneself, or others can lead to a psychological disturbance that did not exist before, as well as can increase an already existing ailment and symptom.[5,6] Warnings such as paying attention to hygiene, washing hands frequently, and using disinfectants, which are part of COVID-19 precautions, are likely to increase the contamination obsession and cleaning compulsion that the individual already has.[7] The COVID-19 outbreak can exacerbate obsessions and compulsions in individuals with obsessive–compulsive disorder (OCD). However, it can be the opposite. The individual who has excessive thoughts about the contagion realizes that everyone is behaving like her/him. This situation may relax the person and obsessive fears about the coronavirus may not occur.[8]

Since the emergence of psychology science, the effects of adverse and challenging situations psychological health have been researching from different perspectives in many studies.[9] COVID-19 is also described as a global crisis and a challenging situation. Which events will lead to the crisis and how they will affect it vary from person to person.[10] The reactions and behaviors put forward as a result of the crisis are temporary. On the other hand, long-term effects on the psychology and well-being of individuals can be seen.[11]

Physiology and psychology are a whole that affects each other. "Neuro-immunomodulation" describes this situation well. It means that the mood of the person, how he/she feels, affects the immune system.[1] One of the previous studies supports this opinion. In the study, being psychologically resilient and physiologically resilient was found interrelated. Psychological well-being brings along physical well-being. Resilient individuals were able to deal with stressful events more comfortably without seeing them as a threatening factor.[12] Resilience also brings along physical and psychological health. It can be said that individiuals with higher endurance think in a more positive way.[12] and therefore, anxiety symptoms are not common in these individuals.[13] Woodard (2004) mentioned that psychological resilience can explain physical resilience and is a protective factor for diseases. In another study,

Table 1: Descriptive statistical findings of sampling (*n*=208)

Factor	Variable	*n* (%)
Gender	Female	107 (51.4)
	Male	101 (48.6)
Marital status	Single	150 (72.1)
	Married	58 (27.9)
Frequency of following COVID-19 news and case numbers	Several times a day	58 (27.9)
	Every 2-3 days	68 (32.7)
	Once a week	17 (8.2)
	If it coincides	65 (31.3)
Self-examination for representation of COVID-19 symptom	Almost always	53 (25.5)
	Sometimes	76 (36.5)
	Rarely	61 (29.3)
	Never	18 (8.7)
Change in cleaning frequency	Yes	149 (71.) 6
	No	59 (28.4)
The frequency of cleaning and disinfection of the place experienced in the pandemic process	Several times a day	45 (21.6)
	Once a day	72 (34.6)
	2-3 times a week	54 (26.0)
	4-5 times a week	37 (17.8)
The frequency of cleaning and disinfection of the place before the pandemic	Several times a day	16 (7.7)
	Once a day	51 (24.5)
	2-3 times a week	102 (49.0)
	4-5 times a week	39 (18.8)
Psychological support	Yes	31 (14.9)
	No	177 (85.1)
Thought of getting psychological support in the following days	Yes	26 (12.5)
	No	139 (66.8)
	Indecisive	43 (20.7)

COVID-19: Coronavirus-2019

resilience was found to be associated with positive affect, positive social support, life satisfaction, and optimistic coping.[14] In the study conducted by Altuntaş and Genç,[15] psychological resilience was found to be associated with happiness. It is thought that the individual with high strength will be happier, and therefore, the resilient individual will be happier.

In a study conducted with approximately 130 individuals in Canada to examine the psychological effects of the severe acute respiratory syndrome (SARS), which has a contagious epidemic feature and emerged in 2003, a high level of stress was observed in people. Individuals showed signs of posttraumatic stress disorder (PTSD) and depression. Furthermore, it was concluded that close contact with the individual who tested positive for SARS and the process of long-term social isolation increased these symptoms.[16]

Postepidemic research is as important as the researchers conducted during the epidemic period, as psychological symptoms can be observed. In a study conducted with 233 individuals who survived the disease 3–4 years after the SARS-CoV-1 epidemic, psychiatric disorders were found in nearly 50% of them. Panic disorder, PTSD, chronic fatigue, depression, and OCD are among the observed disorders.[17]

In a study conducted after the onset of the COVID outbreak in China, participants have rated the psychological impact of the epidemic as moderate or severe and reported symptoms of depression and anxiety.[18]

This research was needed because the COVID-19 outbreak is all over the world and caused problems for people. This study aimed to examine the obsessions and compulsions observed during the epidemic period, in terms of psychological resilience. Although research on the epidemic is very limited, it has been observed that previous studies have generally focused on PTSD or depression. Therefore, it is thought that looking at the epidemic from a perspective of obsession– compulsion and psychological resilience can be important to cope with the period more easily.

Table 2: Mean scores and score ranges of the scales

	n	$\bar{X}$	SD	Minimum	Maximum
VOCI	208	68.31	40.28	4	186
Contamination	208	18.31	10.14	1	46
Checking	208	7.76	6.37	0	24
Obsessions	208	12.26	9.56	0	39
Hoarding	208	5.52	5.22	0	20
Absolute accuracy	208	16.34	10.32	0	46
Indecision	208	8.10	5.47	0	23
RSA	208	102.90	9.00	75	143
Perception of the self	208	19.03	2.66	8	27
Planned future	208	12.61	1.84	6	18
Structured style	208	13.00	2.57	6	20
Social competence	208	19.25	2.58	12	30
Family cohesion	208	18.72	2.94	10	29
Social resources	208	20.28	3.37	11	33

VOCI: Vancouver Obsessive-Compulsive Inventory, RSA: Resilience Scale for Adults, SD: Standard deviation

Methods

The ethics committee approval has been obtained from the Uskudar University Non-Interventional Research Ethics Committee (613551342/2020-360).

Sample

The study sample is 208, of which 107 are female (51.4%) are 101 are male (48.6%). Their age is between 18 and 60 years. The sample was selected by the inclusion and exclusion criteria. Inclusion criteria were being in the age range of 18–60, not having a psychiatric diagnosis, and agreeing to participate in the study voluntarily. Exclusion criteria were that being younger than 18 and older than 60 years old is to have a psychiatric diagnosis. All participants submitted a volunteer consent form.

Table 3: Analysis of variance results on the relationship between the scale scores of the sample and the frequency of following coronavirus-19 news and case numbers

Frequency of following	*n*	$\bar{X}$	SS	Minimum	Maximum	*F*	*P*	Difference
Indecision								
Several times a week	58	7.77	5.56	0	18	6.453	0.000*	1-3
Every 2-3 days	68	7.41	4.52	0	21			2-3
Once a week	17	13.47	6.87	1	23			3-1
If it coincides	65	7.70	5.27	0	23			3-2
								3-4
								4-3
Structured style								
Several times a day	58	13.81	2.51	6	18	2.760	0.043*	1-4
Every 2-3 days	68	12.79	2.50	8	17			4-1
Once a week	17	12.64	1.57	10	16			
If it coincides	65	12.60	2.78	7	20			

*$P \leq 0.05$: Statistically significant. SD: Standard deviation

Table 4: Analysis of variance results of the relationship between scale scores of the sample and self-examination for the representation of coronavirus-19 symptoms

Examination	*n*	$\bar{X}$	SD	Minimum	Maximum	*F*	*P*	Difference
VOCI								
Almost always	53	85.18	41.65	8	186	5.578	0.001*	1-3
Sometimes	76	67.82	39.47	9	175			1-4
Rarely	61	59.45	35.32	8	152			3-1
Never	18	50.72	40.87	4	133			4-1
Contamination								
Almost always	53	23.62	10.97	2	46	10.354	0.000*	1-2
Sometimes	76	18.34	8.67	1	42			1-3
Rarely	61	15.78	9.47	1	40			1-4
Never	18	11.11	8.40	2	29			2-1
								3-1
								4-1
Checking								
Almost always	53	9.86	6.49	0	24	2.772	0.043*	1-2
Sometimes	76	7.11	6.07	0	24			1-3
Rarely	61	7.22	6.14	0	24			1-4
Never	18	6.16	7.13	0	22			2-1
								3-1
								4-1
Obsession								
Almost always	53	15.05	10.15	0	18	2.924	0.035*	1-3
Sometimes	76	12.36	9.61	0	18			3-1
Rarely	61	9.81	7.97	0	20			
Never	18	11.88	10.98	0	12			
Absolute accuracy								
Almost always	53	20.20	11.23	0	23	4.633	0.004*	1-3
Sometimes	76	16.23	9.84	0	22			1-4
Rarely	61	14.52	9.35	0	18			3-1
Never	18	11.55	9.57	0	19			4-1
Indecision								
Almost always	53	10.03	5.32	88	126	3.985	0.009*	1-3
Sometimes	76	8.10	5.97	83	132			1-4
Rarely	61	7.00	4.64	87	143			3-1
Never	18	6.11	4.99	75	121			4-1
Perception of the self								
Almost always	53	19.79	2.91	8	17	2.957	0.033*	1-2
Sometimes	76	18.64	2.47	10	17			1-3
Rarely	61	18.63	2.38	6	18			2-1
Never	18	19.77	3.19	8	17			3-1

*$P \leq 0.05$: Statistically significant. VOCI: Vancouver Obsessive-Compulsive Inventory, SD: Standard deviation

Measurement instruments

The Vancouver obsessive–compulsive inventory (VOCI) and the Resilience Scale for Adults (RSA) were used with the form prepared to collect the sociodemographic information of the participants.

Sociodemographic Information Form

The questions on this form used in the first section of the search: participants' genders, ages, marital status, frequency of following COVID-19-related news and cases, how often they performed body screening to determine if they showed symptoms of COVID-19, whether the frequency of cleaning during the epidemic period has changed, whether participants' have received psychological support before, whether participants' have previously received a psychiatric diagnosis, and whether they want psychological support in the following days.

Table 5: *t*-test results of the relationship between the sample scale scores and the change in cleaning frequency

Change	*n*	$\bar{X}$	SD	*t*	*P*
Contamination					
Yes	149	19.32	10.01	2.320	0.021*
No	59	15.74	10.10		
Hoarding					
Yes	149	6.04	5.22	2.267	0.024*
No	59	4.23	5.02		
Self-perception					
Yes	149	18.80	2.66	-1.974	0.050*
No	59	19.61	2.61		

*$P \leq 0.05$: Statistically significant. SD: Standard deviation

Vancouver obsessive–compulsive inventory

This scale frequently uses to evaluate the severity of OCD, both in research and clinical practice. The original form of the scale had created by Thordarson *et al*.[19] Validity and reliability studies of the Turkish form were conducted by İnözü and Yorulmaz.[20] The scale is in the form of five-point Likert scale and consists of six subdimensions and 55 substances. Subdimensions are contamination, checking, obsessions, hoarding, absolute accuracy, and indecisiveness. As the score from the scale, the severity of OCD symptoms also increases. Internal consistency of the original version of the scale was 0.94 for the total scale and 0.88–0.96 for subscales.[19] The total internal consistencies were 0.96 in the study of the validity and reliability of the Turkish form. Internal consistencies of subscales were 0.89 for contamination, 0.90 for checking, 0.86 for obsessions, 0.81 for hoarding, 0.87 for absolute accuracy, and 0.77 for indecisiveness.[20]

Resilience Scale for Adults

It has created by Fribog *et al*.[21] to include five subdimensions: personal strength, structural style, family cohesion, social competence, and social resources. However, considering that these dimensions were not enough, they divided the dimension of "personal strength" into self and future perception. Thus, the scale consisted of six dimensions in total. The validity and reliability study of the Turkish form was carried out by Basim and Cetin[22] through two groups of 262 employees and 350 students. There are 33 items on the scale and five boxes in the answer key. Positive and negative answers are on different sides for each question. Scoring is released and the scores that can obtain from the scale vary between the values 33 and 165. Cronbach alpha coefficients for subscales of the original form of the scale range from 0.67 to 0.90 and test–retest correlations vary between 0.69 and 0.84. In the validity and reliability study of the Turkish form, Cronbach alpha coefficients for subscales range between 0.66 and 0.81 in the study group and between 0.68 and 0.79 in the employee group. The total Cronbach alpha coefficient of the scale was 0.86 in both groups.[22]

Data analysis

The data were collected online by sending them to the participants. Data analysis was used IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp. One-way analysis of variance and independent *t*-test were used to determine differences in participant scale scores based on Sociodemographic Information Form variables. Pearson's correlation analysis was used to determine the relationship between scores obtained from scales.

Results

When the distribution of 208 participants in the study by gender variable is examined, it is seen that there are 107 (51.4%) women and 101 (48.6%) men. It was determined that 150 (72.1%) participants were single and 58 (27.9%) participants were married. It has determined that most of the participants (31.7%) followed the COVID-19 news and the number of cases every 2–3 days. It has concluded that the majority of the participants (36.5%) sometimes performed body scans for COVID-19 symptoms. The cleaning frequency of 149 (71.6%) participants changed during the COVID-19 period. Most of the participants, 72 (34.6%), clean or disinfect their place of living once a day during the pandemic period. Most of the participants, 102 (42%), clean or disinfect their place of living 2–3 times a week before the pandemic period. The number of participants who have not received psychological support before is 177 (85.1%), and 139 (66.8%) people do not consider receiving psychological support in the following days. [Table 1]

The contamination average score, which is one of the subdimensions of VOCI, was determined as 18.31. Accordingly, the contamination subdimension score is higher than the other subdimension scores of the scale. Social resources' average score of the participants, which is one of the subdimensions of resilience scale for adult, was determined as 20.28. Accordingly, the social resources score is higher than the other subdimension score of the scale. [Table 2]

According to the analysis results, there is a significant difference between the indecision scores ($F_{(3,204)} = 6.453$; $P = 0.000$), structural style scores ($F_{(3.204)} = 2.760$; $P = 0.043$), and the frequency of following the COVID-19 news and case numbers. According to the results of the Tukey *post hoc* test conducted to determine which group caused the difference, for indecision: it was determined that the indecision scores of the participants with weekly follow-up frequency were higher than other participants; for the structural style: it has been determined that the structural style scores of the participants who have several follow-ups every day were higher than the participants who looked if coincidentally. [Table 3]

According to the analysis results, VOCI ($F_{(3.204)} = 5.578$; $P = 0.001$), contamination ($F_{(3.204)} = 10.354$;

Table 6: Analysis of variance results of the relationship between the frequency of cleaning and disinfection of the place experienced in the pandemic with the scale scores of the sample

Frequency	*n*	$\bar{X}$	SD	Minimum	Maximum	*F*	*P*	Difference
VOCI								
Several times a day	45	80.84	37.17	8	152	4.958	0.002*	1-2
Once a day	72	60.13	37.15	5	166			1-3
2-3 times a week	54	59.51	37.88	4	157			2-1
4-5 times a week	37	81.83	46.60	9	186			3-1
Contamination								
Several times a day	45	21.24	11.00	3	45	3.877	0.010*	1-3
Once a day	72	17.65	9.84	1	41			3-1
2-3 times a week	54	15.16	8.74	2	37			
4-5 times a week	37	20.62	10.41	3	46			
Checking								
Several times a day	45	9.97	6.14	0	22	2.852	0.038*	1-2
Once a day	72	6.63	6.20	0	24			2-1
2-3 times a week	54	7.14	6.05	0	24			
4-5 times a week	37	8.18	6.95	0	24			
Obsessions								
Several times a day	45	14.33	8.32	1	29	4.777	0.003*	1-2
Once a day	72	9.65	8.09	0	31			1-4
2-3 times a week	54	11.44	9.33	0	33			2-1
4-5 times a week	37	16.02	12.22	1	39			4-1
Hoarding								
Several times a day	45	7.22	5.63	0	20	5.173	0.002*	1-2
Once a day	72	4.11	4.50	0	19			1-4
2-3 times a week	54	4.87	4.72	0	17			2-1
4-5 times a week	37	7.18	5.83	0	18			4-1
Absolute accuracy								
Several times a day	45	18.84	9.30	0	38	3.773	0.011*	3-4
Once a day	72	14.84	9.77	1	45			4-3
2-3 times a week	54	13.96	10.11	0	43			
4-5 times a week	37	19.67	11.63	2	46			
Indecision								
Several times a day	45	9.22	5.31	0	19	3.912	0.010*	2-4
Once a day	72	7.23	5.43	0	23			3-4
2-3 times a week	54	6.92	4.86	0	23			4-2
4-5 times a week	37	10.13	5.97	1	22			4-3

*$P \leq 0.05$: Statistically significant. VOCI: Vancouver Obsessive-Compulsive Inventory, SD: Standard deviation

Table 7: *t*-test results of the relationship between the scale scores of the sample and psychological support

Support	*n*	$\bar{X}$	SD	*t*	*P*
Family cohesion					
Yes	31	17.45	2.77	-2.643	0.009*
No	177	18.94	2.91		

*$P \leq 0.05$: Statistically significant. SD: Standard deviation

P = 0.000), checking (F (3.204) = 2.772; P = 0.043), obsessions (F (3.204), absolute accuracy (F (3.204) = 4.633; P = 0.004), indecision (F (3.204) = 3.985; P = 0.009), and one of the RSA subdimensions self-perception (F (3.204) = 2.957; P = 0.033), it is found that there is a significant difference between the scores and self-examination for the representation of COVID-19 symptoms. [Table 4] According to the results of Tukey *post hoc* test, in participants who almost always examine themselves for symptoms, VOCI, contamination, checking, obsessions, absolute accuracy, indecision, and self-perception scores were higher.

The contamination (P = 0.021) and hoarding (P = 0.024) scores were significantly higher in participants with a change in cleaning frequency. [Table 5] On the other hand, the self-perception (P = 0.050) score was significantly higher in participants with no change in cleaning frequency. [Table 6]

There was a significant difference in VOCI (F (3.204) = 4.958; P = 0.002), contamination (F (3.204) = 3.887; P =

Table 8: Analysis of variance results of the relationship between the scale scores of the sample and the thought of obtaining psychological support

Thought	*n*	$\bar{X}$	SD	Minimum	Maximum	*F*	*P*	Difference
VOCI								
Yes	26	79.92	41.79	24	186	16.958	0.000*	1-2
No	139	58.04	36.99	4	157			2-1
Indecisive	43	94.51	36.37	11	166			2-3
								3-2
Contamination								
Yes	26	19.23	9.95	7	46	7.618	0.001*	2-3
No	139	16.61	9.35	1	40			3-2
Indecisive	43	23.25	11.21	2	45			
Checking								
Yes	26	8.15	6.88	0	24	6.549	0.002*	2-3
No	139	6.79	5.94	0	24			3-2
Indecisive	43	10.69	6.62	0	24			
Obsessions								
Yes	26	15.76	9.86	2	39	20.832	0.000*	1-2
No	139	9.56	8.31	0	36			2-1
Indecisive	43	18.86	9.49	2	38			2-3
								3-2
Hoarding								
Yes	26	6.57	4.98	0	18	7.114	0.001*	2-3
No	139	4.62	5.04	0	20			3-2
Indecisive	43	7.81	5.21	0	17			
Absolute accuracy								
Yes	26	19.03	10.73	5	46	14.861	0.000*	1-2
No	139	13.86	9.47	0	43			2-1
Indecisive	43	22.72	9.75	2	45			2-3
								3-2
Indecision								
Yes	26	11.15	6.55	2	23	18.860	0.000*	1-2
No	139	6.58	4.97	0	23			2-1
Indecisive	43	11.16	4.25	1	21			2-3
								3-2
Family cohesion								
Yes	26	17.46	3.47	12	26	4.783	0.009*	1-2
No	139	19.13	2.67	11	29			2-1
Indecisive	43	18.13	3.16	10	26			

*$P \leq 0.05$: Statistically significant. VOCI: Vancouver Obsessive-Compulsive Inventory, SD: Standard deviation

0.010), checking (F (3.204) = 2.852; $P = 0.038$), obsessions (F (3.204) = 4.777; $P = 0.003$), hoarding (F (3.204) = 5.173; $P = 0.002$), absolute accuracy (F (3.204) = 3.773; $P = 0.011$), and indecision (F (3.204) = 3.912; $P = 0.010$) scores depending on the frequency of cleaning and disinfection of the place lived in the pandemic process. According to the Tukey *post hoc* test conducted to determine which group caused the difference, VOCI and its subdimensions contamination, checking, obsessions, and hoarding scores are higher in participants who had a frequency of cleaning several times a day compared to others. [Table 7] For absolute accuracy and indecision: The scores of the participants who had 4–5 times of cleaning per week were higher than the others. [Table 8]

The family cohesion ($P = 0.009$) scores of the participants who did not receive psychological support have found to be significantly different and higher than the participants who received psychological support.

There was a significant difference in VOCI (F (2.205) = 16.958; $P = 0.000$), contamination (F (2.205) = 7.618; $P = 0.001$), checking (F (2.205) = 6.549; $P = .002$), obsessions (F (2.205) = 20.832; $P = 0.000$), hoarding (F (2.205) = 7.114; $P = 0.001$), absolute accuracy (F (2.205) = 14.861; $P = 0.000$) and indecision (F (2.205) = 18.860; $P = 0.000$) scores, depending on the idea of getting psychological support, and there is a significant difference between the

Table 9: *t*-test results of the relationship between scale scores of the sample and gender

Gender	*n*	$\bar{X}$	SD	*t*	*P*
Hoarding					
Female	107	4.68	4.69	-2.422	0.016*
Male	101	6.42	5.61		
RSA					
Female	107	104.86	9.33	3.310	0.001*
Male	101	100.83	8.17		
Self perception					
Female	107	19.68	2.45	3.717	0.000*
Male	101	18.34	2.72		
Structural style					
Female	107	13.38	2.69	2.203	0.029*
Male	101	12.60	2.38		
Family cohesion					
Female	107	19.28	3.12	2.872	0.004*
Male	101	18.12	2.61		

*$P \leq 0.05$: Statistically significant. RSA: Resilience Scale for Adults, SD: Standard deviation

Table 10: *t*-test results of the relationship between the scale scores of the sample and marital status

Marital status	*n*	$\bar{X}$	SD	*t*	*P*
VOCI					
Single	150	73.033	40.96	2.758	0.006*
Married	58	56.12	35.99		
Contamination					
Single	150	19.59	10.14	2.983	0.003*
Married	58	15.00	9.46		
Hoarding					
Single	150	6.16	5.26	2.851	0.005*
Married	58	3.89	4.77		
Absolute accuracy					
Single	150	17.55	10.52	2.767	0.006*
Married	58	13.20	9.14		
Indecision					
Single	150	8.78	5.71	3.322	0.001*
Married	58	6.32	4.37		
Self perception					
Single	150	18.73	2.58	-2.647	0.009*
Married	58	19.81	2.73		
Family cohesion					
Single	150	18.45	2.99	-2.130	0.034*
Married	58	19.41	2.69		

*$P \leq 0.05$: Statistically significant. VOCI: Vancouver Obsessive-Compulsive Inventory, SD: Standard deviation

idea of getting psychological support. According to the results of Tukey *post hoc* test conducted to determine which group caused the difference, VOCI and its subdimensions contamination, checking, obsessions, hoarding, absolute accuracy, and indecision scores were found higher in participants who were indecisive at the idea of getting psychological support than others. [Table 9] For family cohesion: scores of the participants who had no idea of getting psychological support were higher.

According to the analysis, female participants' RSA ($P = 0.001$), self-perception ($P = 0.000$), structural style ($P = 0.029$), and family cohesion ($P = 0.004$) scores are significantly different and higher than male participants. On the other hand, hoarding ($P = 0.016$) scores of the male participants are significantly different and higher than female participants. [Table 10]

According to the analysis, VOCI ($P = 0.006$), contamination ($P = 0.003$), hoarding ($P = 0.005$), absolute accuracy ($P = 0.006$), and indecision ($P = 0.001$) scores of the single participants were found to be significantly different and higher than married participants. On the other hand, the scores of self-perception ($P = 0.009$) and family cohesion ($P = 0.034$) of married participants were found to be significantly different and higher than single participants.

According to the analysis result, There was significant negative correlation between age and VOCI ($r = -0.250$; $P = 0.000$), contamination ($r = -0.235$; $P = 0.001$), obsessions ($r = -0.196$; $P = 0.005$), stacking ($r = -0.241$; $P = 0.000$), absolute accuracy ($r = -0.234$; $P = 0.001$), indecision ($r = -0.274$; $P = 0.000$) and future perception ($r = -0.148$; $P = 0.033$), social resources ($r = -0.149$; $P = 0.032$). On the other hand, a positive and statistically significant relationship was found between age and the subdimensions of RSA - self-perception ($r = 0.162$; $P = 0.019$) and social competence ($r = 0.167$; $P = 0.016$). According to these results, as individual's age increases, self-perception and social competence increase, while VOCI, contamination, obsessions, hoarding, absolute accuracy, indecision, future perception, and social resources scores decrease.

According to the correlation results, Accordingly, there was a statistically significant and positive correlation between VOCI and contamination ($r = 0.812$; $P < 0.01$), checking ($r = 0.808$; $P < 0.01$), obsessions ($r = 0.887$; $P < 0.01$), hoarding ($r = 0.820$; $P < 0.01$), absolute accuracy ($r = 0.941$; $P < 0.01$), indecision ($r = 0.804$; $P < 0.01$), future perception ($r = 0.173$; $P < 0.05$), structural style ($r = 0.139$; $P < 0.05$), and social resources ($r = 0.211$; $P < 0.01$). [Table 11] A statistically significant and positive relationship has found between RSA with self-perception ($r = 0.617$; $P < 0.01$), planned future ($r = 0.491$; $P < 0.01$), structural style ($r = 0.572$; $P < 0.01$), social competence ($r = 0.495$; $P < 0.01$), family cohesion ($r = 0.610$; $P < 0.01$), and social resources ($r = 0.566$; $P < 0.01$). On the other hand, there is a statistically significant and negative relationship between obsessions and family cohesion ($r = -0.163$; $P < 0.05$). [Table 12]

Discussion

There are studies conducted during the pandemic period on people diagnosed with OCD. These studies indicate that contamination obsession and cleaning compulsion increased during the epidemic period.[23,24] In our study,

Table 11: The correlation analysis results of the relationship between the scale scores of the sample and age

	Age
VOCI	
r	-0.250
P	0.000**
Contamination	
r	-0.235
P	0.001**
Obsessions	
r	-0.196
P	0.005**
Hoarding	
r	-0.241
P	0.000**
Absolute accuracy	
r	-0.234
P	0.001**
Indecision	
r	-0.274
P	0.000**
Self-perception	
r	0.162
P	0.019*
Planned future	
r	-0.148
P	0.033*
Social competence	
r	0.167
P	0.016*
Family cohesion	
r	0.135
P	0.052
Social resources	
r	-0.149
P	0.032*

VOCI: Vancouver Obsessive-Compulsive Inventory, ** P<.001

the contamination subdimension score has found to be higher on the obsession–compulsion scale. It is a known fact that COVID-19 spreads through contact. Accordingly, the result found is quite meaningful and compatible with the literature. In the psychological resilience scale, the social resources subdimension score is higher than the other subdimensions. All subdimensions of psychological resilience were positively correlated with each other. Despite the isolation process, it can be said that strong social ties and communication with other individuals have a significant effect on resilience. The total obsessive–compulsive score and future perception, structural style, and social resources were found to be significantly and positively related. That's not what we expected. The characteristics of the sample are significant in this sense. It can be said that the pandemic period reinforces the obsessions–compulsions that are present in every individual, even if only a little, and causes them to be internalized. It can be thought that the process taking longer than expected creates a habituation situation. Since psychological resilience is expressed as the ability to adapt despite adverse conditions, even if people show signs of obsession–compulsion, they may cope more easily thanks to their high endurance. Besides, a negative relationship was found between obsessions and family cohesion. Affecting the whole family from a problem experienced by the person and there may be troubles in the family.

When the previous studies are examined, individuals generally prefer to receive support from the family and social environment and do not want to seek professional support unless there is a serious problem. In a study with university students, it says that students meet their needs for psychological support from friends or family, rather than someone who is an expert in the field. They are generally looking for psychological support due to emotional, personality, and family problems.[25] Participants who were indecisive about the psychological support had higher scores of obsession compulsion total score, contamination, checking, obsessions, absolute accuracy, hoarding, and indecision subdimensions. The result found overlaps with the characteristics of OCD and the indecision subdimension. No differentiation was observed in the total score of psychological resilience. Family adjustment, which is the subdimension of psychological resilience, was found higher in participants who did not think of getting support. Studies confirm that people prefer family members first, rather than psychological support. It can be said that an individual with harmonious family relationships and support will not need expert help. In this case, it is seen that positive interaction and communication with individuals at home are too important during the pandemic process. It can be said that the stronger and more harmonious the relationships with the people living together are, the less affected individuals will be affected by this process.

When we look in terms of news and case follow-up frequency, weekly news and case follow-ups were found to be associated with the indecision subdimension. The uncertainty experienced considering it is quite possible to see it in its indecision with the uncertainty in this period. The structural style score, which is the psychological resilience subdimension, was found higher in participants who had a frequency of following several times a day. Structural style can also express as the ability to make daily, weekly, and monthly plans. In fact, in this case, it is necessary to take into account of people's news-watching habits. News and case tracking can be part of the daily routine. Structural style is also the ability to control one's self. Individuals with a high structural style may prefer to stay away from events and news when they think they are affected. Some studies support our findings as well as studies that do not. In a previous study, it has concluded that the psychological resilience of people differentiates depending on the following COVID-19 development.[26] In

Table 12: The correlation analysis results of the relationship between the scales

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) VOCI	R	1													
(2) Contamination	R	0.812**	1												
(3) Checking	R	0.808**	0.602**	1											
(4) Obsessions	R	0.887**	0.591**	0.652**	1										
(5) Hoarding	R	0.820**	0.582**	0.542**	0.742**	1									
(6) Absolute accuracy	R	0.941**	0.689**	0.763**	0.809**	0.743**	1								
(7) Indecision	R	0.804**	0.532**	0.571**	0.690**	0.669**	0.751**	1							
(8) RSA	R	0.116	0.146*	0.113	0.091	0.045	0.091	0.080	1						
(9) Self perception	R	-0.019	0.065	0.033	-0.039	-0.099	-0.048	-0.047	0.617**	1					
(10) Planned future	R	0.173*	0.072	0.160*	0.229**	0.095	0.137*	0.201**	0.491**	0.205**	1				
(11) Structural style	R	0.139*	0.174*	0.096	0.101	0.038	0.126	0.138*	0.572**	0.337**	0.159*	1			
(12) Social competence	R	-0.045	-0.030	0.038	-0.041	-0.036	-0.044	-0.130	0.495**	0.121	0.096	0.108	1		
(13) Family cohesion	R	-0.059	0.066	0.005	-0.163*	-0.128	-0.056	-0.051	0.610**	0.343**	0.138*	0.188**	0.243**	1	
(14) Social resources	R	0.211**	0.131	0.081	0.245**	0.256**	0.193**	0.181**	0.566**	0.094	0.286**	0.164*	0.113	0.078	1

*$P<0.05$: Statistically significant; **$P<0.01$: Statistically significant. VOCI: Vancouver Obsessive-Compulsive Inventory, RSA: Resilience Scale for Adults

another study, it was stated that the psychological resilience of the participants who learned the information about COVID-19 from official institutions was higher than the participants who learned on social media.[27] There are also studies stating that there is no relationship between following the COVID-19 news, cases, and being psychologically healthy.[28]

Participants were asked how often they examined themselves for the COVID-19 symptom. According to the analysis results, participants who answered "almost always" had high scores of obsession–compulsion overall score and contamination, checking, obsessions, absolute accuracy, and indecision. When considering anxiety and contamination concerns, the result found is quite meaningful. Often dealing with somatic symptoms reminds us to obsessions. Self-perception, which is one of the subdimensions of psychological resilience, was found to be associated with body scan frequency. Self-perception is also associated with physical well-being (Tutar *et al.*, 2009).[29] In a study, it was stated that people with high self-perception had fewer symptoms of anxiety.[30] Individuals with high self-perception may be doing body scanning, not because of anxiety, but to take the necessary precautions if they show symptoms.

The frequency of cleaning and disinfection behavior had examined to determine how long the participant was busy with this situation in a week. There was no difference between psychological resilience and the frequency of cleaning before and during the pandemic period. In a study, it was concluded that as the anxiety increased, the efforts regarding cleaning increased.[31] In another study on hygiene, it was stated that individuals have more hygiene and hygiene-oriented behaviors who have disease anxiety.[32] In another study, psychological resilience was found associated with the cleaning and disinfecting behaviors during the epidemic period.[27] When examined in terms of obsession and compulsion scores, although there was no difference before the pandemic, there were significant differences in the frequency of cleaning during the pandemic period. It was found that the VOCI, contamination, checking, obsessions, and hoarding scores of the participants whose cleaning and disinfection frequency were several times a day were higher than the other participants. Although the findings were not at the desired level in terms of psychological resilience, predictable results were obtained in terms of obsession–compulsion. In another study, it is considered that obsessions and compulsions should be investigated in terms of alternative variables. Besides, the question was asked, "Did your cleaning frequency change during the pandemic period?" as the subjective assessment of the participant is important, and as can be predicted, a majority stated that they have changed.

There are different studies and different findings analyzing the relationship between psychological resilience and

gender. Haring *et al*.[33] stated as a result of their research that men have higher psychological well-being levels than women. They found gender as a significant predictor of subjective well-being. In a study examining the relationship between COVID-19 and psychological resilience, women's resilience was found to be higher than men's.[27] In our study, a significant difference was found between gender and psychological resilience level. The psychological resilience level of women is significantly higher than men's. In a study, it has been noted that obsessive–compulsive behaviors and anxiety levels increase in pregnant women on the COVID-19 outbreak.[34] The number of samples and sample characteristics is thought to be effective in finding the different results.

Psychological resilience scores of married individuals were found higher than singles in a study conducted with adult participants (Türker, 2018). In some studies, no significant relationship is found between marital status and psychological resilience.[27,35] When we look at our findings, no difference had found between psychological resilience total score and marital status. However, when the subdimensions were examined, it was found that married participants' self-perception and family adjustment were significantly higher than single participants. Another study indicates that married individuals have higher self-perception than singles.[29] Some factors have a positive effect on psychological resilience. All kinds of supportive attitudes felt among family members can be expressed as strong family ties, a romantic relationship, nurturing the parenting aspect.[36] It can be thought that the support that married participants receive from their partners and children, their romantic relationship with their partner and their commitment to each other, and their parenting roles and their skills in this regard reinforce resilience. From another perspective to approach the result, the high subdimensions may be due to the difference between the number of married participants and the number of single participants.

Looking at the literature, in a study conducted, a low-level positive relationship has been found between OCD scores and age. In other words, as age increases, OCD scores increase.[37] Some studies support our findings.[38] According to the results of our analysis, as the age of the individual's increases, the scores obtained from the subscales of obsession–compulsion total score, contamination, obsessions, hoarding, absolute accuracy, and indecision decrease. There was no differentiation in terms of total score in the relationship between psychological resilience and age. However, when we look at the subdimensions, it was found that as individuals' age increases, their self-perception and social competence are increased, while their future perception and social resources scores decrease. As the experiences of individuals increase depending on age, it will be possible to reach a level that they can understand and analyze them better and give clearer answers to the question of "who am I." Accordingly, individuals can increase their self-perception and social competence as their age increases. However, when the person reaches a certain age, although their social competence increases, the bonds in their social relationships may weaken. In a study conducted with healthcare professionals during the pandemic period, it was stated that as age increases, psychological resilience also increases.[39,40]

Patient informed consent

Informed consent was obtained.

Ethics committee approval

The ethics committee approval has been obtained from the Uskudar University non-interventional research ethics committee (613551342/2020-360).

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There is no conflict of interest to declare.

Author contribution area and rate

Zeynep Atalay (60%): She designed the research, data collection and analysis and wrote the entire article.

Merv Çebi (30%): Contributed with comments on research design and slides interpret.

Zeynep Gümüş Demir (10%): Supervised the article write-up.

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