

Comparing Anxiety Sensitivity between Obsessive-Compulsive Patients and Normal Group

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Abstract

Background: High anxiety sensitivity is related to obsession and compulsion in people with obsessive-compulsive disorder (OCD). The study compared anxiety sensitivity and its subscales in obsessive-compulsive disorder and control groups.

Methods: In this ex-post factor study, 23 obsessive-compulsive out patients people selected by the available sampling method and 22 personnel from the same hospitals (Yazd Comprehensive Psychiatric Hospital, Neurology and Psychiatry Department of Imam Ali Clinic, Shahid Rahnemoun Clinic, and Baqaeipour Clinic) were selected as a control group. Yale-Brown Obsessive-Compulsive Scale and Anxiety Sensitivity Index Revision were used in this study.

Results: The results showed that OCD patients were significantly different from healthy individuals in the total score of anxiety sensitivity scale ($F=18.39$, $P<0.001$).

Conclusion: According to what was observed in this study, it can be concluded that although both groups had significant differences in the total score of the studying variable, in some subscales of studying variables, both groups are also significantly different.

Keywords

Obsessive-Compulsive Disorder (OCD); Anxiety sensitivity; Emotion regulation; Anxiety; Anxiety disorders

Introduction

Obsessive-compulsive disorder (OCD) is one of the most common, debilitating, and resistant neurotic disorders. This disorder is separated from other anxiety disorders in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V). It is one of several disorders characterized by obsessive-compulsive disorder and repetitive behaviors [1]. Having an obsessive thought or obsessive-compulsive behaviors and other criteria is enough to make a diagnosis. However, up to 75% of people with OCD have obsessive-compulsive thoughts and behaviors together [2].

Emotion is mentioned among the many psychological components that contribute to the development or improvement of obsessive-compulsive disorder [3]. Emotion is a complex system that has developed throughout human evolutionary history and equips the organism to respond to environmental stimuli and challenges in life [4].

Anxiety sensitivity is a structure of individual differences in which a person is afraid of physical symptoms associated with anxiety arousal (increased heart rate, shortness of breath, dizziness). It is derived from the belief that this symptom leads to potentially harmful social, cognitive and physical consequences [5].

High anxiety sensitivity is related to obsession and compulsion in people with OCD [6]. Anxiety sensitivity is defined as "fear of fear" and is a secondary risk factor for avoidant behaviors. High levels of anxiety sensitivity are associated with the belief that the senses are related to dangerous or harmful anxiety and lead to negative consequences in physical, psychological, and social conditions. Higher levels of anxiety sensitivity increase anxiety responses and may use fear-related responses depending on the situation, leading to higher levels of avoidance [7].

Another study on healthy individuals showed a significant relationship between anxiety sensitivity and subscales of obsessive-compulsive disorder symptoms [8]. Another study by Wheaton, et al. (2012) examined the dimensions of anxiety sensitivity and symptoms of obsessive-compulsive disorder in 636 non-graduate students. The study also measured generalized anxiety disorder and cognitive impairment that is associated with obsessive-compulsive disorder. Regression analysis showed that anxiety sensitivity predicts the symptoms of obsessive-compulsive disorder, even after controlling general

anxiety and obsessive-compulsive beliefs. In addition, the three dimensions of anxiety sensitivity (physical, social, and cognitive concerns) are significantly associated with the four symptoms of obsession (infection, responsibility for harm, symmetry, and unacceptable thoughts). The limitation of this study was that the finding was based on a sample of a non-clinical student. Its generalization to the symptoms of obsessive-compulsive disorder requires a clinical sample of obsessive-compulsive individuals [6].

Another study by Wheaton, et al. in 2012 looked at 506 mixed samples of anxiety disorders and 315 non-graduate students as healthy groups. In this study, version 3 of the anxiety sensitivity index (ASI.3) was used. The measurements showed a stable three-factor structure (cognitive anxiety, physical anxiety, and social anxiety). It can be used to predict and diagnose anxiety disorder symptoms by any of the dimensions of this questionnaire; the patient group had a higher overall sensitivity score than the control group. People with panic disorder had a higher overall score than people with obsessive-compulsive disorder. A relatively weak correlation was also found between ASI and OCD symptoms [9]. Raines, et al. (2014) evaluate anxiety sensitivity to symptoms of obsessive-compulsive disorder in 76 clinical cases in 13 to 74 year old age. Treated Obsessive-Compulsive disorder for the first time showed that anxiety sensitivity is related to the severity of obsessive-compulsive disorder symptoms, even after controlling anxiety and diagnosing major depressive disorder [8].

Negative beliefs about the consequences of experiencing physical arousal-anxiety sensitivity- are associated with emotion. Anxiety sensitivity is one of the critical components of the cognitive-emotional system in anxiety disorders that plays a crucial role in avoiding emotions and has led to maladaptive behaviors and reduced quality of life in these patients [10]. However, in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, obsessive-compulsive disorder is separated from anxiety disorders; it is essential to evaluate anxiety sensitivity (as one of the symptoms of anxiety disorders) in obsessive-compulsive disorder. Low arousal of anxiety sensitivity even increases the unpleasantness. The anxiety sensitivity variable and its subscales are essential in the diagnosis and treatment of obsessive-compulsive disorder. It will be evaluated in this study.

Materials and Methods

Participants

Twenty-three adults aged 18-60 years with obsessive-compulsive disorder were referred to Yazd Comprehensive Psychiatric Hospital, Neurology and psychiatry department of Imam Ali Clinic, Shahid Rahnemoun Clinic, and Baqaeipour Clinic were included in the study. Those who were diagnosed with obsessive-compulsive disorder by a psychiatrist or psychologist and had a score higher than 9 in the Yale-Brown test (two standard deviations above the mean) were included in this study through available sampling.

Twenty-two healthy persons in this study were selected through available sampling from adults aged 18-60 years in Yazd Comprehensive Psychiatric Hospital, Psychiatric ward of Imam Ali Clinic, Shahid Rahnemoun Clinic, and Baqaeipour Clinic. The criterion for admission to the healthy group was the

absence of obvious psychiatric and cognitive problems, the ability to read and write, and matched group with the OCD group in terms of age, sex, and education.

Inclusion criteria for the patient group were as follow:

1. Patients in the age group of 18-60 years with obsessive-compulsive disorder
2. Ability of these patients to read and write (minimum junior education)
3. Having a score higher than nine on the Yale-Brown Obsessive Questionnaire (two standard deviations above average)

Exclusion criteria for the patient group are mentioned below:

1. Patients with other mental disorders in axes 1 and 2 of DSM.IV.TR
2. Patients with neurological and other brain disorders

Inclusion criteria for the healthy group

1. People in the age group of 18-60 years without a psychiatric history
2. Ability to read and write.

Exclusion criteria for the healthy group

1. History of psychiatric problem
2. First-degree relatives of patients with obsessive-compulsive disorder

Survey Instruments

1- Yale Brown Obsessive-Compulsive Disorder (Y-BOCs)

A semi-structured interview has two parts: Symptom checklist (SC) and severity scale (SS). Sixteen items of SC are answered as self-report on five-point Likert rating. In SS, each obsession and compulsion is estimated in five dimensions: distress, frequency, intervention, resistance, and symptom control. Y-BOCS scores three scores: severity of obsessions, the severity of compulsions, and a total score that includes all items.^[11]

In the Obsessive-Compulsive Disorder (SS) checklist, questions 1 to 10 in the measurement are related to this domain. The first five questions show the severity of the obsession and the second 5 questions show the severity of compulsion, and the sum of the scores of the ten questions shows the total severity of the OCD. Cut point 9 for the total score (10 questions) indicates whether the person has this disorder or not. An overall score below 9 indicates very low obsession, and scores between 8.99 to 14 indicate low severity of obsession, 14 to 22.99 indicates moderate severity of obsession, 23 to .27 indicates high

severity of obsession, and score 28 and above indicate severe obsession. Internal consistency of the SC and SS are 0.97 and 0.95, respectively. Split half reliability for SC and SS, respectively, 0.93 and 0.89, and the validity of the test-retest 0.99 was obtained [12].

2- Revised Anxiety Sensitivity Questionnaire (ASI.R)

It is a 36-item self-report tool that measures fear of anxiety-related symptoms. The Likert scale ranges from low (score zero) to very high (score four) and ranges from zero to 144, indicating the lowest and highest scores, respectively. The subscales include "Fear of Cardiovascular-Gastrointestinal Symptoms," "Fear of Respiratory Symptoms", "Fear of Publicly Observed Anxiety Reactions" and "Fear of Cognitive Inhibition" It was in this index that a total of more than 58% of the total variance of the test was explained. The validity of the "Revised Anxiety Sensitivity Index" was calculated based on three methods of internal consistency, test-retest, and split-half, which for the whole scale were 0.93, 0.95, and 0.97, respectively. Also, the validity coefficients of the subscales were calculated based on internal consistency, test-retest, and split-half methods, which ranged from 0.82 to 0.91, 0.92 to 0.96, and 0.76 to 0.9, respectively. The validity of the "Revised Anxiety Sensitivity Index" was calculated based on three methods of concurrent validity, the correlation of subscales with the whole scale and with each other, and factor analysis. Concurrent validity of the "Revised Anxiety Sensitivity Index" was performed by simultaneously implementing the "Revised 90-Symptom Revised Index" questionnaire with a correlation coefficient of 0.56. The correlation coefficients between the subscales of the "Revised Anxiety Sensitivity Index" with the total score ranged from acceptable and ranged from 0.74 to 0.88. The correlation between subscales ranged from 0.40 to 0.68 [13].

Procedure

Twenty-three people in the age group of 18-60 years with obsessive-compulsive disorder were selected from Yazd Comprehensive Psychiatric Hospital, Psychiatric ward of Imam Ali Clinic, Shahid Rahnemoun Clinic, and Baqaeipour Clinic. After receiving the final diagnosis by a psychiatrist and psychologist, they also entered the study with personal consent. The Yale-Brown Obsessive-Compulsive Disorder and Anxiety Sensitivity Index (ASI.R) were randomly distributed among the subjects. Patients could refuse to continue work whenever they wished. After collecting the experimental group, the control group, selected according to the inclusion and exclusion criteria and matched to the experimental group, randomly completed the Yale-Brown and Anxiety Sensitivity index.

Statistical Analysis

Each questionnaire was scored according to the scoring instructions. To analyze the data from descriptive methods, including mean, standard deviation, and inferential statistical method, which includes univariate analysis of variance to compare the overall score of variables in both healthy and OCD groups. Subscales of each variable were compared in the healthy group and patient group via SPSS software v=16.

Results

Twenty-three obsessive-compulsive patients (6 males, 17 females) and twenty-two as a control group (10 males, 12 females) participated in the present study. Many of them in both groups were married (20

in OCD, 13 in the control group). Most of them in two groups has bachelor's degree.

According to Table 1, the amount of all four dimensions of anxiety sensitivity (fear of cardiovascular-gastrointestinal symptoms, fear of respiratory symptoms, fear of anxiety reactions visible in public, and fear of not cognitive control) was higher in the obsessive-compulsive group than in the healthy group. In addition, the total score of anxiety sensitivity in the obsessive-compulsive group was higher than in the healthy group.

Anxiety sensitivity subscales	Normal Group		OCD Group	
	Mean	SD	Mean	SD
Fear of cardiovascular symptoms	4.727	4.901	15.478	11.337
fear of respiratory symptom	5.091	6.354	10.043	6.277
Fear of publicly observable anxiety reactions	21.682	4.497	24.304	4.967
Fear of cognitive dyscontrol	2.045	2.36	7.043	5.252
Overall score	27	18.3	58.91	29.63

Table 1: Mean and standard deviation in normal and OCD group.

There is a meaningful difference between control and Obsessive-compulsive groups in the anxiety sensitivity variable ($F=18.39$, $P<0.0001$) (Table 2).

	SS	df	MS	F	P
Anxiety sensitivity within group	26341.217	43	612.586	18.390	0.0001
Between-groups	11265.360	1	11265.360		

Table 2: ANOVA (anxiety sensitivity difference) in normal group and OCD group.

Univariate analysis of variance was used to compare these dimensions between healthy and obsessive groups. According to Table 3, univariate analysis of variance on three dimensions of fear of cardiovascular-gastrointestinal symptoms ($P < 0.001$), fear of cognitive control ($P < 0.001$), and fear of respiratory symptoms ($P < 0.05$) are significant. Therefore, it can be said that these three dimensions are significantly different between the healthy group and the obsessive group.

Anxiety sensitivity subscales	SS	df	MS	FP
Fear of cardiovascular symptoms	Within group 3332.103	43	77.491	16.772 0.001
	Between group 1299.675	1	1299.645	
Fear of respiratory	Within group 1714.775	43	39.878	6.916 0.012

symptom	Between group 275.803	1	275.803	
Fear of publicly observable anxiety reactions	Within group 967.642	43	22.503	3.437 0.071
	Between group 77.335	1	77.335	
Fear of cognitive dyscontrol	Within group 723.991	43	16.835	16.685 0.001
	Between group 280.889	1	280.889	

Table 3: ANOVA test for differences of anxiety sensitivity subscales between two groups.

Discussion

This study aimed to investigate anxiety sensitivity and its subscales in obsessive-compulsive disorder. The results showed that the overall score of anxiety sensitivity in the obsessive-compulsive group is higher than in the healthy group. It is consistent with Ghasempour, et al. (2013) that concluded a significant relationship between anxiety sensitivity and obsessive-compulsive disorder [14]. The result of the research is also consistent with the research [15]. The study results do not agree with the research of Wheaton et al. (2012). There is a weak relationship between obsession and anxiety sensitivity in that research [6]. The study results with the results of the research of Raines, et al. (2014) on the sensitivity of anxiety about the symptoms of obsessive-compulsive disorder among 76 clinical cases, aged 13 to 74 years who have been treated for the first time. Anxiety sensitivity is associated with the severity of the symptoms of obsessive-compulsive disorder, even after controlling anxiety [8]. Ferreira et al. (2021) found that fear of negative emotions was associated with OCD symptoms, [16] and anxiety sensitivity was a related concept in OCD individuals [17].

People with high anxiety sensitivity are more likely to view anxiety-related symptoms as signs of impending harm. In contrast, people with low anxiety sensitivity tend to view such feelings as unpleasant, But not threatening.

Another belief in these patients is related to the emotional consequences caused by the obsession. Activation of these beliefs triggers obsessive thinking is dangerous. These assessments lead to feelings of fear, anxiety, guilt, and unhappiness. These feelings themselves can be a sign that annoying thoughts are real [18].

However, the study results do not agree with the findings of Wheaton, et al. (2012), who found a relatively weak relationship between ASI and OCD symptoms. This study suggests that more research is needed on the relationship between anxiety sensitivity and symptoms. This finding can indicate the heterogeneity of obsessive-compulsive disorder and the differences in the symptoms of obsessive-compulsive disorder.

Findings of the study on dimensions of anxiety sensitivity showed a significant difference in three subscales of fear of cardiovascular-gastric-intestinal symptoms, fear of respiratory symptoms in the obsessive-compulsive group and healthy group. Still, there was no significant difference between the two groups on the subscale of fear of observable anxiety reactions.

The results of another study found a significant relationship between subscales of physical anxiety and the diagnostic status of obsessive-compulsive disorder, the results are consistent with present research on two parts, fear of cardiovascular-gastrointestinal symptoms and fear of respiratory, but another part in fear of cognitive dyscontrol is inconsistent [19].

Another study, which used a 36-item revised Anxiety Sensitivity Questionnaire, found that people with obsessive-compulsive disorder scored higher on all four subscales of anxiety sensitivity than the control group. In this research, fear of cognitive dyscontrol was not meaningful between the two groups [20].

Rahimian and his colleagues studied anxiety sensitivity in people with obsessive-compulsive disorder and generalized anxiety disorder and healthy people. Regarding the comparison of four components of anxiety sensitivity in all three groups, it was found that in three subscales (fear of cardiovascular-gastrointestinal symptoms, fear of anxiety reactions visible in general, fear of lack of control Cognitive), there was a significant difference in all three groups. Still, no significant difference was seen in the subscale of fear of respiratory symptoms in the three groups. Fear of cardiovascular-gastrointestinal symptoms and fear of anxiety reactions visible in general are consistent with the study results. Still, in the case of the other two subscales, fear of cognitive lack of control and fear of respiratory symptoms are inconsistent with the current study results [21].

In all previous studies, the obsessive-compulsive group was significantly different from the healthy group in terms of physical anxiety or fear of cardiovascular-gastric-intestinal symptoms, but the same results were not obtained for other dimensions. In comparing the research results with the previous studies, more research is needed on the dimensions of anxiety sensitivity with vaster sample sizes.

Another reason for the discrepancy between the results is the heterogeneity of obsessive-compulsive disorder and its severity. Therefore, more research is needed to compare this variable and its subscales in various symptoms of obsessive-compulsive disorder.

Conclusion

The obsessive-compulsive disorder reports more physical concerns and worries about lack of cognitive control indicating a high level of obsessive-compulsive disorder. In addition, the lack of significant differences between the two groups in terms of fear of cognitive dyscontrol indicates that obsessive people are not afraid of lack of ability in controlling cognition. More research is needed to confirm this result.

Ethical Consideration

This study was derived from a thesis for the master's degree in clinical psychology, and it was approved by Shiraz University (Code: 2720507).

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Conflict of Interest

There was no conflict of interests among authors.

References

1. Roehr B. (2013) American psychiatric association explains DSM-5. *BMJ*. 346.
2. Fenske JN, Petersen K. (2015) Obsessive-compulsive disorder: diagnosis and management. *Am Fam Physician*. 92(10):896-903.
3. Jansen M, Overgaauw S, De Bruijn ER. (2020) Social cognition and obsessive-compulsive disorder: A review of subdomains of social functioning. *Front Psychiatry*. 11:118.
4. Al-Shawaf L, Conroy-Beam D, Asao K, Buss DM. (2016) Human emotions: An evolutionary psychological perspective. *Emotion Rev*. 8(2):173-86.
5. Badrian A, Haghayegh SA, Nikyar HR. The Relationships Between Anxiety Sensitivity, Irritability, Intrusive Thoughts and Sleep Problems in Patients With Generalized Anxiety Disorder. 2017.
6. Wheaton MG, Mahaffey B, Timpano KR, Berman NC, Abramowitz JS. (2012) The relationship between anxiety sensitivity and obsessive-compulsive symptom dimensions. *J Behav Ther Exp Psychiatry*. 43(3):891-6.
7. Ouimet AJ, Kane L, Tutino JS. (2016) Fear of anxiety or fear of emotions? Anxiety sensitivity is indirectly related to anxiety and depressive symptoms via emotion regulation. *Cogent Psychology*. 3(1):1249132.
8. Raines AM, Oglesby ME, Capron DW, Schmidt NB. (2014) Obsessive compulsive disorder and anxiety sensitivity: Identification of specific relations among symptom dimensions. *J Obs Compuls Relat Disord*. 3(2):71-6.
9. Wheaton MG, Deacon BJ, McGrath PB, Berman NC, Abramowitz JS. (2012) Dimensions of anxiety sensitivity in the anxiety disorders: Evaluation of the ASI-3. *J Anxiety Disord*. 26(3):401-8.
10. Sun J, Luo Y, Chang H, Zhang R, Liu R, Jiang Y, et al. (2020) The mediating role of cognitive emotion regulation in BIS/BAS sensitivities, depression, and anxiety among community-dwelling older adults in China. *Psychol Res Behav*. 13:939.
11. Goodman W, Rasmussen S, Price L, Mazure L, Heninger G, et al. (1991) Yale-brown obsessive compulsive scale (Y-BOCS). *Verhaltenstherapie*. 1(3):226-33.
12. Esfahani SR, Motaghipour Y, Kamkari K, Zahireidin A, Janbozorgi M. (2012) Reliability and Validity of the Persian version of the Yale-Brown Obsessive-Compulsive scale (Y-BOCS). *Iran J Psychiatry Clin Psychol*. 17(4).
13. MoradiManesh F, Mir Jafari S, Goodarzi M, Mohammadi N. (2007) Evaluation of psychometric properties of the revised anxiety sensitivity index. *J psychol*. 11(4):426-46.
14. Ghasempour A, Akbari E, Azimi Z, Ilbeygi R, Hassanzadeh S. (2013) Predicting obsessive-compulsive disorder on the basis of emotion regulation and anxiety sensitivity. *Zahedan J Res Med Sci*. 15(2):94-7.
15. Irwin LD, Jones MK. (2017) The Relationship Between Obsessive-Compulsive Symptoms, Perfectionism, and Anxiety Sensitivity for Not Just Right Experiences. *Behav Change*. 34(3):134-55.
16. Ferreira S, Couto B, Sousa M, Vieira R, Sousa N, et al. (2021) Stress influences the effect of obsessive-compulsive symptoms on emotion regulation. *Front Psychiatry*. 11:1622.
17. Khakpour S, Yousefi F, Saed O. (2018) Anxiety Sensitivity and Obsessive-Compulsive Disorder: A Mini Review. *IJMHP*. 5(5):69-80.

18. Khodabakhsh R, Abbasi L, Shahangian SS. (2013) Effectiveness of Metacognition Therapy on Controlling of Obsessive Thoughts and Increasing of Adjustment in Case of Obsessive-Compulsive Disorder. *Adv Cogn Sci.* 15(3):24-32.
19. McWilliams LA, Becker ES, Margraf J, Clara IP, Vriends N. (2007) Anxiety disorder specificity of anxiety sensitivity in a community sample of young women. *Pers Individ Differ.* 42(2):345-54.
20. Abramowitz JS, Deacon BJ, Olatunji BO, Wheaton MG, Berman NC, et al. (2010) Assessment of obsessive-compulsive symptom dimensions: development and evaluation of the Dimensional Obsessive-Compulsive Scale. *Psychol Assess.* 22(1):180.
21. Boogar IR, Farahnaz K, Tarbaran F. (2013) Investigating the relationships of emotional schema, cognitive-behavioral avoidance and cognitive-affective system with generalized anxiety disorder and obsessive-compulsive disorder. *Pajoohande.* 18(5):267-76.