

THE RELATIONSHIP OF OBSESSIONS AND COMPULSIONS WITH AGGRESSION IN PATIENTS WITH OBSESSIVE COMPULSIVE DISORDER

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Summary

Background: Obsessive-compulsive disorder (OCD) is a psychiatric disorder that is frequently encountered in the clinic and affects the functionality of patients significantly. Patients with higher levels of aggression have lower treatment compliance and recovery rates for their current mental illnesses. In our study, the relationships between OCD and its subtypes and aggression were examined.

Subjects and Methods: A total of 87 patients with OCD were included in the study. Yale–Brown Obsessive–Compulsive Scale (Y–BOCS) and Buss–Perry Aggression Questionnaire (BPAQ) were applied to the patients.

Results: In this study, the relationship between Obsession subtypes and aggression total and subtypes was evaluated. Hostility ($p=0.004$), anger ($p=0.034$), verbal aggression ($p=0.002$) and total aggression scores ($p=0.017$) were significantly higher in patients with aggression obsessions. Hostility ($p=0.021$) and aggression total scores ($p=0.043$) were significantly higher in patients with contamination obsession. Anger total scores of patients with hoarding obsessions ($p=0.025$) and symmetry obsessions ($p=0.023$) were found to be significantly higher. Anger levels of patients with counting compulsions ($p=0.038$) were significantly higher. Anger levels ($p=0.047$) and verbal aggression levels ($p=0.018$) were significantly higher in patients with hoarding compulsion. A positive and significant correlation was found between the levels of total obsession score and total aggression scores ($p=0.038$ $r=0.222$). However there was no significant correlation between the total compulsion score and the total aggression score.

Conclusion: The coexistence of aggression and OCD is one of the less studied issues in the literature. Aggression is a factor that affects the treatment process of patients negatively. In our study, a significant relationship was found especially between obsession and aggression.

Keywords: Aggression, Obsessive-Compulsive Disorder, Anger

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INTRODUCTION

Obsessive-compulsive disorder (OCD) is a mental disorder characterized by obsessive, compulsive and disturbing thoughts and behaviors aimed at compensating for these thoughts and reducing the feeling of distress. It is a chronic disorder with a decrease or an increase in symptoms from time to time. While it was previously included in the classification of anxiety disorders in the DSM (The Diagnostic and Statistical Manual of Mental Disorders) diagnostic criteria, it is now included under a different diagnosis title in the DSM-5 classification (Goodman et al. 2014). Severe obsessive symptoms significantly reduce the person's quality of life. Unemployment, family and social relationship problems are seen in these patients (Drubach 2015). OCD often accompanies other mental disorders. Anxiety disorders and depressive disorders are commonly seen comorbidities. Comorbidity of mental disorders negatively affects functionality of patients (Bokor & Anderson 2014). OCD usually begins in young adulthood (Abramowitz et al. 2009). Although it is more common in women, it becomes more common in older men.

It is a disease mostly seen in young adulthood (Mathes et al. 2019). OCD patients frequently present to a clinic, but sometimes the diagnosis may be overlooked and the patients may be left untreated. OCD should be known by clinicians in all its aspects due to both its association with neuropsychiatric diseases and its clinical difficulty (Stein et al. 2019). Although the treatment responses are low from time to time, medicines are the most effective treatment agents today (Math & Janardhan Reddy 2007). In addition, cognitive behavioral therapy is another effective treatment method (Bokor & Anderson 2014).

Aggression is an emotion that a person shows against negative life events and it is associated with anger. It can lead to negative consequences for the person. It can negatively affect family and social life of a person (Blair 2018). There are many factors that can cause aggression. It has biological and cognitive causes. Studies have shown the effectiveness of brain functions in the mechanism of aggression (Gilam & Hendler 2017). Anger and aggression are emotions that worsen clinical findings both socially and personally. Depression and pessimism can often be associated with aggression. It may worsen patients'

clinical symptoms and may reduce their response to treatment. While arranging the treatment for the patient's mental disorders, the effect of aggression should also be taken into account. Adding interventions to the treatment to control anger and similar destructive emotions will have a positive effect on the clinical signs (Painuly et al. 2005). There are neurobiological commonalities of aggression and OCD in the literature. However, data on their clinical association and relationship with symptoms are limited. Therefore, research is needed on this subject. It was aimed to contribute to the literature with our study.

SUBJECTS AND METHODS

Sample characteristics and assessment

This study was carried out in the psychiatry outpatient clinic. Patients who presented to the outpatient clinic and were diagnosed with OCD according to DSM-5 diagnostic criteria without any treatment history for at least last two years were included in the study. A total of 87 patients with OCD who met the inclusion criteria were enrolled in the study. Informed written and verbal consent to participate in the study was obtained from the patients. Sociodemographic Data Form, Yale–Brown Obsessive–Compulsive Scale (Y–BOCS) and Buss–Perry Aggression Questionnaire (BPAQ) were applied to the patients. The patients were aged between 18 and 65, had the academic capacity to understand and filled the scales, and were not diagnosed with any mental illness other than the diagnosis of OCD. Patients with a chronic disease and drug use were excluded from the study. Ethics committee approval of the study was received. All practices in this study were made in accordance with the ethical standards of the institutional and/or national research committee and the 1964 Declaration of Helsinki and subsequent regulations.

Sociodemographic Data Form: This is an information form prepared by us for the sociodemographic evaluations of patients.

Yale–Brown Obsessive–Compulsive Scale (Y–BOCS): The scale was used to measure the severity of obsessions. It is a reliable scale to measure the presence and severity of obsessions and compulsions. It is a 10 item scale scored between 0 and 4. The scale measures the individual values of obsessions and compulsions. The Cronbach's alpha value of the scale was found to be 0.81. Turkish validity and reliability was performed by Karamustafalıoğlu et al. (Karamustafalıoğlu 1993).

Buss–Perry Aggression Questionnaire (BPAQ): The scale was used to measure the severity of aggression.

It is a Likert-type scale that consists of 29 questions and determines the level of aggression and anger. It is a self-report scale, and each question is scored between 0 and 4. Increasing scores are associated with increased aggression levels. There are the subscales of physical aggression, hostility, verbal aggression and anger. Cronbach's alpha value of the subscales was found as 0.78 for physical aggression, 0.76 for hostility, 0.78 for verbal aggression and 0.76 for anger. Turkish validity and reliability was performed by Madran et al. (Madran et al. 2012).

Statistical Analysis

Research data was evaluated through SPSS Version 25 (SPSS, Statistical Package for Social Sciences, IBM Inc., Armonk, NY, USA) software. Descriptive statistics were presented as mean \pm standard deviation, frequency distribution, and percentage. The conformity of the variables to the normal distribution was examined using visual (histogram and probability graphs) and analytical (Kolmogorov-Smirnov Test/Shapiro-Wilk Test) methods. For variables with normal distribution, independent sample t test was applied for statistical significance between two independent groups. For the variables that were not normally distributed, Mann-Whitney U Test was used between two independent groups and Kruskal Wallis Test was used as statistical method among three independent groups. Post-hoc analysis and Bonferroni correction were performed in the groups with differences. Spearman and Pearson correlation analyses were used for correlations between the groups. Statistical significance level was accepted as $p < 0.05$.

RESULTS

The age range of the cases included in the study was 18-59 years old, 72.4% were women (63 patients) and 27.6% (24 patients) were men. The mean age of all cases was 33 ± 10.42 years. The sociodemographic characteristics of the patients included in the study were shown in detail in Table 1. Considering the relationship between sociodemographic data and scale scores, a negative significant correlation was found between age and hostility ($p = 0.008$ $r = -0.282$) and aggression total score ($p = 0.025$ $r = -0.24$). A significant difference was found between gender and physical aggression ($p = 0.038$). Physical aggression scores of male (mean = 21.29) patients were significantly higher than those of female (mean = 18.17) patients. There was a significant difference between marital status and hostility ($p = 0.025$) and aggression total score ($p = 0.037$). Hostility scores were significantly higher in singles (mean = 26.76)

Table.1. Sociodemographic Data of the Patients

		Min	Max	Mean±SD
Age		18	59	33±10.426
		n	%	
Gender	Woman	63	72.4	
	Man	24	27.6	
Married Status	Married	45	51.7	
	Single	41	47.1	
	Divorced	1	1.2	
Education	Primary School	15	17.2	
	High School	34	39,1	
	University	38	43.7	
Occupation	Officer	8	9.2	
	Worker	20	23.0	
	Retired	2	2.3	
	Student	13	14.9	
	Unemployed	44	50.6	
Total		87	100	

Table.2. The Relationship of *BPAQ* and *Y-BOCS* with Sociodemographic Data

		<i>BPAQ</i> Physical Aggression	<i>BPAQ</i> Hostility	<i>BPAQ</i> Anger	<i>BPAQ</i> Verbal Ag- gression	<i>BPAQ</i> Total	<i>Y-BOCS</i> Total	<i>Y-BOCS</i> Obsession Total	<i>Y-BOCS</i> Compul- sion Total
Age	r	-0.196	-0.282	-0.112	-0.189	-0.24	0.075	-0.023	0.089
	p	0.068	0.008**	0.303	0.08	0.025*	0.492	0.834	0.414
Gender	p	0.038*	0.102	0.201	0.249	0.051	0.588	0.442	0.225
Married Status	p	0.129	0.025*	0.143	0.092	0.037*	0.244	0.307	0.294
Education	p	0.541	0.163	0.729	0.345	0.614	0.683	0.735	0.411
Occupation	p	0.527	0.064	0.026*	0.318	0.083	0.277	0.705	0.384

Spearman Correlation, Mann Whitney U, Independent Sample T Test, Yale–Brown Obsessive–Compulsive Scale (Y–BOCS), Buss-Perry Aggression Questionnaire (BPAQ) Kruskal Wallis, *p<0.05, **p<0.01

than in married people (mean=23.47) (p=0.025). Aggression total scores were significantly higher in singles (med=88.00) than married participants (med=78.00) (p=0.045). A significant difference was found between the occupational group and their anger levels (p=0.026), and when the paired groups were examined with the adjusted p value, no significant difference was found (Table.2).

The relationship between obsession subtypes and aggression total score and subtypes were evaluated (Table.3). The patients with aggression obsession had significantly higher hostility (p=0.004), anger (p=0.034), verbal aggression (p=0.002), and total aggression scores (p=0.017). Hostility (p=0.021) and aggression total scores (p=0.043) were significantly higher in patients with contamination

Table.3. Relationship Between Obsession Subtypes and Aggression Types

	<i>BPAQ</i> Physical Aggression		<i>BPAQ</i> Hostility		<i>BPAQ</i> Anger		<i>BPAQ</i> Verbal Aggression		<i>BPAQ</i> Total Total Score	
	Med (IQR)	p	Med(IQR)	p	mean±SD	p	mean±SD	p	mean±SD	p
Aggression Obsession										
Yes	19.2(9.0)	0.559	26.59(11.0)	0.004**	24.0±5.787	0.034*	18.55±4.7	0.002**	88.0±21.8	0.017*
No	18.29(8.0)		21.25(15.0)		19.0±6.76		13.0±4.3		68.0±21.2	
Contamination Obsession										
Yes	19.35(9.0)	0.587	26.10(9.0)	0.021*	23.0±6.2	0.909	17.0±4.6	0.098	87.0±20.7	0.043*
No	18.19(12.0)		20.69(19.0)		23.0±6.5		14.0±5.5		68.0±26.5	
Sexual Obsession										
Yes	18.8(11.0)	0.856	24.38(15.0)	0.797	22.0±7.2	0.623	17.5±4.7	0.891	83.5±27.3	0.413
No	19.19(9.0)		25.25(13.0)		23.0±6.0		16.5±4.9		84.0±21.1	
Hoarding Obsession										
Yes	19.02(11.0)	0.989	25.44(15.0)	0.398	24.0±5.9	0.025*	18.0±5.1	0.233	88.0±22.9	0.375
No	19.36(8.0)		24.36(13.0)		20.0±6.2		15.0±4.2		75.5±21.0	
Religious Obsessions										
Yes	19.98(12.0)	0.385	26.41(9.0)	0.222	24.0±5.9	0.426	19.0±4.6	0.202	89.0±21.8	0.251
No	18.34(11.0)		23.84(17.0)		23.0±6.4		16.0±5.0		79.9±22.6	
Symmetry Obsession										
Yes	19.58(9.0)	0.433	25.69(9.0)	0.32	24.0±5.8	0.023*	17.0±4.7	0.177	87.0±21.6	0.141
No	18.12(7.0)		23.69(16.0)		20.5±6.4		16.0±5.1		79.0±23.3	
Other Obsession										
Yes	19.15(10.0)	0.837	25.49(14.0)	0.346	23.00±5.9	0.637	17.0±4.6	0.333	84.0±21.4	0.265
No	19.06(8.0)		23.56(12.0)		22.5±7.2		15.0±5.7		79.0±25.2	
Somatic Obsession										
Yes	19.52(9.0)	0.386	26.00(11.0)	0.169	24.0±6.1	0.148	18.0±5.1	0.221	86.5±22.7	0.261
No	18.52(8.0)		23.64(14.0)		20.0±6.2		15.0±4.4		79.0±21.5	

independent t test, *p<0.05, **p<0.01
Mann Whitney U, IQR: Interquartile Range
Buss-Perry Aggression Questionnaire (*BPAQ*)

obsession. Anger total scores of patients with hoarding obsessions (p=0.025) and symmetry obsessions (p=0.023) were significantly higher. No significant difference was found between other obsession subtypes and anger total score and subtypes. Considering the relationship between compulsion subtypes and aggression subtypes (Table.4), patients with counting compulsions (p=0.038) had significantly higher anger levels. Anger levels (p= 0.047) and verbal aggression levels (p=0.018) were significantly

higher in patients with hoarding compulsions. There was no significant difference between other compulsion subtypes and anger total score and subtypes. Considering the relationship between obsessions and compulsions and aggression total scores, a significant positive correlation was found between total obsession scores and total aggression scores (p=0.038 r= 0.222), on the other hand there was no significant correlation between total compulsion scores and total aggression scores (Table.5).

Table.4. Relationship Between Compulsion Subtypes and Aggression Types

	<i>BPAQ</i> Physical Aggression		<i>BPAQ</i> Hostility		<i>BPAQ</i> Anger		<i>BPAQ</i> Verbal Aggression		<i>BPAQ</i> Total Score	
	Med (IQR)	p	Med (IQR)	p	mean±SD	p	mean±SD	p	mean±SD	p
Cleaning Compulsion										
Yes	18.72(9.0)	0.554	25.3(12.0)	0.695	23.0±5.8	0.703	17.0±4.8	0.861	84.0±21.0	0.688
No	20.05(11.0)		24.5(16.0)		21.0±7.2		16.0±5.2		79.0±26.2	
Control Compulsion										
Yes	19.21(10.0)	0.6	25.6(13.0)	0.166	23.0±6.4	0.721	17.0±4.9	0.778	84.5±21.7	0.274
No	18.44(7.0)		23.0(13.0)		22.5±5.4		16.0±4.9		82.0±24.1	
Ritual Compulsion										
Yes	19.31(10.0)	0.736	26.1(11.0)	0.27	24.0±6.5	0.597	17.0±5.1	0.582	84.0±22.5	0.313
No	18.8(9.0)		24.1(13.0)		22.5±5.8		16.0±4.7		83.0±22.0	
Counting Compulsion										
Yes	19.9(8.0)	0.183	26.4(8.0)	0.372	24.0±4.6	0.038*	16.5±4.3	0.602	89.5±15.1	0.122
No	18.5(11.0)		24.3(16.0)		21.5±6.7		17.0±5.2		78.5±25.0	
Sorting Compulsion										
Yes	19.7(9.0)	0.339	25.2(9.0)	0.997	23.5±5.9	0.88	17.0±4.7	0.751	85.0±20.9	0.532
No	18.6(10.0)		24.9(16.0)		23.0±6.5		16.0±5.0		81.0±23.7	
Hoarding Compulsion										
Yes	20.4(7.0)	0.418	28.2(10.0)	0.169	27.0±4.5	0.047*	20.0±2.6	0.018*	93.0±28.2	0.321
No	18.8(10.0)		24.7(13.0)		23.0±6.2		16.0±4.9		81.0±21.5	
Other Compulsion										
Yes	19.6(8.0)	0.598	26.8(10.0)	0.262	23.5±5.5	0.376	18.0±4.2	0.226	84.0±19.1	0.189
No	18.7(10.0)		24.3(13.0)		23.0±6.5		16.0±5.0		81.0±23.5	

independent t test, Mann Whitney U

IQR: Interquartile Range, *p<0.05

Buss-Perry Aggression Questionnaire (*BPAQ*)

Table.5. The relationship of Y–BOCS and *BPAQ*

		<i>BPAQ</i> Physical Aggression	<i>BPAQ</i> Hostility	<i>BPAQ</i> Anger	<i>BPAQ</i> Verbal Aggression	<i>BPAQ</i> Total Score
<i>Y–BOCS</i> Total Score	p	-0.067	-0.066	0.097	0.143	-0.159
Obsession Total Score	r	0.537	0.541	0.37	0.187	0.142
Compulsion Total Score	p	0.181	0.174	0.162	0.195	0.038*
	r	0.093	0.108	0.133	0.07	0.222
	p	-0.024	0.051	-0.071	-0.032	0.943
	r	0.826	0.641	0.512	0.768	0.008

Pearson Correlation, *p<0.05

Yale–Brown Obsessive–Compulsive Scale (*Y–BOCS*) and Buss-Perry Aggression Questionnaire (*BPAQ*)

DISCUSSION

In our study, the relationship between obsessions and compulsions and aggression in OCD patients was investigated. When the results of the research were examined, it was found that obsessions were related to aggression. In addition, patients with aggression obsessions had significantly higher total aggression scores, verbal aggression, and hostility scores. OCD diagnosis classification in DSM 5 has been changed. OCD, which was previously classified as an anxiety disorder, is now in a different diagnostic category (Goodman et al. 2014). Studies investigating the coexistence of aggression and OCD are few in the literature. In a study examining OCD patients and healthy control groups, higher aggression rates and suppression of aggression were found in OCD patients. In addition, it was observed that the increased sense of responsibility, social acceptance and lack of acceptance of emotions played a mediating role in aggression (Cludius et al. 2021). In another study, it was found that the symptoms of insecurity and covert aggression were higher in OCD patients than in the control group (Moritz et al. 2011). In a similar study conducted in OCD patients, it was observed that aggression was higher in patients with more severe OCD symptoms and that patients had more difficulty in suppressing their anger. Depression, another factor for anger, was also found to affect aggression. However, when the OCD symptoms were evaluated independently from depression, it was observed that the aggression levels were high (Whiteside & Abramowitz 2004). When the psychodynamic and cognitive models in OCD are examined, it is seen that aggression and impulsivity are important in the basis of OCD (Cludius et al. 2021). According to psychodynamic theories, anger and aggression are thought to play an important role in the development of OCD. It is suggested that OCD symptoms can be explained by the basic conflict between love and hatred towards the others. This leads to a strong suppression of feelings of hatred or anger arising from love (Cludius et al. 2021). OCD patients have a very strong superego. One of the cognitive explanations of OCD is the suppression of hidden aggressive impulses in patients and the manifestation of unconscious conflicts as obsessions. Patients develop obsessions as a response by suppressing their unconscious impulses (Fenichel 2014). In studies conducted with OCD patients, it has been reported that indirect aggression impulses are higher, but reflection of anger may be relatively less (Shoval et al. 2006, Moscovitch et al. 2008). Studies investigating the relationship between OCD subtypes and aggression are limited in the literature (Cludius et al. 2021). In our study, it was found that obsessions rather than compulsions were more associated with aggression.

Serotonergic dysfunction is one of the common explanatory factors of OCD and aggression. This dysfunction has long been implicated as a common mechanism in both OCD and impulsive aggression. In treatment, patients respond positively to serotonin reuptake inhibitors. Neurobiologically, it is thought that there may be a relationship between aggression and OCD (Insel et al. 1990, Hollander 1999). In addition, when the studies in the literature are examined, it is seen that aggression and OCD have common aspects in neuroanatomical terms. A number of studies have investigated psychiatric patients who exhibit reactive aggressive behavior such as intermittent explosive disorder, bipolar disorder, OCD, Huntington's disease, and borderline personality disorder. Smaller gray matter volumes have been reported in the right posterior lobules and posterior vermis, as well as in the left anterior lobule, in these studies (Tavano et al. 2007, Bolduc & Limperopoulos 2009). A recent voxel-based morphometry (VBM) mega-analysis showed increased gray matter volume in the bilateral cerebellum in OCD patients and a significantly decreased volume in the inferior frontal gyrus, which extends to the dorsal medial prefrontal cortex, anterior cingulate cortex, and anterior insula (De Wit et al. 2014). It has also been reported that OCD patients show a significant reduction in gray matter volume in the bilateral medial prefrontal cortex, right premotor area, right orbitofrontal cortex, right dorsal lateral prefrontal cortex, and bilateral temporal and occipital regions (Okada et al. 2015). Gray matter volume was found to be significantly lower in patients with intermittent explosive disorder in orbitofrontal cortex, ventral medial prefrontal cortex, anterior cingulate cortex, amygdala, insula and uncus compared to healthy controls and psychiatric controls. These differences were not due to various confounding factors or comorbidity with other disorders previously reported to have decreased gray matter volume. Gray matter volume in these areas was significantly inversely proportional to the level of aggression (Coccaro et al. 2016). In another study investigating the coexistence of aggression and OCD, it was reported that there was a specific relationship between decrease in amygdala volume and aggression/control symptoms in patients with OCD. It was observed that the right amygdala showed more activation when the severity of aggression/control and sexual/religious symptoms was matched with fearful facial expressions (Via et al. 2014). Neuroscientific evidence has shown that aggressive tendencies in mammalian species involve the subcortical limbic circuit, particularly in the midbrain, consisting of the periaqueductal gray, amygdala, and hypothalamus (Wolfs et al. 2022).

In our study, a relationship was found between aggression obsessions and aggression. There are data on

aggression and other psychotic and mood disorders in the literature (Kim et al. 2022, Pan et al. 2022). However, studies investigating the coexistence of OCD and aggression are limited. Patients with higher levels of aggression have lower treatment compliance and recovery rates for their current mental illnesses. In addition, the social functionality of these patients is further impaired (Wagels et al. 2022). Therefore, the role of aggression is important in the treatment of OCD. Family support, psychosocial interventions, supportive therapy models for anger control, regular use of pharmacological drugs will contribute positively to the treatment process of aggression. Treatment of aggression should definitely include psychosocial interventions in addition to pharmacological agents. (Latalova 2009).

As for the limitations, it is a single-center study. In addition, other factors that may affect aggression such as economic status, social life, treatment compliance, were not investigated. However, our study was conducted with OCD patients who had never received any treatment or had no a history of long-term treatment. In this respect, it contains an important sample.

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CONCLUSION

Aggression is a clinical condition that increases the symptoms of mental illness, as in OCD. In the treatment of OCD, interventions for aggression will positively affect the disease process. However, studies on this subject are limited in the literature. The coexistence of aggression and OCD is an important issue for clinicians. More research on this subject is needed in the literature.

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