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Cognitive Errors and Psychological Resilience in Patients With Social Anxiety and Obsessive-Compulsive Disorder: A Cross-Sectional Study

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Abstract
Background: Cognitive errors have been presented as effective factors in the creation and continuation of obsessive–compulsive disorder and social anxiety disorder. Psychological resilience is an important factor in the tolerance of cognitive errors.
Objective: The present study aimed to compare cognitive errors and the psychological resilience of patients with social anxiety disorder and those with obsessive–compulsive disorder.
Methods: This cross-sectional study investigated a total of 60 patients, 30 with social anxiety disorder and 30 with obsessive-compulsive disorder (OCD), seen at a hospital in Zanjan city, Iran, in 2017. Participants were aged between 15 and 50 years. Participants were chosen using convenience sampling and on the basis of psychiatrist diagnosis and structured diagnostic interviews (SCID-I, II) according to the inclusion and exclusion criteria. The Cognitive Errors Questionnaire (CET) and the Connor-Davidson Resilience Scale (CD-RISC) were used to assess the variables.
Results: A significant difference was observed between the two patient groups in the cognitive errors components ($P \leq 0.05$). In patients with OCD, the highest average rate of cognitive errors was related to catastrophizing and splitting error. In patients with SAD, the highest mean rate of cognitive errors was related to catastrophizing. There was no significant difference in psychological resilience between the two groups.
Conclusion: Cognitive errors play an important role in OCD and social anxiety disorder (SAD). OCD patients were observed to make more cognitive errors than SAD patients. However, psychological resilience was equal between both groups.
Keywords: Anxiety Disorders, Obsessive-Compulsive Disorder, Cognitive Errors, Psychological Resilience, Patients

1. Background
The recognition, treatment, and prevention of obsessive-compulsive disorder (OCD) and SAD are important, especially because of the high level of comorbidity and precedence these disorders have with other psychological problems, like substance abuse and major depressive disorder.[1] The prevalence of OCD is about 10%, while the prevalence of social anxiety disorder ranges between 3% and 13% in the world.[2] All cognitive theories have pointed to the role of important factors, e.g., distortions and cognitive errors, in the creation and maintenance of psychological disorders.[3] Cognitive errors are one of the main characteristics of various types of psychological disorders, especially internalized ones like OCD, generalized anxiety disorder (GAD), post-traumatic stress disorder (PTSD) and social anxiety disorder (SAD).[4]

Some cognitive errors made by people with OCD include over-estimation of risk and over-responsibility. In people with social anxiety, these errors include less self-assessing of one's abilities, over-estimating risk, and catastrophizing.[5] There is a positive correlation between anxiety symptoms and negative automatic thoughts (NATs). This correlation

is especially high in SAD patients.[6] In fact, there is a positive correlation between symptoms of psychological disorders and levels of NATs; the more intense these thoughts are, the less one feels in control over events.[7] Continuous stress can cause persistent pressure in the structure and functioning of the brain's circuits and change one's behavior.[8]

According to this finding, the concept of resilience is crucial for people with psychological disorders. Resilience refers to constructive and positive adaptation in dealing with problems and difficulties.[9] While definitions of resilience may vary, most researchers believe that resilient people have similar factors, including higher intelligence, greater problem-solving skills, less affluent peers, and non-abuse of substance and delinquency. Furthermore, an effective feature in resilience is the ability to establish self-regulation or self-control.[10] Individuals with a higher psychological resilience can better tolerate difficulties and hardships when attempting to achieve their goals.[11] Increasing the ability to resist in an individual reduces that person's risk of vulnerability to ongoing stress and increases one's ability to cope with stressful conditions.[12]

The presence of anxiety traits is associated with the concept of resilience. There is a negative correlation between anxiety traits and resilience.[13] Min et al[14] showed that patients with psychological disorders had low resilience to life-long stress. Neisi et al[15] also found that psychological resilience had a significant negative correlation with anxiety disorders. In other words, a high level of psychological resilience leads to reduced anxiety.

2. Objective
The main objective of this study was to compare cognitive errors and psychological resilience in patients with SAD and OCD. Therefore, the present study is important in identifying cognitive errors and psychological resilience and improving the treatment of these patients. Similarly, the comparison of the cognitive errors seen in OCD and SAD patients can help provide more useful interventions. Some cognitive biases in the spectrum of psychological disorders make it harder to treat afflicted patients. Thus, it is essential to identify cognitive errors related to the disorders mentioned and the rate of resilience to these cognitive structures.

3. Methods
This cross-sectional research investigated 60 patients aged between 15 and 50 years, all of whom referred to a hospital in Zanjan City, Iran, in 2017. A total of 30 patients with OCD and 30 patients with SAD were selected using the convenience sampling method and structured diagnostic interviews (SCID-I, II).
The inclusion criteria comprised:
• High school diploma or higher;
• Aged between 15-50 years.
The exclusion criteria comprised:
• Having personality disorders;
• Having intellectual disability;

• Having bipolar disorder, psychosis, and substance abuse.
The cognitive errors test (CET) and the Connor-Davidson Resilience Scale (CD-RISC) for assessing the amount of resilience were used. Data was analyzed using SPSS software, version 18. Multivariate variance analysis (MANOVA) was used to examine the differences between OCD and SAD patients in relation to the component of cognitive errors. All ethical issues were observed in this research, and the researchers declared they have no conflicts of interest.

3.1. Cognitive Errors Questionnaire
This questionnaire was created by Meyghoni and standardized on 80 people from the military garrisons of Tehran and Meygoon, Iran. The CET is comprised of 50 sentences answered using a Likert scale with a score of 4 = completely agree, 3 = agree, 2 = no idea, 1 = disagree, and 0 = completely disagree. The mean correlation coefficient between the first-time and second-order responses was 0.61 for women and 0.67 for men and 0.64 for mean scores for both genders, respectively.[16]

3.2. Connor-Davidson Resilience Scale
Conner and Davidson[17] reviewed the research resources (1979-1991) and provided the CD-RISC scale as a tool to distinguish resilient people from non-reflective ones. This scale has 25 items rated on a Likert 5-point scale (never, rarely, sometimes, often, and always) and was adapted for use in Iran by Besharat.[18] The minimum possible score is 25, the average score is 75, and the maximum possible score is 125. This determines 26.6% of the total scale variance. By factor analysis of the main components, the existence of a factor was confirmed on this scale.[18]

3.3. Structured Clinical Interview for Axis I, DSM-IV
This tool was developed by Spitzer et al[19] in 1992 to be used in assessing the psychological disorders in axis I, based on the definitions and criteria of DSM-IV. In Iran, Sharifi et al created the Persian version of the structured clinical interview for DSM-IV-axis I disorders with intercultural methodology in Persian, and its validity was measured in a multicenter study. In general it is a valid instrument not only in clinical settings but also in research and educational settings.[20]

3.4. Structured DSM-IV Clinical Interview for Axis II
This semi-structured diagnostic interview was developed by Fors, Spitzer, Gibbon, and Williams in 1997 to measure 10 personality-based disorders based on DSM-IV. The validity of the content of the translated version was confirmed in Iran by Bakhtiari,[21] and the reliability coefficient using the test-retest method was 0.87.[22]

4. Results
The demographic characteristics of the studied groups showed that the mean age of patients with OCD was 30.56 years, and the mean age of those with SAD was 24.13 years.

In total, 55% percent of the subjects were female, and 45% were male. Among the participants, 21.7%, 28.3%, and 50% had an education level of less than a high school diploma, a high school diploma, and more than a high school diploma, respectively. Moreover, 58.3% of participants were single, 36.7% were married, and 5% were divorced. Despite the significant difference in some of the demographic variables between the two groups, the results of covariance analysis indicated that these differences did not contribute to the results of this study.

As shown in Table 1, patients with OCD had the highest average cognitive error rates in catastrophizing and all-not thinking and the lowest average in labeling. In SAD patients, the highest mean of cognitive error was related to catastrophizing and the lowest one was related to labeling.

As seen in Table 2, the values for all mentioned variables in both studied groups were greater than 0.05. Therefore, the assumption of the normalization of the variables in question is admitted in the OCD and SAD groups. Levene's test was used to evaluate the homogeneity of variances, components of cognitive errors, and psychological resilience in the OCD and SAD groups. The significance level of the values obtained from this test was $P > 0.05$ in all variables. The homogeneity of variances is acceptable. Therefore, the assumption of the uniformity of the variables in question is accepted in both studied groups. The MANOVA test was used to examine the differences in cognitive error components between the OCD and SAD groups.

The results showed that there was a significant difference between the 2 groups in one component of cognitive errors (Tables 3 and 4).

As shown in Table 5, the mean of resilience in the SAD group was 0.4% higher than that of the OCD group, but the difference was not statistically significant at the level of $P \leq 0.05$.

5. Discussion

The main objective of this research was to compare cognitive errors and psychological resilience in patients with SAD and OCD.

The belief that each disorder is composed of specific cognitive errors is called the hypothesis of cognitive specificity, and it is one of the important elements of cognitive therapy. It helps clinical psychologists conceptualize and measure disturbances, devise therapeutic approaches, and explain the elements of treatment for patients.[23] The findings of the present study suggest that there was a significant difference in all-not thinking, jumping to conclusion, labeling, neglecting positive aspects, catastrophizing, and emotional reasoning between the groups of people with OCD and social anxiety disorder. The mean scores for all components were higher in the OCD group than in the SAD group; the mean scores of the components of mental filtering, over-generalization, should statements, and personalization error in the OCD group were also higher than in the SAD group, but this difference was not significant.

These findings are in line with the results of Wilson and Chambless,[24] Dobson,[7] and Pirbaglou et al[25] who reported that patients with anxiety and OCD have cognitive errors in their intellectual process, and the main cognitive error in OCD is associated with the risk, vulnerability, catastrophizing, and should statements. The results of Wilson and Chambless research,[24] aimed at assessing the high perceptions of liability and obsessive-compulsive

Table 1. Mean and Standard Deviation of the Components of Cognitive Errors in the Groups

		OCD		Social Anxiety	
		Mean	**Standard Deviation**	**Mean**	**Standard Deviation**
Cognitive errors	All-not thinking	13.26	2.5	11.3	2.5
	Mental filtering	11.6	2.5	11.5	2.58
	Overgeneralization	11.9	2.55	11.3	1.84
	Jumping to conclusion	11.7	2.28	10.4	2.85
	Labeling	10.93	2.85	8.66	2.99
	Neglecting positive points	11.5	2.4	9	2.21
	Catastrophizing	14.93	3.1	12.66	2.96
	Should statements	12.96	2.5	11.6	3.19
	Emotional reasoning	12.83	2.1	10.36	3.13
	Personalization	11.96	2.45	11.4	2.89

Abbreviation: OCD, obsessive-compulsive disorder.

Table 2. Average and Standard Deviation of Resilience in Each Group

	Group	Mean	Standard Deviation	Min.	Max.
Amount of resilience	OCD	70.5	16.8	47	101
	Social anxiety disorder	77	16.5	49	116
	Total	73.8	16.8	47	116

Abbreviation: OCD, obsessive-compulsive disorder.

Table 3. Results of MANOVA Test in Components of Cognitive Errors

	The Dependent Variable	SS	df	MS	F	P Value	Eta²
Groups	All-not thinking	58.017	1	58.017	9.29	0.003	0.138
	Mental filtering	0.15	1	0.15	0.023	0.879	0.000
	Over-generalization	11.26	1	11.26	2.27	0.137	0.038
	Jumping to conclusion	26.66	1	26.66	4.01	0.05	0.065
	Labeling	77.06	1	77.06	9	0.004	0.134
	Neglecting the positive points	96.26	1	96.26	17.9	0.000	0.236
	Catastrophizing	77/07	1	77.07	8.3	0.006	0.125
	Should statements	28.017	1	28.017	3.39	0.07	0.055
	Emotional reasoning	91.26	1	91.26	12.8	0.001	0.181
	Personalization	4.81	1	4.81	0.66	0.417	0.011

Abbreviations: SS, Sum of Squares; MS, Mean of squares; df, Degrees of freedom.

Table 4. Results of MANOVA Test

Test	Amount	F	Degrees of freedom	Error Degrees of freedom	P Value	Eta²
Lambada	0.528	4.372	10.000	49.000	0.001	0.472

Table 5. T-test Results for Comparing Resilience in Both Groups

Variable	Group	Mean	Standard Deviation	Amount of statistic	df	P Value	Test Result
Resilience	OCD	70.56	16.8	-1.49	58	0.142	0.4
	Social Anxiety Disorder	70.96	16.5				

Abbreviations: OCD, obsessive-compulsive disorder; df, Degrees of freedom.

symptoms, also showed that cognitive errors increased the severity of OCD and predicted obsessive thoughts. On the other hand, the existence of these thoughts, especially high-risk ones, intensified the symptoms of anxiety in patients with OCD. This finding is also in line with Leahy's[26] view that OCD patients and SAD patients have cognitive errors that lead to low self-esteem. Moreover, the results of the current study are in line with the results of a study conducted by Muris et al,[27] which showed the existence of a positive correlation between anxiety symptoms and negative emotions. This correlation is especially high in anxious patients.

To clarify this finding, it can be said that all cognitive theories have pointed to the important role of this factor in the development of anxiety disorders. They are called cognitive distortions and errors.[28] Disturbing thoughts and cognitive errors are main characteristics of different types of anxiety disorders, like OCD and phobic social disorder.[29] In most anxiety disorders, cognitive errors play a fundamental role. In this regard, several types of ineffective evaluations have been identified as a pivotal or fundamental probability in the creation and continuation of OCD. For example, assessments of responsibility and exaggerated fears and threats and the need for excessive control of thoughts are part of these assessments.[30] Examples of cognitive errors in individuals with OCD include overestimate risk and responsibility. In patients with SAD, these errors include less self-assessing, over-estimating, and catastrophizing symptoms.[26] People with SAD have deficient social skills that cause problems in

starting or continuing social connections and receiving negative feedback from their environment, which may play a more important role than shortcomings and cognitive errors.[31] Patients with OCD are not deficient in their social skills, and therefore, the existence of cognitive errors in their thoughts is more important in the emergence of the disorder.

Psychological resilience is beyond surviving the stresses and disadvantages of life and the degree of the anxiety disorder.[32] The results of the present study indicate that the mean of resilience in the group of people with SAD was higher than that of those with OCD, but the difference was not statistically significant. This finding is inconsistent with those of Min et al.[14] The results of these studies have shown that patients with depression and anxiety disorders have low resilience to life stress, and the number of anxiety symptoms is effective in the resilience of this group of patients. The levels of these factors vary in different groups of anxiety. Also, Neisi et al[15] have shown that there is a significant negative relationship between psychological resilience and anxiety disorders. A high degree of psychological resilience plays a significant role in reducing anxiety.

Resilience consists of some components like temperament and personality, and special abilities such as problem-solving skills, self-restoration with positive emotional, emotional and cognitive outcomes, and the establishment of psychosocial equilibrium in dangerous situations.[32] Patients with OCD and SAD have deficiencies due to the nature of their disorder. In sum, some personality traits, like

higher level of self-esteem, IQ, effective communication skills, and problem-solving skills, contribute to increased resilience.[33] Resilience can be increased by training in such areas as communication skills, coping, and self-expression, and it can be followed by an increase in the general level of psychological health.

This study, like others, had some limitations. One of the most important limitations was the lack of samples, which made it impossible to compare the two groups with a control group. Another limitation is the length of the initial assessment process which included a psychiatric diagnosis and a structured diagnostic interview (SCID-I, II) that led to sample loss. It is suggested that in future studies, the variables of cognitive errors and psychological resilience be compared with other anxiety disorders as well as with disorders in axis II, especially personality disorders with possible similarities with OCD and SAD in their clinical presentation, such as obsessive-compulsive and avoidance personality disorders. Finally, it is suggested that this study be done with a larger number of samples and with a control group.

6. Conclusion

Based on the current results, it may be concluded that cognitive errors play an important role in OCD and SAD. However, the number of cognitive errors is higher in patients with OCD than in patients with SAD. Furthermore, the degree of psychological resilience was equal between patients with OCD and individuals with SAD.

Authors' Contributions

SEM and BGH designed the study and collected data; JMB analyzed the data; MSI and LSE prepared and submitted the manuscript.

Conflict of Interest Disclosures

The authors declare that they have no conflicts of interest.

Ethical Approval

This study was approved by Iran University of Medical Sciences Ethics Committee.

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Research Highlights

What Is Already Known?
All cognitive theories have pointed to the important role of factors in developing anxiety disorders which are called cognitive errors.

What This Study Adds?
People with OCD make more cognitive errors than people with SAD; the mean scores of the components of mental filtering, over-generalization, should statements, and personalization error in the OCD group were greater than the scores in the SAD group, however the difference was not significant. Examples of cognitive errors in OCD patients include overestimate risk and over-responsibility. In SAD patients, these errors include less self-assessing, over-estimating, and catastrophizing symptoms.

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