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Difficulty in Emotion Regulation, Metacognition, Psychiatric Symptoms, and Suicide Probability in Obsessive-Compulsive Disorder

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ABSTRACT

Background: Although an association has been newly reported between obsessive-compulsive disorder (OCD) and an increased risk of suicide, there are only a limited number of studies investigating suicide-related factors in OCD patients. The aim of this study is to evaluate the relationship between dysfunctional metacognitive activity, difficulty in emotion regulation, anxiety, depression, somatization symptom severity, and suicide probability in OCD patients by comparing them with a control group.

Methods: Difficulties in Emotion Regulation Scale, Metacognition Scale, Suicide Probability Scale, and Patient Health Questionnaire Somatic, Anxiety, and Depression Symptom Scale were administered to 70 OCD patients and 70 healthy controls. The Dimensional Obsession Compulsion Scale was administered to assess OCD symptom dimensions among OCD patients.

Results: Dysfunctional metacognition, difficulty in emotion regulation, probability of suicide, depression, anxiety, and somatization symptoms were significantly higher in OCD patients compared to the control group ($P < .05$). Suicide probability was found to be positively correlated with depression, difficulty in emotion regulation, impulsivity dimension, metacognition, cognitive confidence dimension, contamination, cleaning, and symmetry scores among OCD symptom dimensions ($P < .05$).

Conclusion: Recognizing the factors that were found to be associated with suicide probability in individuals with OCD may be of great importance in identifying patients at higher suicide risk.

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INTRODUCTION

Obsessive-compulsive disorder (OCD), which mostly has a chronic course, is an important cause of decreased quality of life. Obsessive-compulsive disorder is defined as the presence of either or both obsessions and compulsions, according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).[1] Obsessions are involuntary, long-lasting thoughts, ideas, or distress that cannot be controlled. Compulsions, on the other hand, are behaviors that a person performs to relieve distress.

When psychiatric disorders are evaluated, OCD is associated with a relatively low risk of suicide compared to other disorders, so suicide and related factors in OCD have been less studied. However, existing evidence suggests that suicide rates are at a significant level in OCD patients and that suicidal ideation and attempts may be associated with the diagnosis of OCD. Estimates of studies reporting a relationship between OCD and suicidal ideation range from 27% to 62%, which shows that this relationship has not been adequately addressed.[2,3]

Metacognition consists of beliefs and evaluations about one's own thoughts and ability to monitor and regulate cognition.[4] Higher levels of dysfunctional metacognition have been associated with OCD.[5] In addition, metacognitive beliefs, with or without a psychiatric diagnosis, predispose to psychological distress.[6,7] Although suicidal ideation and suicidal metacognitive beliefs have been investigated,[8] the relationship between suicide and metacognition has not been evaluated in patients with OCD.

Emotional regulation difficulties are defined as the deterioration of emergency skills such as being conscious and aware of emotions, accepting emotions, controlling impulsive behaviors, and acting in line with targeted goals.[9] There are studies stating that emotional regulation difficulties predict OCD symptom severity.[10,11] Several studies have investigated the link between suicidal behavior and emotion regulation within specific diagnostic categories.[12,13] However, there is no study investigating OCD.

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The relationship between psychiatric symptoms and suicide in OCD patients was evaluated, and an increase in the severity of depressive and anxiety symptoms was found to be associated with suicide.[14] In addition to these symptoms, hopelessness, previous suicide attempts, and increased obsession were also associated with suicide.[14] In addition, suicidal thoughts were associated with female gender, contamination obsessions, and cleaning compulsions in patients with OCD without depression.[3] The relationship between some accompanying symptoms and sociodemographic characteristics with suicide was investigated in patients with OCD; however, the relationship between the severity of somatic complaints and suicide was not assessed.

When the literature is evaluated, it is seen that suicide and related factors are not adequately evaluated in patients with OCD. It is possible that these related factors are "dysfunctional metacognitive activity, difficulty in emotion regulation, anxiety, depression, and somatization symptoms" and that there is a difference in the OCD group compared to the control group in terms of these factors. Our study will contribute to our knowledge in this field in the literature.

Therefore, the aim of this study was to evaluate the relationship between dysfunctional metacognitive activity, difficulty in emotion regulation, anxiety, depression, somatization symptoms, and suicide probability in newly diagnosed OCD patients by comparing them with a control group.

MATERIAL AND METHODS

Sample

A priori power analysis was performed with G*Power version 3.1.9.4 to determine the minimum sample size required for the study. With an *a* error of 0.05 and a power of 80%, the sample size was calculated as at least 64 patients per group to detect a medium effect. Patients aged 18-53 who were newly diagnosed with OCD were considered eligible for this study. Diagnoses were made by 1 psychiatrist through clinical evaluation according to DSM-5 (American Psychiatric Association 2013) diagnostic criteria. Exclusion criteria included mental retardation and cognitive impairment, alcohol and/or substance use disorders, physical diseases that may cause neurological or somatic symptoms, psychotic disorders, and bipolar disorders other than OCD diagnosis. A total of 75 people, who applied to the Harakani State Hospital Psychiatry outpatient clinic between March 1, 2022, and January 1, 2023, were diagnosed with OCD according to the DSM-5 criteria and evaluated. Since 4 people refused to participate in the study and 1 person was diagnosed with fibromyalgia, the study was continued with 70 people. In addition, 7 people had depressive disorder and 4 people had generalized anxiety disorder as comorbid to OCD in the patient group. A control group was formed from 70 hospital employees who were compatible with the OCD group in terms of gender and age and had no history of psychiatric disease or no complaints. This study was conducted in accordance with the 1964 Declaration of Helsinki and its later amendments. Before starting this study, approval was obtained from the Ethic Committee of the Faculty of Medicine of Kafkas University with the letter numbered 80576354-050-99/59 in the session numbered 02 on February 23, 2022. Written informed consent was obtained from the participants who met the inclusion criteria and agreed to participate in the study.

MAIN POINTS

- The relationship between obsessive-compulsive disorder (OCD) and suicide probability has not been adequately addressed.
- The aim of this study was to evaluate the relationship between dysfunctional metacognitive activity, difficulty in emotion regulation, anxiety, depression, somatization symptom severity, and suicide probability in OCD patients.
- Difficulties in emotion regulation, dysfunctional metacognitive activity, probability of suicide, anxiety, depression, and somatic symptoms were found to be higher in OCD patients than in the control group.
- The probability of suicide in OCD patients was positively correlated with the types of obsessions such as contamination, cleanliness and symmetry, the Difficulties in Emotion Regulation Scale impulsivity dimension, the Metacognition Scale cognitive confidence dimension, and depression symptom score.
- The higher incidence of factors we evaluated in OCD patients and their association with suicide probability may be useful to identify individuals at risk of suicide.

Data Collection Tools

Sociodemographic Data Form: A questionnaire prepared by the authors was applied to obtain information about the sociodemographic characteristics of the patients.

Dimensional Obsessive-Compulsive Scale (DOCS): It is a 5-point Likert-type scale consisting of 20 questions. The scale assesses the severity and avoidance of obsessive-compulsive symptoms. A high score indicates a high symptom severity. It consists of obsessions and compulsions, contagion, responsibility for harming and making mistakes, symmetry/order, and unacceptable thoughts. There is a Turkish validity and reliability study.[15] In the validity and reliability study, Cronbach's alpha value was 0.87 for the whole scale. In our study, the Cronbach's alpha value for the whole scale was 0.78.

Difficulties in Emotion Regulation Scale (DERS): It evaluates difficulties in emotion regulation under the subheadings of non-acceptance, goals, drive, awareness, strategies, and clarity. It is a 5-point Likert-type self-report scale consisting of 36 items. A higher score obtained from the scale indicates that individuals have so much difficulty in regulating their emotions. The Turkish validity and

reliability study was performed by Ruganci and Gencoz.[16] They suggested removing item 10 in the Turkish form. As suggested in our study, a 35-item form was used. In the validity and reliability study, Cronbach's alpha value was 0.94 for the whole scale. In our study, the Cronbach's alpha value for the whole scale was 0.90.

The Patient Health Questionnaire Somatic, Anxiety, and Depression Scale: It is a self-report scale consisting of 4 sections: somatic symptoms, anxiety symptoms, depressive symptoms, and panic sections. The first 3 sections were used in this study. Scores of 5, 10, and 15 in all 3 sections indicate mild, moderate, and severe symptoms, respectively. There is a Turkish validity and reliability study.[17] In our study, no cutoff point was used, and the total scores of the modules were used to evaluate the severity of depression, anxiety, and somatic symptoms. In the validity and reliability study, Cronbach's alpha value was 0.92 for the whole scale. In our study, the Cronbach's alpha value for the whole scale was 0.93.

Metacognition Scale (MCQ): It is a 4-point Likert-type scale consisting of 30 questions. The scale consists of 5 subdimensions: positive beliefs, uncontrollability and danger, need to control thoughts, cognitive self-consciousness, and cognitive confidence. A high score on the scale indicates an increase in nonfunctional metacognitive activity. The validity and reliability study of the scale was performed by Tosun and Irak.[18] In the validity and reliability study, the Cronbach's alpha value was 0.86 for the whole scale. In our study, the Cronbach's alpha value for the whole scale was 0.88.

Suicide Probability Scale (SPS): The scale was developed to assess the risk of suicide. It is a 4-point Likert-type self-report scale consisting of 36 items. The scale includes 4 subheadings, such as hopelessness, suicidal ideation, negative self-evaluation, and hostility. High scores from the scale indicate a high probability (risk) of suicide. The Turkish validity and reliability study for the clinical sample group was performed by Atlı et al.[19] In this study, the cutoff score was specified as 110. A cutoff score was not used in our study; a scale score was used for suicide probability levels. In the validity and reliability study, the Cronbach's alpha value was 0.89 for the whole scale. In our study, the Cronbach's alpha value for the whole scale was 0.95.

Statistical Analysis

All statistical analyses were conducted using Statistical Package for the Social Sciences (SPSS) for Windows version 21.0 (IBM SPSS Corp.; Armonk, NY, USA). In our study, descriptive statistics were used to calculate frequencies and percentage values for categorical variables and mean and median values for continuous variables. The Kolmogorov–Smirnov test was used for normality analysis. In our study, descriptive statistics were used to calculate frequencies and percentage values for categorical variables and for continuous variables those with a normal distribution were shown as mean ± SD and those without a normal distribution were shown as median (maximum-minimum). The Independent sample *t*-test was used to compare the numerical values that showed a normal distribution, the Mann–Whitney *U*-test was used for those that did not show a normal distribution, and the chi-square test was used to compare categorical values. The Spearman correlation coefficient was used for the correlation coefficient. $P < .05$ was considered statistically significant.

RESULTS

The OCD group consisted of 34 (51.4%) male, 36 (48.6%) female, 24 (34.3%) married, 46 (65.7%) single, 30 (42.9%) employed, and 40 (57.1%) unemployed participants. The mean age was 27.86 ± 8.82 and the mean duration of education was 12.69 ± 2.61 years. The control group consisted of 32 (45.7%) male, 38 (54.3%) female, 30 (42.9%) married, 40 (57.1%) single, 36 (51.4%) employed, and 34 (48.6%) unemployed participants. The mean age was 29.91 ± 5.23 and the mean duration of education was 13.14 ± 3.03 years. There was no significant difference between the groups in terms of these variables (all $P > .05$). Evaluation of the OCD group in terms of the dominant obsession dimension showed that 22 (31.4%) people were dominated by contamination and cleaning, 8 (11.4%) people were dominated by responsibility for harming and making mistakes, 26 (37.2%) people were dominated by unacceptable thoughts, and 14 (20%) people were dominated by symmetry. There was no participant who had suicide attempt in both groups (Table 1).

Table 1. Sociodemographic Characteristics of OCD and Control Group and OCD Dominant Obsession Dimension

	OCD	Control	*P*
Variable			
Age, mean ± SD	27.86 ± 8.82	29.91 ± 5.23	.095
Education (years), mean ± SD	12.69 ± 2.61	13.14 ± 3.03	.341
Gender, n (%)			.735
Male	34 (51.4)	32 (45.7)	
Female	36 (48.6)	38 (54.3)	
Marital status, n (%)			.298
Married	24 (34.3)	30 (42.9)	
Single	46 (65.7)	40 (57.1)	
Working status, n (%)			.310
Employed	30 (42.9)	36 (51.4)	
Unemployed	40 (57.1)	34 (48.6)	
Suicide attempt, n (%)	0 (0)	0 (0)	
OCD dimension, n (%)			
Contamination and cleaning	22 (31.4)		
Responsibility for harming and making mistakes	8 (11.4)		
Unacceptable thoughts	26 (37.2)		
Symmetry	14 (20)		

OCD, obsessive-compulsive disorder.

Table 2. Comparison of OCD and Control Groups in Terms of Scale Scores

	OCD Mean ± SD/ median (minimum-maximum)	Control Mean ± SD/ median (minimum-maximum)	*P*
ADS—somatic score	9.00 (0.00-28.00)	1.00 (0.00-22.00)	<.001**
ADS—anxiety score	15.00 (5.00-21.00)	1.00 (0.00-14.00)	<.001**
ADS—depression score	16.00 (5.00-27.00)	1.00 (0.00-18.00)	<.001**
DERS—awareness	17.00 (11.00-28.00)	16.00 (12.00-28.00)	.514**
DERS—clarity	13.55 ± 3.97	11.89 ± 3.29	.010*
DERS—non-acceptance	19.39 ± 6.04	13.43 ± 3.61	<.001*
DERS—strategies	28.00 (10.00-38.00)	16.00 (9.00-27.00)	<.001**
DERS—impulsivity	20.16 ± 5.32	13.83 ± 3.28	<.001*
DERS—goals	19.00 (9.00-25.00)	14.00 (10.00-22.00)	<.001**
DERS—total	117.13 ± 18.56	84.97 ± 11.50	<.001*
MCQ—positive beliefs	13.09 ± 4.99	14.57 ± 4.47	.068*
MCQ—uncontrollability and danger	16.62 ± 4.45	12.29 ± 2.43	<.001*
MCQ—cognitive confidence	14.00 (6.00-21.00)	15.00 (7.00-19)	.620**
MCQ—need to control thoughts	18.00 (10.00-24.00)	15.00 (8.00-19.00)	<.001**
MCQ—cognitive self-consciousness	17.59 ± 3.82	14.63 ± 2.44	<.001*
MCQ—total	79.71 ± 14.41	68.94 ± 9.02	<.001*
SPS—hopelessness	33.00 (18.00-41.00)	18.00 (9.00-39.00)	<.001**
SPS—suicide ideation	22.0 (8.00-28.00)	9.00 (8.00-27.00)	<.001**
SPS—negative self-evaluation	21.00 (14.00-26.00)	12.00 (8.00-31.00)	<.001**
SPS—hostility	15.97 ± 4.73	9.66 ± 2.65	<.001*
SPS—total	94.00 (46.00-108.00)	50.00 (37-114)	<.001**

ADS, The Patient Health Questionnaire Anxiety Depression Scale; DERS, Difficulties in Emotion Regulation Scale; MCQ, Metacognition Scale; OCD, obsessive-compulsive disorder; SPS, Suicide Probability Scale.
**P* for independent sample *t*-test.
***P* for Mann-Whitney *U*-test.

Comparison of the mean scores of the OCD and control groups revealed that ADS somatic, anxiety, and depression scores, DERS total score and non-acceptance, goals, impulsivity, strategies subdimension scores, MCQ total score, MCQ uncontrollability and danger, need to control thoughts, cognitive self-consciousness subdimension scores, SPS total score, hopelessness, suicide ideation, hostility, and negative self-evaluation subdimension scores were higher in the OCD group at a significance level of $P < .001$, and DERS clarity subdimension score was higher in the OCD group at a significance level of $P = .010$. There was no significant difference between the groups in terms of DERS awareness subdimension, MCQ positive belief, and cognitive confidence subdimension scores ($P = .514$, $P = .068$, and $P = .620$, respectively) (Table 2).

Evaluation of the relationship between scale scores and duration of education with the probability of suicide revealed a weak positive ($r = 0.283 r = 0.283$, $P = .019$) correlation between the total SPS score and the ADS score, a weak positive ($r = 0.267$, $P = .039$) correlation with the DERS impulsivity score, a weak positive ($r = 0.315$, $P = .010$) correlation with the MCQ cognitive confidence score, and a weak positive ($r = 0.230$, $P = .038$, $r = 0.222$, $P = .047$) correlation with the DOCS contamination, and cleaning and symmetry scores (Table 3).

DISCUSSION

In this study, the probability of suicide, metacognitive activity, difficulty in emotion regulation, anxiety, depression, and somatization symptoms were evaluated in patients with OCD who presented to the clinic for the first time and had not received treatment before. It was observed that emotion regulation difficulty, negative metacognitive activity, suicide probability, and anxiety, depression, and somatic symptoms were higher in patients with OCD compared to the control group. The probability of suicide in patients with OCD was found to have a positive relationship with contamination, cleaning and symmetry as symptoms of depression, the DERS impulsivity dimension, the MCQ cognitive confidence dimension and the obsession type.

In our study, the probability of suicide was found to be significantly higher in OCD patients compared to the control group, similar to previous studies. The available literature shows that suicidal ideation and related behaviors are

Table 3. Correlation of Suicide Probability with Scale Scores and Education

	SPS	
	r	*P*
ADS—somatic score	0.196	.110
ADS—anxiety score	0.065	.600
ADS—depression score	0.283	.019
DERS—awareness	-0.148	.259
DERS—clarity	0.219	.072
DERS—non-acceptance	-0.052	.692
DERS—strategies	0.014	.914
DERS—impulsivity	0.267	.039
DERS—goals	0.210	.107
DERS—total	0.097	.463
MCQ—positive beliefs	-0.086	.494
MCQ—uncontrollability and danger	0.126	.315
MCQ—cognitive confidence	0.315	.010
MCQ—need to control thoughts	0.166	.182
MCQ—cognitive self-consciousness	0.028	.821
MCQ—total	0.147	.238
Education	0.062	.614
DOCS—contamination and cleaning	0.230	.038
DOCS—responsibility Responsibility for harming and making mistakes	0.083	.501
DOCS—unacceptable thoughts	0.006	.963
DOCS—symmetry	0.222	.047
DOCS—dominant obsession dimension score	-0.138	.261

ADS, The Patient Health Questionnaire Anxiety Depression Scale; DERS, Difficulties in Emotion Regulation Scale; DOCS, Dimensional Obsessive-Compulsive Scale; MCQ, Metacognition Scale; OCD, obsessive-compulsive disorder; SPS, Suicide Probability Scale.

common in OCD.[20] In a comprehensive systematic review study, it was reported that there was a significant relationship between OCD and suicide attempts, suicidal thoughts, and suicidal tendencies.[14] In addition, OCD severity has been shown to increase suicidal ideation.[20]

Our study findings showed that patients with OCD scored higher in all DERS dimensions compared to the control patients, except for the awareness subdimension. Considering that the age and duration of education were similar between the groups, it can be concluded that DERS may be specific to patients with OCD consistent with previous studies.[21,22] However, in one of the previous studies, 20 people in the OCD group were included, and in the other study, psychotropic treatment was used. Our study is valuable in terms of sample size and consists of untreated patients. In addition, the DERS impulsivity dimension was found to be positively associated with the probability of suicide in our study. Emotion regulation difficulties were shown to be an independent risk factor for suicide attempts and suicidal ideation.[23] However, in our study, the probability of suicide was only associated with emotional impulsivity, which is consistent with previous research showing that impulsivity predicts suicide attempts.[24] This may be related to the fact that people with emotional dysregulation and impulsivity are more likely to take risks and engage in dangerous behaviors. It should be emphasized that emotional impulsivity may play a key role in suicidal tendencies in patients with OCD.

Some previous studies reported similar metacognition between healthy controls and individuals with OCD.[25] In this study, the fact that OCD patients have dysfunctional metacognition related to "uncontrollability and danger," "need to control thoughts," and "cognitive self-awareness" compared to healthy controls is consistent with the results of the study conducted with OCD in Turkey.[26] While the previous study was conducted with a sample group with a mean disease duration of 8 years, our study includes the newly diagnosed patient group. This result shows that there is a significant need for excessive control in patients with OCD and that these patients are ruminatively interested in their own world of thought. Moreover, we found a positive relationship between dysfunctional metacognition and suicide probability, which was only associated with cognitive confidence (lack of confidence in memory and attention abilities) among metacognition scores. There is no previous study evaluating the relationship between metacognitive dysfunction and suicide in patients with OCD, which may be related to accompanying depressive symptoms in patients with OCD and a consequent decrease in self-esteem, focus on negative processes, and generalization.

Obsessive-compulsive disorder is a disorder with various symptom dimensions. Different results were found in studies evaluating obsessions, compulsions, and suicidal ideation. While Groupta et al. found a positive correlation between the obsession with contamination and cleaning compulsion and lifelong suicidal ideation[3], some studies stated that symmetry obsession and order compulsion were predictors of suicide.[29,30] On the other hand, there are also studies showing that higher disease severity is associated with higher suicidal ideation.[3,31] Previous studies consisted of patients who received treatment; only 1 study[27] evaluated the group of patients who did not receive treatment, as in our study. Only 1 study is longitudinal;[28] other studies are cross-sectional, as in our study. Our study revealed a positive relationship between suicide probability and contamination, cleanliness, and symmetry obsessions, while no relationship was found between suicide probability and symptom severity, which may indicate that symptom dimension plays a greater role in suicide probability compared to symptom severity.

The relationship between depressive symptoms and suicide in OCD patients was investigated, and a positive correlation was found between the severity of depressive symptoms, suicidal ideation, and lifelong suicide attempts.[32,33]

Considering the role of accompanying anxiety disorders in suicidal behavior, especially generalized anxiety disorders, increases the risk of suicidal ideation and lifelong suicide attempt.[32] In addition, the accompanying anxiety disorder may play a preventive role for fatal suicide attempt.[34] In our study, accompanying symptoms were classified as depressive, anxious, and somatic, and all 3 symptom dimensions were found to be significantly higher in the OCD group than in the control group. However, evaluation of their relationship with the probability of suicide only revealed a positive relationship with depressive symptom severity. Although OCD was accompanied by various symptoms, depressive symptoms were prominently correlated with suicide.

There were some limitations to our study. Groups were formed according to the characteristics of the dominant obsession dimension due to an insufficient sample size; therefore, the scale scores could not be compared. The limitations arising from the cross-sectional design of our study and the use of self-reports as data collection tools may be reflected in our findings, and longitudinal studies are needed for more valid evidence. Depressive and anxiety symptoms were evaluated in this study, but a small number of individuals who met the diagnostic criteria for depressive disorder and generalized anxiety disorder were also included in this study. In addition, variables likely to be associated with suicide, such as personality traits, social and economic stressors, and a history of past childhood trauma, were not evaluated in this study. In future studies, longitudinal studies may be conducted to evaluate these factors and treatment modalities that may be associated with suicide, together with the parameters we evaluated in patients with OCD.

In our study, it was observed that emotion regulation difficulty, dysfunctional metacognitive activity, suicide probability, anxiety, depression, and somatic symptoms were higher in patients with OCD compared to the control group. In addition, it was found that the probability of suicide in patients with OCD had a positive relationship with contamination, cleaning, and symmetry as symptoms of depression, the DERS impulsivity dimension, the MCQ cognitive confidence dimension, and obsession type. The higher incidence of factors we evaluated in patients with OCD and their association with suicide probability may be useful to identify individuals at risk of suicide. In addition, it may offer an opportunity to reduce suicide through early intervention.

Ethics Committee Approval: This study was approved by Ethics Committee of Kafkas University (Approval No: 80576354-050-99/59, Date: February 23,2022).

Informed Consent: Informed consent was obtained from the patients who agreed to take part in the study.

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