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Association between suicide idea and anxiety sensitivity in obsessive-compulsive disorder: A controlled study

Obsesif-kompülsif bozukluk hastalarında anksiyete duyarlılığı ve intihar düşüncesi arasındaki ilişki: Kontrollü çalışma

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Abstract

Aim: Obsessive-compulsive disorder (OCD) is associated with suicide risk, but controversy remains about the frequency and burden of suicidality in OCD. This study aimed to identify the relationship between anxiety sensitivity and suicidal idea in patients with OCD.

Methods: This controlled study included 36 OCD patients and 36 healthy controls. All individuals were evaluated with Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Anxiety Sensitivity Index-3 (ASI-3) and Suicide Probability Scale (SPS). Demographic data were obtained from each patient.

Results: Seventy-two individuals with a mean age of 31.89 (9.69) years were included in this study. No significant differences were found between the groups with regards to individual and family histories of suicide attempt and the presence of other chronic diseases ($P>0.05$ for each). The patients had significantly higher BDI, BAI and ASI-3 scores than the controls ($P>0.05$ for each). There were significant correlations between BDI, BAI, ASI-3 and SPS desperation, suicide ideation scores, hostility scores and total scores ($P<0.05$ for each).

Conclusion: The present study revealed that depression and anxiety status are important for suicide risk in OCD patients. Therefore, it is recommended to always evaluate the risk of suicide in these patients.

Keywords: Obsessive-compulsive disorder, Anxiety, Depression, Suicidality

Öz

Amaç: Obsesif kompulsif bozukluk (OKB) intihar riski ile ilişkilidir, ancak OKB'de intihar sıklığı ve yükü konusunda hala bir tartışma vardır. Bu çalışmanın amacı obsesif-kompülsif bozukluk (OKB) hastalarındaki anksiyete duyarlılığı ile intihar düşüncesi arasındaki ilişkiyi saptamaktır.

Yöntemler: Bu kontrollü çalışma 36 OKB hastası ve 36 sağlıklı kontrolü içermekteydi. Tüm olgular Beck Depresyon Skalası (BDS), Beck Anksiyete Skalası (BAS), Yale-Brown Obsesyon Kompülsiyon Ölçeği (YBOKÖ), Anksiyete-Sensivite İndeksi-3 (ASI-3) ve İntihar Olasılığı Ölçeği (İOÖ) ile değerlendirildi. Demografik veriler her hastadan kayıt edildi.

Bulgular: Yetmiş iki olgu çalışmaya dahil edildi. Ortalama yaş 31,89 (9,69) idi. Gruplar arasında intihar girişim hikâyesi, ailede intihar girişim hikâyesi ve herhangi bir kronik hastalık varlığı açısından fark yoktu. BDS, BAÖ ve ASI-3 skorları hasta grubunda kontrol grubuna göre anlamlı olarak daha yüksekti ($P>0,05$). BDS, BAÖ, ASI-3 ve İOÖ umutsuzluk, intihar düşüncesi, düşmanlık ve total skorları arasında anlamlı korelasyonlar saptandı ($P>0,05$).

Sonuç: Bu çalışma depresyon ve anksiyete durumunun OKB hastalarında intihar riski için önemli olduğunu saptamıştır. Bu nedenle OKB tanısı alan hastaların intihar düşüncesi açısından her zaman değerlendirilmesi önerilir.

Anahtar kelimeler: Obsesif-kompülsif bozukluk, Anksiyete, Depresyon, İntihar

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Introduction

Obsessive-compulsive disorder (OCD), which affects about 2% of general population [1], is associated with suicide risk. Previously, this risk was considered low because these patients were thought to successfully suppress aggressive impulses [2] but recent reviews and meta-analyses showed that risk of suicide in OCD is higher than estimated [3]. Suicide idea without attempt is determined as an important predictor for suicide attempts [4,5]. If risk factors for ongoing suicide idea are examined carefully, clinicians can protect OCD patients against future suicide attempts. Controversy remains about the frequency and burden of suicidality in OCD. A meta-analysis by Khan et al. showed that mortality rate due to suicide in OCD patients with distinct anxiety disorders was 0.08% [3]. In the meta-analysis of Angelakis et al. [6], although the methodological qualities of the included studies were low, there was a significant association between OCD and suicidality with two different subtypes (suicide attempts and suicidal ideation). On the other hand, in 2019, Albert and colleagues reviewed 31 studies about suicide risk and OCD and revealed that suicidality appears a relevant condition in patients with OCD [7].

Anxiety sensitivity is an important individual difference factor that has been linked to suicidal idea [8]. Also, comorbid anxiety symptoms severity can be a suicide risk predictor in patients with OCD [9]. Therefore, clinicians should be aware of the anxiety severity in OCD patients in terms of suicide risk.

Finally, there is conflicting evidence about the relationship between suicidal behavior and OCD. This study aimed to identify and explore the clinical and demographic factors associated with suicidal idea in OCD patients.

Materials and methods

Study design

The study protocol of this controlled trial was approved by the Sakarya University Ethics Committee on 26/06/2020 with the number 26/06/2020-376. All participants were informed of the study and signed written informed consents before interventions. The study included 36 patients who visited the Psychiatry Outpatient Clinic of Sakarya Yenikent State Hospital between 29 June 2020 and 31 August 2020.

Participants and sample size calculation

The present study was conducted on 36 patients diagnosed with OCD (patient group) based on DSM-5 criteria, and 36 healthy individuals (control group). All patients in the study gave informed consent. The only inclusion criterion was being aged between 18 and 65 years. Exclusion criteria included having any other neurological conditions which may affect cognitive functions. With an α error of 0.05 and a power of 80%, the sample size was calculated as at least 18 patients per group.

Measurements

Beck Depression Inventory (BDI), Anxiety Sensitivity Index-3 (ASI-3), Suicide Probability Scale (SCS), Beck Anxiety Inventory (BAI), and Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) were used to evaluate all individuals. Demographic information was obtained from each patient. OCD was diagnosed with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) [10] by a trained psychiatrist, which was also useful in excluding any other psychiatric disorders among the study groups. The Turkish version of the scale was used [11].

Beck Depression Inventory (BDI)

BDI is a 21-item survey evaluating items related to the depression symptoms i.e., irritability, hopelessness, feelings of guilt or being punished, cognitive problems, physical symptoms such as fatigue, lack of sexual desire, and weight loss. A score ≥17 indicates having depression [12]. The validation study of the Turkish BBS was performed by Hisli et al [13].

Beck Anxiety Inventory (BAI)

BAI is 21-item self-report questionnaire originally developed to differentiate clinical anxiety from normal anxiety [14]. The validation study of the Turkish BAI was performed by Ulusoy et al. [15].

Anxiety Sensitivity Index-3 (ASI-3)

ASI-3 includes 18 items which assess anxiety-related physical, cognitive, or social concerns. Items are rated on a 5-point Likert scale from very little (0) to very much (4), with subscale scores ranging from 0 to 24 and total scores ranging from 0 to 72 [16]. The validation study of the Turkish ASI-3 was performed [17].

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)

Y-BOCS is a scale that measures how severe the obsessive-compulsive symptoms are. Scores range between 0 (no symptoms) and 4 (severe symptoms), and a total score is obtained by summing 10 items and can range between 0 and 40 [18]. Ranges of severity include subclinical (0 to 7 points), mild (8 to 15 points), moderate (16–23 points), severe (24 to 31 points) and extreme (32 to 40 points). The validation study of the Turkish Y-BCOS was performed [19].

Suicide Probability Scale (SCS)

This is a 36-item screening scale designed to help assess suicide risk in adolescents and adults [20]. The validation study of the Turkish SCS was performed by Atlı et al. [21].

Statistical analysis

SPSS v21 (SPSS Inc., Chicago, IL, USA) was used to perform all analyses. Shapiro-Wilk test was performed for checking the normality. Data are presented as median (minimum - maximum) or mean (SD) for continuous variables according to normality of distribution and as frequency (percentage) for categorical variables. Normally distributed variables were assessed using the independent samples t-test, and non-normally distributed variables, with the Mann Whitney U test. Chi-square tests or Fisher's exact tests were performed to analyze categorical variables. Pearson and Spearman correlation coefficients were calculated to evaluate relationships between continuous variables. Multiple linear regression analysis (stepwise selection method) was used to determine significant factors of the Suicide Probability Scale scores. Two-tailed *P*-values of below 0.05 were considered statistically significant.

Results

Seventy-two individuals (36 patients and 36 controls) with a mean age of 31.89 (9.69) years [mean (SD); range 19-58] were included in this study. There were 30 (83.33%) females in the patient group and 25 (69.44%) females in the control group. No significant differences were found between groups in terms of age (P=0.255), gender (P=0.267), marital status (P=0.480),

smoking status (P=0.512) and alcohol abuse (P=0.114) (Table 1). The controls had significantly higher education status than the patients (P=0.044). There were 19 (52.78%) unemployed individuals in the patient group while only one (2.78%) unemployed individual in the control group (P<0.001) (Table 1).

In the patient group, 9 (25.00%) individuals were diagnosed with obsessive-compulsive disorder less than a year ago while 12 (33.33%) individuals had this disorder since one to five years and 15 (41.67%) individuals were diagnosed more than five years ago. Fourteen (38.89%) patients were using antidepressants and 5 (13.89%) were using a combination of antidepressants and antipsychotics. Y-BCOS scores were 14.11 (4.94) for obsessive scores, 13.72 (5.35) for compulsive scores and 27.83 (9.94) for total scores (Table 1).

Among the control and patient groups, one (2.78%) and three (8.33%) individuals, respectively, had a history of suicide attempts. In addition, two (5.56%) individuals had a family history of suicide attempt and one (2.78%) had another chronic disease among the patient group while there were no individuals with family histories of suicide attempts or other chronic diseases among the control group. No significant differences found were between the groups in terms of suicide attempt history (P=0.614), suicide attempt history in the family (P=0.493) and presence of another chronic disease (P=1.000) (Table 1).

The patients had significantly higher Beck Depression Inventory (BDI), Anxiety Sensitivity Index-3 (ASI-3) and Beck Anxiety Inventory (BAI) scores than the controls (P<0.001, P<0.001) and P=0.001, respectively). In addition, Suicide Probability Scale (SPS) desperation, negative self-evaluation and total scores were significantly higher in the patients (P<0.001). No significant differences were found between groups in terms of suicide ideation and hostility scores (P=0.725 and P=0.198 respectively) (Table 1).

There were significant correlations between BDI and SPS desperation scores (r=0.716, P<0.001), SPS suicide ideation scores (r=0.431, P<0.001), SPS hostility scores (r=0.597, P<0.001), SPS total scores (r=0.773, P<0.001), BAI and SPS desperation scores (r=0.559, P<0.001), SPS suicide ideation scores (r=0.330, P=0.005), SPS hostility scores (r=0.496, P<0.001) and SPS total scores (r=0.557, P<0.001), ASI-3 and SPS desperation scores (r=0.603, P<0.001), SPS suicide ideation scores (r=0.444, P<0.001), SPS hostility scores (r=0.590, P<0.001) and SPS total scores (r=0.653, P<0.001). There were no significant correlations between SPS scores, age, and Yale–Brown Obsessive Compulsive Scale scores (P>0.05) (Table 2).

Multiple linear regression analysis determined that the patient group had higher SPS total scores than the control group (P=0.031) (Figure 1) and individuals with higher Beck Depression Inventory scores had higher SPS total scores (P<0.001) (Figure 2, Table 3). Other variables included in the model, namely, age (P=0.756), gender (P=0.258), education status (P=0.557), marital status (P=0.073), employment status (P=0.341), smoking status (P=0.087), alcohol abuse (P=0.895), suicide attempt history (P=0.751), BAI scores (P=0.831) and ASI-3 scores (P=0.301) were insignificant.

Table 1: Summary of individuals characteristics and inventory/scale scores

	Groups		
	Patients Group (n=36) (%)	Control Group (n=36) (%)	*P*-value
Age (range)	27 (19 – 58)	32 (19 – 51)	0.255
Gender			
Female	30 (83.33%)	25 (69.44%)	0.267
Male	6 (16.67%)	11 (30.56%)	
Education status			
Primary school	8 (22.22%)	2 (5.56%)	0.044*
High school	15 (41.67%)	12 (33.33%)	
Higher education	13 (36.11%)	22 (61.11%)	
Marital status			
Single	20 (55.56%)	16 (44.44%)	0.480
Married	16 (44.44%)	20 (55.56%)	
Employment status			
Unemployed	19 (52.78%)	1 (2.78%)	<0.001*
Student	8 (22.22%)	7 (19.44%)	
Employed	9 (25.00%)	28 (77.78%)	
Smoking	4 (11.11%)	7 (19.44%)	0.512
Alcohol abuse	3 (8.33%)	9 (25.00%)	0.114
Duration of disease			
0 - 1 year	9 (25.00%)	-	N/A
1 - 5 years	12 (33.33%)	-	
> 5 years	15 (41.67%)	-	
Suicide attempt	3 (8.33%)	1 (2.78%)	0.614
Suicide attempt in family	2 (5.56%)	0 (0.00%)	0.493
Chronic disease	1 (2.78%)	0 (0.00%)	1.000
Drug usage			
Absent	17 (47.22%)	-	N/A
Antidepressant	14 (38.89%)	-	
Antidepressant + Antipsychotic	5 (13.89%)	-	
Beck Depression Inventory	20.75 (12.85)	10.89 (7.93)	<0.001*
Beck Anxiety Inventory	17 (0 - 47)	6 (0 - 19)	<0.001*
Anxiety Sensitivity Index-3	27.5 (2 - 56)	16 (3 - 56)	0.001*
Yale–Brown Obsessive Compulsive Scale			
Obsessive	14.11 (4.94)	-	N/A
Compulsive	13.72 (5.35)	-	N/A
Total	27.83 (9.94)	-	N/A
Suicide Probability Scale			
Desperation	26.5 (17 - 44)	21 (12 - 33)	<0.001*
Suicide ideation	12 (8 - 25)	12 (8 - 21)	0.725
Negative self-evaluation	23.5 (14 - 32)	17 (9 - 33)	<0.001*
Hostility	14 (8 - 23)	12.5 (7 - 24)	0.198
Total	78.72 (13.16)	64.28 (14.88)	<0.001*

*P>0.05, Data are given as mean (SD) or median (minimum - maximum) for continuous variables according to normality of distribution and as frequency (percentage) for categorical variables

Table 2: Correlations between Suicide Probability Scale scores and age, other inventory/scale scores

		Suicide Probability Scale				
		Desperation	Suicide ideation	Negative self-evaluation	Hostility	Total
Age	r	0.028	-0.058	0.021	-0.145	-0.002
	p	0.816	0.627	0.860	0.225	0.988
Beck Depression Inventory	r	0.716*	0.431*	0.214	0.597*	0.773*
	p	<0.001	<0.001	0.072	<0.001	<0.001
Beck Anxiety Inventory	r	0.559*	0.330*	0.114	0.496*	0.557*
	p	<0.001	0.005	0.340	<0.001	<0.001
Anxiety Sensitivity Index-3	r	0.603*	0.444*	0.129	0.590*	0.653*
	p	<0.001	<0.001	0.281	<0.001	<0.001
Yale–Brown Obsessive Compulsive Scale						
Obsessive	r	-0.060	0.147	-0.099	0.200	0.107
	p	0.729	0.392	0.565	0.243	0.535
Compulsive	r	-0.004	0.156	-0.180	0.210	0.068
	p	0.980	0.364	0.293	0.219	0.694
Total	r	-0.056	0.128	-0.146	0.212	0.090
	p	0.746	0.458	0.395	0.214	0.603

* Correlation is significant at the 0.05 level (2-tailed)

Table 3: Significant factors of the Suicide Probability Scale scores, multiple linear regression analysis

	Unstandardized β	Standardized β	*P*-value	95.0% CI for β	
(Constant)	55.340		<0.001	50.788	59.891
Beck Depression Inventory	0.821	0.611	<0.001	0.574	1.068
Patients	6.350	0.203	0.031	0.612	12.088

Dependent Variable: Suicide Probability Scale scores; R2=0.520; F=37.405; P<0.001, CI: Confidence interval

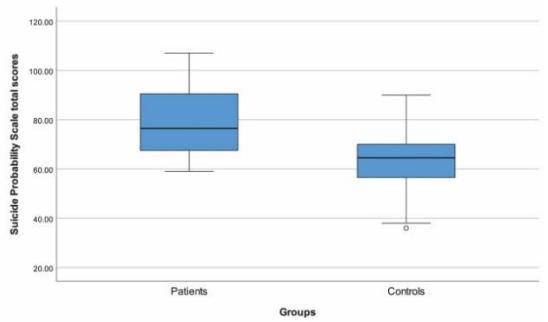

Figure 1: Box-plots of the Suicide Probability Scale total scores with regard to groups

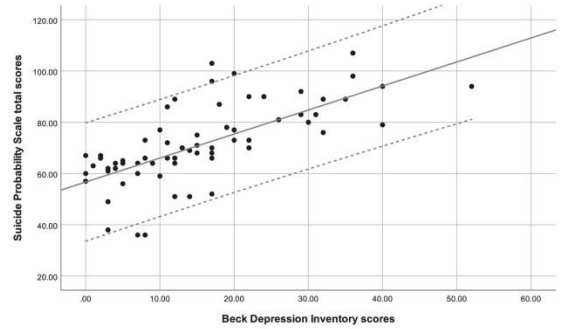

Figure 2: Scatter-dot plot between Suicide Probability Scale and Beck Depression Inventory scores

Discussion

Few studies have evaluated suicidal risk and anxiety sensitivity in patients diagnosed with OCD [22]. Most OCD patients do not have any suicidal ideation or suicide attempts in their lives. Therefore, it is important to identify the predictors for suicidal ideation and attempts of suicide in OCD, to screen subjects at greater risk. This study aimed to explore the features of suicidality in OCD patients and examine the relationship between suicide idea and OCD.

Concerning sociodemographic factors, Albert et al. found that male gender, old age, and poor socioeconomic status were associated with suicide risk [23]. On the other hand, in another study evaluating the suicide risk in OCD patients, the authors found no statistically significant differences between patients having or not having suicide ideas with regards to age [24]. We also did not find any significant differences between age and SPS scores.

Lifetime anxiety disorder is a highly relevant factor in lifelong suicidal idea and suicide attempts after controlling for sociodemographic characteristics and comorbid diseases [25]. In Balcı et al.'s study [24], there were significant correlations between the grade of SI and anxiety severity. Consistent with this study, we found significant correlations between BAI and SPS desperation, suicide ideation scores, hostility scores and total scores. In addition, BAI scores were significantly higher in the OCD group. We evaluated ASI-3 and SPS scores and found significant correlations between ASI-3 and SPS desperation, suicide ideation scores, hostility scores and total scores. There was an association between anxiety sensitivity and suicide idea in study population without OCD. Based on this association, it can be concluded that individuals with OCD can reduce suicide risk by decreasing anxiety sensitivity [7]. In a randomized clinical trial, one session of anxiety sensitivity cognitive concerns intervention was found to provide a significantly higher reduction of anxiety sensitivity and change suicidality at one-month follow-up [26]. Therefore, physicians should be aware of anxiety concerns for reducing the suicide risk in OCD patients.

It is well known that comorbid depression is a major contributor to suicidality [7, 24, 27]. Diacunu et al. [28] evaluated 311 subjects with OCD and divided them into the groups without depression or personality disorders or with pure depression. They revealed that risk for nonfatal suicidal behavior may be increased by the obsessive-compulsive disorder independent of depressive disorders. In a study by Torres et al., comorbid major depressive disease increased the suicide attempt risk 28.75-fold [29]. Consistent with these studies, we found that individuals with higher Beck Depression Inventory scores had higher SPS total scores and there were significant correlations between BDI and SPS desperation, suicide ideation scores, hostility scores and total scores.

There were studies evaluating the relationship between Y-BCOS scores and suicidality. A study by Kamath et al. found that T-BCOS obsession scores were higher in OCD patients with suicide idea and suicide attempts and severity of OCD did not seem a significant risk factor [30]. In another study by Balcı et al. [24] the authors found that although the Y-BOCS scores did not significantly differ between OCD patients with suicide idea and suicide attempts, the severity of OC symptoms was correlated with the level of suicide idea. Unlike these studies, our study did not find any correlations between Y-BCOS scores and SPS scores. This may be due to the small number of patients with suicide attempts in our sample.

Limitations

There are some limitations in this study. First, the power of the analyses performed was reduced because of the small sample size. Second, number of suicidal attempts was only 4 and, logistic regression analysis could not be performed to determine significant risk factors of the suicide attempt. Third, this study did not evaluate some variables associated with suicidal idea such as genetic factors and childhood trauma and did not compare the duration of disease due to small sample size. The open-label characteristic of the study is a factor that can increase researcher bias [31]. On the other hand, unlike most other studies in the literature, this study had a healthy control group for eliminating the factors for suicidality in OCD.

Conclusion

Suicidal behavior is a complicated process because of several demographic and clinical factors. Several contributing factors should be determined by the physicians to detect the suicide risk early. The present study revealed that depression and anxiety status are important for suicide risk in OCD patients. Symptom severity of OCD is related with both ideation of suicide and suicide attempts; therefore, it is recommended to always evaluate the suicidal risk in patients with OCD in terms of ideation of suicide. Further research on larger sample sizes and evaluating subgroups of OCD are needed.

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