



## Relationship between the Obsessive-Compulsive Disorder Dimensions, Severity and Insight in Adolescents: An Iranian Sample

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### ABSTRACT

**Aims** The goal of the present study was to assess the relationship between obsessive-compulsive disorder dimensions and severity with insight into an adolescent's population.

**Materials & Methods** This study was done in Iran. The study sample included 84 adolescents with OCD according to DSM-5. The participants completed materials of Obsessive Compulsive Inventory-Child Version (OCI-CV), Children Depression Questionnaire (CDQ), Children's Yale-Brown Obsessive Compulsive Scale-Severity Rating (CY-BOCS-SR), and Child Assessment of Belief Scale (CABS). Data were analyzed through descriptive statistics' indices, Pearson correlation, separation coefficient, and multi-variant regression, using SPSS.

**Findings** There was a strong positive relationship between the hoarding dimension and delusional insight. Also, severity, ordering, and doubting/checking were significantly correlated with insight, while this result disappeared by controlling the hoarding dimension via partial correlation. Moreover, adolescents with more symptoms of hoarding demonstrated a significantly higher score in OCI-CV, severity and delusional insight but not in the depression inventory.

**Conclusion** Findings of the present study consistent with prior findings suggest a non-significant relationship between OCD clinical dimensions and insight in adolescents.

**Keywords** Obsessive-Compulsive Disorder; Severity; Insight; Depression

### CITATION LINKS

[1] Diagnostic and statistical manual of mental disorders ... [2] The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey ... [3] The brown longitudinal obsessive compulsive study: Clinical features and symptoms of the sample at ... [4] Phenomenological and comorbid features associated in obsessive-compulsive disorder: Influence of age of ... [5] Correlates of insight among youth with obsessive-compulsive ... [6] Insight in pediatric obsessive-compulsive disorder: Associations with clinical ... [7] Clinical implications of insight assessment in obsessive-compulsive ... [8] Comparison of clinical characteristics in good and poor insight ... [9] Clinical characteristics and treatment response in poor and good ... [10] Obsessive-compulsive disorder: A review of the diagnostic criteria and possible ... [11] The global burden of disease: A comprehensive assessment of mortality and ... [12] Cognitive-behavioral family treatment of childhood obsessive-compulsive disorder: Long-term follow-up and predictors of ... [13] Impact of comorbidity on treatment response to paroxetine in pediatric obsessive-compulsive disorder: Is the use of exclusion criteria empirically supported in randomized clinical ... [14] Juvenile-onset OCD: Clinical features in children, adolescents and ... [15] Phenomenology and correlates of insight in pediatric obsessive-compulsive ... [16] Predictors and moderators of treatment outcome in the pediatric obsessive compulsive treatment ... [17] Childhood obsessive-compulsive disorder presenting as schizophrenia spectrum ... [18] Development and validation of a child version of the obsessive compulsive ... [19] Psychometric properties of the obsessive compulsive inventory: Child version in children and adolescents ... [20] Psychometric properties of the Obsessive-Compulsive ... [21] Obsessive compulsive inventory-child version (OCI-CV) in a Spanish community ... [22] Assessment of obsessive compulsive disorder in young children: Psychometric properties ... [23] Psychometric evaluation of the Children's yale-brown obsessive-compulsive ... [24] The epidemiology of obsessive-compulsive disorder in five ... [25] The children's depression inventory ... [26] Validity and reliability of depression ... [27] Evaluating an animal model of compulsive hoarding ... [28] Encyclopedia of mental ... [29] Sex-specific clinical correlates of hoarding in obsessive-compulsive ...

## Introduction

Obsessive-compulsive disorder (OCD) is characterized by obsessions and/or compulsions which result in anxiety and disability in an individual [1]. International prevalence of obsessive-compulsive disorder is 1.1-1.8% and its prevalence in the children has been reported to be 1-3% [2]. Early-onset of OCD is associated with the incidence of other mental disorders such as panic disorder, eating disorder, and obsessive-compulsive personality disorder [3]. However, it has been reported that the onset of OCD in 80% of adult patients is during their childhood [4]. On the other hand, insight is described to be the ability to identify the causes and meaning of a condition in which a person exists and also involves the concept of knowledge about disease [5]. Thus, insight is a multi-dimensional concept which involves components such as understanding that beliefs may have a psychological psychiatric origin and individual readiness to consider that their beliefs might be wrong [6]. Within insight spectrum, a good insight is considered as obsession and the complete absence of insight results in delusion. Overvalued ideas (OVIs) are also located between obsessions and delusions which this condition assumed to be worse than having obsessions and better than having delusions [7].

Now, it is specified that insight may be realized in a continuum from a complete knowledge of absurdness and meaninglessness of thoughts and beliefs to complete the lack of these kinds of insights [8]. However, there is no specific agreement on what should be the purpose of the evaluation of OCD for insight [9]. Also, people who suffer from OCD, generally have non-real and exaggerated thoughts, except that the insight level within these individuals is so various [10].

In addition, previous studies reported that lack of insight is more common within children and adolescents [1, 10] and by proceeding towards adolescence, the level of insight will increase [5, 6]. However, it is defined that the patients with weak insight show higher levels of depression and anxiety symptoms with more probability of comorbidity with major depressive disorder, lower resistance against OCD [7, 8], longer periods of developing disease and its early-onset [9]. A collection of these factors have caused this disorder to be among the 10 debilitating disorders [11]. Therefore, with considering the quadric effects of severity, comorbidity, family conflicts, and insight into the therapeutic responses to OCD [12, 13], especially in children and adolescents who are more vulnerable for developing comorbidity with other disorders especially developmental disorders [14], the subject of the present study becomes more significant.

So far, only three researches have been conducted in the field of the relationship between symptoms, severity of OCD and insight in adolescents. In the

study of Storch *et al.* [6], there was a significant relationship among the levels of insight, symptom severity and the performance of the adolescents who suffer from OCD. So, presence and the severity of OCD symptoms in adolescents with weak insight is higher than adolescents with good insight. In addition, the parents of adolescents in the first group (low insight) showed higher levels of disorders related to OCD and family accommodation comparing to the parents of adolescents of the second group (good insight). Despite the fact that in previous studies, there was no significant result for differences of comorbidity between both groups, the adolescents with weaker insight are more involved in repetitive compulsion and somatic obsession. In a study by Lewin *et al.* [5], a significant relationship was found between patients' age and rate of insight. 48% of 8-10 years old participants, 72% of 11-13 years old adolescents and 79% of 14-17 years old adolescents revealed higher levels of insight. Also, there was a reverse relationship between insight and depression at clinical level, while there was no significant pattern for comorbidity, symptoms' severity, internalizing or externalizing the symptoms, family accommodation and disorders related to OCD. However, adolescents with weak insight showed lower levels of cognitive control towards their symptoms.

In another study conducted by Storch *et al.* [15], it was identified that weak insight is related to the increase of ordering compulsion and externalizing of the symptoms. In addition, people with lower levels of insight showed less resistance against OCD. The significant point of this study was that unlike the first study, there was no significant relationship between symptom's severity and insight. Overall, prior studies suggest the significant relationship of insight with therapeutic response [16, 17], ordering compulsion [5, 15] increasing risk of comorbidity with other disorders [3] and the age of patients. Other findings such as the relationship between symptom severity and insight require more researches in order to reveal certain patterns among these dimensions. On the other hand, the nature of patterns in these relations is not specified in Asian countries, especially in the Middle East. As a result, this study proposed to determine the relationship among insight, severity of symptoms and dimensions of OCD in adolescents.

## Materials and Methods

84 participants, aged 10-14 years adolescents with OCD (mean=12.75, standard deviation=1.40), including 18 male (21.4%) and 66 female (78.6%) adolescents were selected by two clinical experts based on DSM-5 criteria for obsessive-compulsive disorder. Selection of the samples was done in a one-year process. All the participants were diagnosed with an initial obsessive-compulsive disorder, and the adolescents who suffered from comorbid disorders such as schizophrenia, bipolar manic-

depressive and other comorbid disorders, which prevented appropriate completion of the questionnaires, were eliminated from the study. At the same time, an interview with the parents has been done about the onset of the obsessive thoughts and its symptoms, severity and other abnormalities in behavior of adolescents to ensure the diagnosis. Also, the mean of OCD onset was 8-9 years old according to the parents' report.

After the diagnostic interview of adolescents and removing the participants with other comorbidities by two clinical experts, a semi-structural interview using Children's Yale-Brown Obsessive Compulsive Scale-Severity Rating followed by the Scale of Children Beliefs were conducted. Then clinicians asked participants to also, complete the Obsessive-Compulsive Inventory-Child Version and Children Depression Questionnaire. The following questionnaires were used in the present study:

**1- Obsessive Compulsive Inventory-Child Version (OCI-CV):** This questionnaire consists of 21-item assessment measuring six factors of OCD components: Check/doubt, obsessions, hoarding, washing, ordering, and neutralizing derived by exploratory factor analysis. This questionnaire has been designed by Foa *et al.* (2010) for 7-17 years old children and adolescents. Excellent psychometrical features, high internal consistency for total scores and subscales and acceptable Test-retest reliability for total score and subscales have been reported in researches (81%, 77%, and 68-89%, respectively) [18-21].

**2- Children's Yale-Brown Obsessive Compulsive Scale-Severity Rating (CY-BOCS-SR):** Like the adult version, this questionnaire is also realized as a sufficient tool for clinical analysis of OCD and includes severity scale and a checklist which can define specific types of OCD and determine its severity by five questions for obsession and five questions for compulsion (spent time, interference, distress, resistance, and control). It is designed for 8-18-year-old children by Scahil *et al.* and reported to have great validity and reliability [22, 23]. Subsequent studies also supported the reliability and validity of this questionnaire [23].

**3- Child Assessment of Belief Scale (CABS):** CABS has been designed based on Brown's seven-question scale of beliefs for analyzing the insight and delusion

of the patients with psychological disorders like OCD in the form of semi-structural scale and for clinical objectives. This scale includes 5 simple and understandable questions which more useful for children, comparing to the adult's version. Also, the question related to the reason for the difference between self and the others' attitudes has been removed because of some children's problem for answering. Like its adult's version, this questionnaire has 0-4 (normal-pathological) scoring, which total score is 0-20. The people who obtain 9 or more which shows the mean of 2 or more in each question are realized as patients with low insight about their disease [24].

**4- Children depression questionnaire (CDQ):** This questionnaire includes 27 items and each item consists of 3 sentences which assess the emotions, thoughts and behaviors of the children during last two weeks. This questionnaire is in the form of self-report and has been designed by Kovacs *et al.* for assessing cognitive, behavioral and emotional symptoms in 7-17-year-old children in 1985. Also, the reliability of this questionnaire has been reported to be excellent ( $\alpha=0.90$ ) [25] and its validity and reliability among 13-15-year-old Iranian adolescents reported to be acceptable as well [26].

Data were analyzed through descriptive statistics' indices, Pearson correlation, separation coefficient, and multi-variant regression, using SPSS.

### Findings

Based on the results of the present study, the mean score of subjects in the obsessive-compulsive inventory was 22.86. Also, the mean scores for insight and severity of the symptoms were 11.83 and 20.63, respectively (Table 1 and 2).

**Table 1)** The mean and standard deviation for subjects scores on study variables (84 persons)

Variables	Mean
OCI-total score	22.86±4.19
Check/Doubt	5.06±2.43
Obsession	4.94±1.58
Washing	3.19±1.47
Hoarding	3.06±1.39
Order	4.81±1.42
Neutralizing	1.77±1.05
OCD severity	20.63±5.55
Insight	11.83±7.06
Depression	25.60±5.05

**Table 2)** The matrix of Pearson correlation coefficient within study variables

Variables	1	2	3	4	5	6	7	8	9
1- Check/doubt	1								
2- Obsession	0.05	1							
3- Hoarding	0.35	-0.08	1						
4- Washing	0.21	-0.05	-0.11	1					
5- Order	0.06	-0.23	-0.34	0.15	1				
6- Neutralizing	0.05	0.02	0.01	-0.46	0.35	1			
7- Severity	-0.006	0.25	0.50	0.21	0.16	0.04	1		
8- Insight	0.28	0.11	0.60	0.004	0.26	0.11	0.34	1	
9- Depression	-0.39	0.07	-0.19	0.30	-0.08	0.05	-0.08	0.16	1
10- OCI-CV	0.82	0.28	0.34	0.35	0.31	0.25	0.20	0.04	-0.20

The results of the Pearson correlation coefficient suggest the results of the correlation between study variables. As it is observed, there was a positive and significant relationship between delusional insight and check/doubt, order compulsion, hoarding and severity of OCD ( $p < 0.5$ ), while there was no significant relationship between insight and other factors. Also, OCD severity in adolescents showed a positive and significant relationship with washing obsession, a partially strong relationship with hoarding, a significant and positive relationship between depression and washing factor as well as a negative and significant relationship between depression and checking/doubting factor. No significant relationship was found for depression with severity and insight.

It should be pointed that by controlling the effect size of hoarding using partial correlation, none of the relationships among the factors and delusional insight showed significance. However, after controlling other factors, the relationship between hoarding and delusional insight was significant ( $r = 0.422$ ).

The variables, which had a significant relationship with delusional insight at first, were analyzed through regression in order to see whether the dimensions of OCD can predict the insight (Table 3).

**Table 3)** Summary of the results of regression analysis and predicting the insight by check and doubt, hoarding, order, and severity dimensions

Variables	Beta	Sig	Statistic model
Check and doubt	0.353	0.222	R=0.620 R <sup>2</sup> =0.384 ADR <sup>2</sup> =0.353
Hoarding	2.84	0.001	
Ordering	0.442	0.359	
Severity	0.110	0.411	

The results of regression analysis suggested that just the hoarding factor is able to predict the insight significantly. This means that by increasing a standard unit in the amounts of hoarding, delusional insight increased 2.84 in number (Table 4).

**Table 4)** Multivariate analysis of variance for depression, OCD, severity, and insight between two groups of adolescents with (n=33) and without (n=51) hoarding symptoms

Group	Mean	F	Sig.
<b>CDI</b>			
With hoarding symptoms	25.7±6.3	0.066	0.798
Without hoarding symptoms	25.4±4.0		
<b>OCI-CV</b>			
With hoarding symptoms	24.1±4.2	5.54	0.021
Without hoarding symptoms	22.0±3.9		
<b>Severity</b>			
With hoarding symptoms	22.2±3.8	11.76	0.001
Without hoarding symptoms	18.2±6.8		
<b>Insight</b>			
With hoarding symptoms	16.5±4.9	34.50	0.0001
Without hoarding symptoms	8.7±6.5		

The two groups showed a significant difference in all factors except CDI (depression). In other words, the group with hoarding symptoms showed significantly higher scores in OCD, severity and delusional insight but not in depression compared to the group without hoarding symptoms (Table 4).

**Discussion**

The main goal of the present study was to investigate the relationship between insight and OCD clinical dimensions. Also, the relationship between severity of OCD and insight, depression comorbidity and patients' insights were examined and the differences between the two groups with and without the hoarding symptoms of hoarding were measured. Generally, the most important finding of this study was the significant relationship between delusional insight and hoarding dimension, which the recent study of Storch *et al.* [15] could not explain this finding. Moreover, in this study, regression analysis by the input method introduced the hoarding dimension as the most important predictor of low insight in adolescents. Also, the dimensions of severity, ordering, and doubting showed significant relationships with the insight when the hoarding factor was not controlled by partial correlation. While by controlling three other factors, the relationship between hoarding dimension and insight was still significant ( $r = 0.422$ ) while Storch *et al.* [6] reported that 21% of the adolescents with the symptoms of hoarding have lower insight and higher comorbidity with other disorders compared to the other groups. The strong and positive relationship between the symptoms of hoarding and the delusional insight in the adolescents who suffered from OCD could have been explained by the neural [27] causes, the clinical features [28], normality of collecting useless things by adolescents due to their curiosity, socio-economic and cultural status. The presence of more clinical symptoms in adults with hoarding problem has been proven such as severity of OCD, higher rates of comorbidity with depression and anxiety disorders as well as lower reaction to therapy [29]. Some part of previous findings are coherent with the results of the present study like that patients with hoarding symptoms had less insight and more severity and symptoms of OCD comparing to the patients without hoarding symptoms, yet there was no significant relationship was found in comorbidity of depression between the two groups of this study. A set of these findings could suggest the importance of next studies. Consistent with Storch *et al.* and Lewin *et al.* studies [5, 6, 15], the present study also suggests mild relationship between OCD clinical features and insight in adolescents. In contrast, Storch *et al.* and Lewin *et al.* studies [5, 6, 15], reported no significant relationship between insight and other dimensions of OCD except for hoarding. However, it was just in a condition in



which, the dimension of hoarding was controlled by partial correlation for the dimensions of severity, order, doubt, and check. Also, in adult samples, along with findings of this study, there is a significant relationship between insight and hoarding dimension [28].

Due to the age limitation of the sample of the present study, it couldn't examine the age effects on insight. Also, the lack of an interview with parents for possible other disorders, accommodation and any other demonstrative pattern of family, limitation of determining OCD dimensions to OCI-CV, and study the comorbidity of depression as the only comorbid disorder were the other limitations of the study. Therefore, it is suggested that future studies may use independent and valid tools for analyzing hoarding symptoms and expressing its relationship with other OCD dimensions along with investigating the limitation.

### Conclusion

Overall, the result of the present study coherent with other conducted researches suggests no clinical relationship between insight and OCD dimensions in adolescents. Also, in this study, against previous studies, it was found that there is a negative and strong relationship among hoarding dimension and insight and also adolescents with hoarding symptoms are at more risk of low insight and severe OCD compared to adolescents without hoarding symptoms. However, there was no difference between both groups in terms of depression symptoms.

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