Prevalence and risk factors of suicide among patients with obsessive–compulsive disorder

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Introduction
Obsessive–compulsive disorder (OCD) being one of the more common serious mental illnesses continues to be shrouded in shame and secrecy. The aim of this study was to determine the prevalence and risk factors of suicide among patients with OCD.
Methods
The sample consisted of 100 patients recruited from psychiatric outpatient clinics of Zagazig University Hospitals. The included patients had to fulfill the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision criteria for OCD and had to be aged between 20 and 50 years; patients included both sexes and were from all socioeconomic and educational classes. All the participants were subjected to psychiatric assessment for OCD symptoms by the Yale–Brown Obsessive–Compulsive Scale, suicidal ideation by the Beck Suicide Ideation Scale, and asking the patients directly for their history of suicide attempts.
Results
The result of this study represents that the prevalence of suicidal ideations was 21%, failed suicidal trial was 1% (this is a very low rate and statistically neglected), and there were no recorded suicidal cases.
Conclusion
This study concluded that suicidal ideations are a highly prevalent phenomenon in OCD than was thought earlier, and it is strongly interrelated with sociodemographic characteristics.

Keywords:
obsessive–compulsive disorder, prevalence, risk factors, suicide

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Introduction

Obsessive–Compulsive Disorder (OCD) being one of the more common serious mental illnesses continues to be shrouded in shame and secrecy [1]. The lifetime prevalence of OCD is 2% and is characterized by the occurrence of obsessions and/or compulsions, which are time consuming and have a negative impact on the individual's daily activities and in family and social relationships. Torres *et al.* [2] found that participants with uncomplicated OCD had significantly higher rate of suicide attempts than those without any psychiatric disorder (3.6 vs. 0.9%). Suicide is defined as the act of intentionally ending one's own life. Suicidal behaviors are classified more specifically into three categories: suicide ideation, suicide plan, and suicide attempt [3]. Of all OCD patients in the community, 26% had at least one lifetime suicidal attempt [4]. There might be several possible explanations for the relationship between OCD and suicidal tendency. Primarily, the direct effects of the OCD symptoms and higher levels of anxiety, depression, or hopelessness may lead the patients to consider suicide or attempt suicide to escape from their distressing symptoms [5]. The relationship of the content of obsessions and compulsions with suicidal behavior is also an important controversial topic for OCD. Religious obsessions and repeating and reassuring compulsions have been found among suicide attempters compared with nonattempters [6]. The association of religious obsession and suicidal ideation among the clinical population in which religion plays a central role in the society should be examined in further researches by measuring the level of religious beliefs [5]. Aggressive obsessions are socially unacceptable, which may be related to excessive thoughts about the fear of causing harm to self or others. Patients with these obsessions often feel both responsible and guilty for having such thoughts, leading to suicidal ideation [5]. Therefore, the severity of OCD symptomatology, particularly the presence of aggressive obsessions along with depression and hopelessness, should be assessed carefully in the management of suicidal behavior in patients with OCD [7]. Bloch *et al.* [8] found that symmetry/ordering obsessions and compulsions significantly predicted the suicidal behavior in their sample. Clinical and etiopathological correlates have been reported to be associated with this specific symptom dimension, including early age at OCD onset [9] and certain neuropsychological dysfunctions with an impairment of set-shifting tasks [10]. Genetic analysis suggests a substantial familiarity for this symptomatic factor [11,12], and recent neuroimaging studies report the existence of a distinct neuroanatomical substrate associated with these symptoms, involving the right motor cortex, left insula, and left parietal, and bilateral temporal cortices [13]. A specific association pattern between symmetry/ordering symptoms

and certain comorbid conditions has also been described, including bipolar disorder, panic disorder and agoraphobia [9], eating disorders, and substance use disorders [14].

The aim of this study was to determine the prevalence and risk factors of suicide among patients with OCD.

Materials and methods

This study was carried out in Psychiatry Outpatient Clinics of Zagazig University Hospitals in the period between 1 January 2010 and 1 October 2010.

The sample consisted of 100 patients recruited from Psychiatric Outpatient Clinics of Zagazig University Hospitals. To be included in the study, patients had to fulfill the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision criteria for OCD and had to be aged between 18 and 60 years; both sexes were included from all socioeconomic and educational classes. The exclusive criteria were patients with other psychiatric or physical disorders and substance dependence. An informed written consent was obtained from all the participants.

All the patients were subjected to a semistructured psychiatric interview, using the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision criteria for OCD diagnosis and collection of sociodemographic data with regard to age, sex, education, marital status, and employment situation.

The severity of OCD symptoms was detected by the Yale–Brown Obsessive–Compulsive Scale. It has five items about obsessions and five items about compulsions, each with a score ranging from 0 to 4, where 0 = no symptom, 1 = mild symptoms, 2 = moderate symptoms, 3 = severe symptoms, and 4 = extreme symptoms; the maximum total score is 40. Total (Yale–Brown Obsessive–Compulsive Scale) score range of severity for patients who have both obsessions and compulsions is as follows: 0–7 = subclinical, 8–15 = mild, 16–23 = moderate, 24–31 = severe, and 32–40 = extreme.

Table 1 Sociodemographic data of the study group

Variable	Results
Sex, *N* (%)	
Male	61 (61)
Female	39 (39)
Marital status, *N* (%)	
Married	44 (44)
Single	56 (56)
Residence, *N* (%)	
Rural	61 (61)
Urban	39 (39)
Occupation, *N* (%)	
Employed	58 (58)
Unemployed	42 (42)
Education, *N* (%)	
Educated	74 (74)
Noneducated	26 (26)
Home atmosphere, *N* (%)	
Good	65 (56)
Bad	35 (44)
Age of sample (mean ± SD)	29.1 ± 6.5
Age of OCS onset (mean ± SD)	16.8 ± 4.5
Duration of OCS per year (mean ± SD)	6.6 ± 1.1

SD, standard deviation.

Table 2 Comparison between patients with and without suicidal ideations

OCD variables	Negative SI		Positive SI		χ^2	*P* value
	Number	Percentage	Number	Percentage		
Mild	9	100	0	0		
Moderate	36	92	3	7.7		
Severe	34	85	6	15	52.56	0.00
Extreme	0	0	12	100		

OCD, obsessive–compulsive disorder; SI, suicidal ideations.

The cutoff score for clinically significant symptoms is greater than 16 [15].

Detection of suicidal ideation was done by using Beck's Suicide Ideation Scale, which consists of 19 items; five screening items (three items assess the wish to live or the wish to die and two items assess the desire to attempt suicide). If the respondent reports any active or passive desire to commit suicide, then 14 additional items are administered. Each item consists of three options graded according to the intensity of suicidality and rated on a three-point scale ranging from 0 to 2. These ratings are then summed to yield a total score, ranging from 0 to 38 [16].

A history of suicide attempt was assessed retrospectively by directly asking the patients "Have you ever attempted suicide?"

Statistical analysis

The Chi-square analysis was used to compare the sociodemographic characteristics of the study between groups.

$$\alpha = \sum \frac{(0-\mathrm{E})^2}{\mathrm{E}} \text{where} \sum = \text{summation}$$

E, expected value; O, observed value.

Correlation between suicidal ideation and OCD symptoms was made according to Pearson's correlation and was analyzed using the statistical software program SPSS (version 13.0; Cary, North Carolina, USA).

Results

The result of this study represents that the prevalence of suicidal ideations was 21%, failed suicidal trial was 1% (this is a very low rate and statistically neglected), and there were no recorded suicidal cases. Table 1 shows sociodemographic data of the study group (Table 2) in which suicidal ideations were more in the extreme severity of OCD than the other varieties of OCD and the difference was statistically and highly significant. Table 3 shows that suicidal ideations were more in patients with bad home

Table 3 Comparison between suicidal ideations and home atmosphere

Variable	Negative SI		Positive SI		χ^2	*P* value
	Number	Percentage	Number	Percentage		
Good	59	92.5	5	7.5		
Bad	20	63	15	37	15.51	0.00
Total	79	79	21	21		

SI, suicidal ideations.

Table 4 Comparison between suicidal ideations and occupation

	Negative SI		Positive SI			
Variable	Number	Percentage	Number	Percentage	χ^2	*P* value
Employed	52	89.7	6	10.3		
Unemployed	27	64.3	15	35.7	9.45	0.002
Total	79	79	21	21		

SI, suicidal ideations.

atmosphere than patients with good home atmosphere and the difference was statistically and highly significant. Table 4 shows that suicidal ideations were more in nonemployed patients than employed patients and the difference was statistically significant. Table 5 shows that suicidal ideations were more in rural areas than urban areas, but the difference was not statistically significant. Table 6 shows that suicidal ideations were more in educated patients than noneducated patients and the difference was not statistically significant. Table 7 shows that suicidal ideations were more in unmarried patients than married patients and the difference was statistically significant. Table 8 shows that suicidal ideations were more in female patients than male patients and the difference was statistically and highly significant.

Discussion

In earlier studies, suicide had been thought to be an infrequent occurrence in OCD because these patients were often vigilant in warding off aggressive impulses and avoiding potential harm [13]. A recent study [6] showed that OCD was associated with high rates of suicidal ideation and suicide attempt. The rate of suicide attempt in patients with OCD was found to be similar to the rates reported in schizophrenia, unipolar depression, bipolar disorder, alcohol dependence, and personality disorders. The results of this study showed that only one patient had a history of a suicidal trial. These results are in agreement with earlier findings [17–19]; all of them found that suicidal behavior is not a highly prevalent phenomenon in OCD. Goodwin *et al.* [20] found that patients with OCD have been considered at low risk of suicide, as their studies reported suicide rates below 1%. Koran *et al.* [18] described that despite significant impairment in social functioning, patients with OCD are not significantly more likely to attempt suicide than the general US population (3 vs. 2%). Similarly, a cross-sectional assessment of 100 obsessive patients by Kamath *et al.* [6] reported that OCD was associated with high rates of suicide attempts (27%) and suicidal ideation (worst ever: 59%, current: 28%). Similarly, in a sample of Brazilian patients with OCD, Torres *et al.* [2] recently found that 46% of them had suicidal thoughts, 20% had made suicidal plans, and 10% had attempted suicide. In this study,

Table 5 Comparison between suicidal ideations and residence

	Negative SI		Positive SI			
Variable	Number	Percentage	Number	Percentage	χ^2	*P* value
Rural	47	77	14	23		
Urban	32	82	7	18	0.359	0.549
Total	79	79	21	21		

SI, suicidal ideations.

Table 6 Comparison between suicidal ideations and education

	Negative SI		Positive SI			
Variable	Number	Percentage	Number	Percentage	χ^2	*P* value
Educated	56	75.5	18	24.5		
Noneducated	23	88.5	3	11.5	1.896	0.169
Total	79	79	21	21		

SI, suicidal ideations.

suicidal ideations were more in nonemployed patients than in employed patients and the difference was statistically significant. Torres *et al.* and Alonso *et al.* [2,7] found the same result but the difference was not significant. The presence of suicidal ideations in nonemployed patients more than employed patients may be logical. Agerbo *et al.* [21] found that poverty and low income, with concomitantly fewer options and opportunities, correlate with suicide. Although there was no statistically significant difference with regard to the relationship between suicidal ideation and residence in this study, suicidal ideations were more in rural areas than urban areas (14 patients vs. seven patients). The difference may be a result of the increased number of patients from rural areas in our sample (61%) or may be due to low income in rural areas. With regard to the relationship between suicidal ideation and education in this study, suicidal ideations were more in educated patients than in noneducated patients (18 patients vs. four patients) and the difference was statistically not significant. These results are in agreement with the results of Torres *et al.* [2], as they found that suicidal ideations were more in higher educational levels than lower educational levels (five patients vs. two patients); the results are in agreement with the finding of Balci and Sevincok [5] as well. The relationship between suicidal ideation and marital status was studied and it was found that suicidal ideations were more in unmarried patients than in married patients and the difference was statistically significant. This finding is in agreement with the finding of Alonso *et al.* [7]; conversely Balci and Sevincok [5] found that suicidal ideations were more in married patients than in unmarried patients.

The marital status of a patient with OCD will depend on a great number of complex and interrelated factors, including the age of OCD onset, severity and course of the disorder, personality factors, comorbid psychiatric conditions, and even geographical and cultural aspects. Therefore, if any, the relationship between marital status and risk of suicide in OCD is not simple and linear. The topic deserves further analysis because although single status has been described as a risk factor for suicide in general population case–control studies, its role in psychiatric patients is much more

Table 7 Comparison between suicidal ideations and marital status

	Negative SI		Positive SI			
Variable	Number	Percentage	Number	Percentage	χ^2	*P* value
Married	41	93.2	3	6.8		
Single	38	67.9	18	32.1	9.525	0.002
Total	79	79	21	21		

SI, suicidal ideations.

Table 8 Comparison between suicidal ideations and sex

	Negative SI		Positive SI			
Variable	Number	Percentage	Number	Percentage	χ^2	*P* value
Male	55	90	6	10		
Female	24	61.5	15	38.5	11.75	0.001
Total	79	79	21	21		

SI, suicidal ideations.

controversial and several studies also report loneliness as a protective factor against suicide in patients with psychiatric disorders [21,22].

Conclusion

This study concluded that suicidal ideations are a highly prevalent phenomenon in OCD than was thought earlier, and it is strongly interrelated with sociodemographic characteristics.

Recommendation

Further attention and continuous assessment should be given to patients with OCD, as there is a high rate of suicidal ideations. Further researches are needed to evaluate the role of psychiatric comorbidities in suicidal behavior or the thoughts of patients with OCD.

There is no conflict of interest to declare.

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الملخـــص العربـــى

دراسة معدل انتشارالانتحار،الأفكار الانتحارية و محاولات الانتحار في مرض الوسواس القهري

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تم البحث والدراسة على عينة عشوائية من العيادات الخارجية للطب النفسي بمستشفيات جامعة الزقازيق وتم تقييم شدة الوسواس القهري بواسطة مقياس ييل براون للوسواس القهري ، وأعراض الاكتئاب بواسطة قائمة هاملتون لأعراض مرض الاكتئاب ، و أعراض القلق بواسطة مقياس هاملتون لتقدير مدى القلق ، وجرى تقييم الافكار الانتحارية بمقياس بيك للافكار الانتحارية. تظهر نتائج الدراسة أن معدل انتشار الأفكار الانتحارية في الوسواس القهري 21 ٪،كما ارتبطت الافكار الانتحارية في مريض الوسواس القهري مع الاكتئاب و كان الفرق ذو دلالة إحصائية.كما وجد ان الافكارالانتحارية أكثر في المرضى غير العاملين من العاملين و في المرضى المتعلمين من المرضى غير المتعلمين وفي المرضى غير المتزوجين من المرضى المتزوجين و في المرضى الإناث من المرضى الذكور و كانت الفروق ذات دلالة إحصائية وكانت الافكارالانتحارية أكثر في المرضي من المناطق الريفية مقارنة بالمناطق الحضرية ولكن الفرق لم يكن ذو دلالة إحصائية و خلصت الدراسة إلى أن هناك نسبة كبيره من مرضى الوسواس القهري لديهم أفكار انتحارية وهذه النسبة ترتبط ارتباط وثيق بالعوامل الاجتماعية و الديمغرافية للمرضى. وتوصى الدراسة بزيادة الاهتمام والدعم النفسي لمرضى الوسواس القهري وإنشاء قياسات نفسية تتوافق مع البيئة المصرية.