Original Article

The Relationship between Obsessions and Compulsions and Negative and Positive Symptoms in Schizophrenia

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Objective: The aim of the present study is to investigate the relationship between obsessive-compulsive symptoms (OCSs) and negative and positive symptoms in schizophrenia.
Methods: Subjects of the study comprised of 31 schizophrenia with obsessive-compulsive symptoms (19 men and 12 women) selected by convenience sampling method from Iran psychiatric Hospital. The diagnoses were established on the basis of DSM-IV-TR. The required data were obtained using Positive and Negative Syndrome Scale (PANSS) and Yale-Brown Obsessive-Compulsive scale (Y-BOC).
Results: The results of multiple regression analysis indicated that obsessive symptoms inversely predict negative symptoms. In other words, as the obsessive symptoms increase, the negative symptoms of schizophrenia decrease. Nevertheless, no significant relationship was found between OCSs and positive symptoms .
Conclusion: This study reveals that OCSs exert a protective effect on schizophrenia and do not necessarily cause poorer prognosis.

Key words: *Compulsive behavior, Obsessive behavior, Signs and symptoms, Schizophrenia*

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Schizophrenia is a psychotic mental disorder of unknown etiology characterized by disturbances in thinking, mood, and behavior (1). In an epidemiological study of psychiatric disorders conducted on 18 years-old and over in Iranian population, the lifetime prevalence of schizophrenia was reported to be 0.6% (2). Another system is based on the presence of positive or negative symptoms. Positive symptoms include delusions and hallucinations, and negative ones include affective flattening, alogia, avolition, anhedonia, and asociality (1). The presence of obsessive-compulsive symptoms (OCSs) in schizophrenia disorder has also been reported in the early definitions of this mental illness (3). According to a classical psychiatric theory, presence of OCSs during prodromal period of schizophrenia, guard the patients against psychotic symptoms, and cause delays in advancement of schizophrenia (4). On a par with this theory, a number of recent studies have shown that OCSs can have a protective function against psychotic symptoms (5-7). Epidemiological studies reveal that these symptoms are present in 30 to 59 % of all clients with schizophrenia (7, 8). The prevalence of OCD in Iranian clients with schizophrenia is reported to be 17/2 % (9).

Such relatively high rate of prevalence of OCSs in Schizophrenics on one hand, and the presence of similar structural abnormalities (e.g. basal ganglia, frontal Lobe) (10) on the other have made researchers to conclude that co-occurrence of schizophrenia with OCSs constitute a particular diagnostic sub-group which is specified under the title of schizo-obsessive disorder (6). Due to the existence of overlaps in obsessions and delusions, compulsions and stereotypes, the analysis of this sub-group has faced serious stumbling blocks and the differential diagnosis of these two disorders might at times become quite challenging. Apart from this, since a couple of reports indicate the occurrence of OCSs following treatment with atypical antipsychotic medicines (11). However, there is still a lack of profound understanding about the effects of these symptoms upon schizophrenia.

Studies on the relationship between OCSs and positive and negative symptoms of schizophrenia have yielded contradictory results. Some have reported that schizophrenic clients with OCSs show more positive symptoms than clients without OCSs (12, 13). Guillem(7) also showed a high positive correlation between bizarre delusions and obsessions, and between auditory hallucinations and compulsions. Tiryaki and

Ozkorumak's study (14) also suggested a positive correlation between obsessions and delusions. In accordance with these findings, Garsia-Montes (15) held that those suffering from auditory hallucinations and those showing OCD interpret their thoughts in the same manner. The results of some other studies also revealed that negative symptoms in schizophrenics with OCS are lower than those without such symptoms (16, 6). In a research done on first-episode schizophrenia, Poyurovsky (16) observed lower scores of flat affect sub-scale from the scale for the assessment of negative symptoms (SANS) in schizo-obsessive sub-group than those of the other group. On the contrary, Owashi (4) showed that negative symptoms in clients with schizophrenia clients with OCSs are higher. Finally, in a number of other studies, no significant difference was observed in the levels of negative and positive symptoms in schizophrenia with and without OCSs (5, 17, 8, 18 and 19). Such findings illustrate the fact that co-morbidity of schizophrenia and OCD requires a special clinical picture, but due to lack of consensus among the findings of the studies, the true nature of this clinical picture has remained obscure. In a meta-analysis study (20) on clients with schizophrenia with obsessive-compulsive symptoms (OCSs) without the diagnosis of obsessive-compulsive disorder (OCD) more severe psychotic symptoms were observed than non-OCS schizophrenia, whereas no differences were found between OCD schizophrenia and non-OCD schizophrenia. One probable interpretation could be that if a classical and categorical definition was used instead of OCSs without fulfilling the diagnostic criteria for OCD, in the control group would exist degrees of OCSs resulting in a dilution of the effect of obsessions and compulsions on the severity of psychotic symptoms.

The existing contradictions might also be due to the difference in the duration of the illness among participants or the difference in the methodologies employed. Therefore, more research ought to be done on the frequency of OCS in schizophrenics and the effects of these symptoms on clinical characteristics, psychotic symptoms, and cognitive and social functions of these clients. Hence, the following research, seeking to resolve the existing inconsistencies in the literature, probes to find an answer to the following question: What type of a relationship exists between OCS and negative/positive symptoms of schizophrenia?

Materials and Method

As far as the aim of the study is concerned, the current research belongs to the 'fundamental research' category, and as the analytical methodology is concerned, it is a co-relational study, conducted to probe the relationship between OCSs and negative /positive symptoms in schizophrenia.

Participants

The statistical population of this study consisted of male/female schizophrenia admitted to Iran psychiatry hospital from June 2010 to August 2010. The sample group comprised of 31 schizophrenia with OCSs (19men, 12women) who were selected from the above-mentioned population through convenience sampling. Informed consent was obtained from all the subjects. All the subjects met the criteria for schizophrenia according to DSM-IV-TR by a psychiatrist, which was then confirmed by a clinical psychologist through structured clinical interview for DSM-VI-TR Axis I Disorders(SCID-I)(21). Clients were assigned to different types of schizophrenia: 28 clients to the paranoid type, 2 to the undifferentiated type and 1 to the disorganized type. All the subjects were from 18 to 60 years old and had clinically significant OCSs as confirmed by at least two psychiatrists. A clinical psychologist assessed the severity of OCSs by using Yale-Brown Obsessive-Compulsive scale (Y-BOC). Outpatient subjects were stable and within the last month, no single changes in their prescribed medications were made. Inpatient subjects underwent an interview when they were cooperative enough. The other inclusion criterion was age between 18 and 60 years. Exclusion criteria were: 1) a history of past or current drug abuse or dependence; 2) comorbid mood disorders; 3) mental retardation; 4) presence of extrapyramidal symptoms.

Procedure

The current study was conducted in outpatient clinic and the male and female wards of Iran psychiatric hospital. Subjects were selected based on convenience sampling model, then were interviewed, and they agreed to participate in the study. All the participants were assessed individually in a quiet room.

A minimum score of 8 on the Y-BOCS and minimum of six months duration of OCSs were required for the diagnosis of clinically significant OCSs. Finally,

positive and negative symptoms of schizophrenia were rated by a clinical psychologist using positive and negative syndrome scale (PANSS). In order to maximize the accuracy of information, clients' families were also interviewed.

The checklist of Yale-Brown Obsessive-Compulsive scale (Y-BOC): The checklist presented is a part of the overall Y-BOCS scale which was invented by Goodman and his collogues (22). In this checklist, the score of zero (0) was assigned for lack of problems, (1) mild, (2) moderate, (3) severe, and (4) very severe. Hence, by summing up the scores on all the five scales, a total score of 20 related to the client's obsessions was gained. Finally, based on the acquired score showing the degree of OCD, each client was categorized into one of four different levels, i.e. low (8-15), moderate (16-23), severe (24-31), and very severe (32-40).

This scale enjoys an acceptable degree of validity and reliability in assessing the severity of obsessive

symptoms (22). Evaluators' reliability in 40 clients was 98% and internal consistency coefficient (alpha coefficient) was 89% (23). In a study on 50 Iranian clients, the degree of reliability of this scale, assessed through retest in two weeks time interval, has been reported to be 84% (24).

Positive and Negative Syndromes Scale (PANSS):

PANSS has 30 articles and 3 sub-scales of positive, negative, and general psychopathology for schizophrenia (25). The consensus among evaluators for 31 clients with three sub-scales has been reported to be 0.83, 0.85, and 0.87, respectively; the consistency coefficient was also reported to be 0.73, 0.83, and 0.79 respectively; and validity in a 3-to-6 month time period was 0.80, 0.68, and 0.60 for the three sub-scales (25).

Results

The subjects of the study consisted of 19 males (61.3 %) and 12 females (38.7 %) within the age range of 21-60 with the mean age of 33.06 years. The mean of educational years and duration of illness were 10.54±3.43 and 9.54±9.79 respectively .

As presented in table (1), most of the subjects (15) were within the age range of 21-30, and very few were within the age range of 51-60. The mean and standard deviation of the variables are also presented in table (2). As shown in this table, the mean of positive symptoms (23.87±8.16) is higher than the mean of negative symptoms (21.64±7.83). The mean of compulsions (12.74±5.23) is also higher than the mean of obsessions (9.77±6.56).

Based on the results of Pearson correlation analysis (table 2), obsessions have a significant negative correlation with negative symptoms of clients with schizophrenia (r=-0.424). There is also a significant positive correlation between positive symptoms and negative symptoms of clients with schizophrenia. However, no significant correlation was found between compulsions and negative symptoms of schizophrenic clients. Further, no significant correlation was observed between positive symptoms and compulsions and obsessions.

In order to determine the role of OCSs in the prediction of negative symptoms of schizophrenia, stepwise regression analysis was employed. As presented in the table (3), of the two variables utilized in regression analysis, only obsessions significantly predicted negative symptoms (β=-0.424, t=-2.52, P=0.017) The correlation coefficient of obsession symptoms and schizophrenia negative symptoms is 0.424; this variable is able to predict 18% of schizophrenia negative symptoms variance (R^2 = 0.18). As a result, the findings are statistically meaningful.

Since no significant correlation was found between positive symptoms and obsessions and compulsions, using regression model to predict positive symptoms based on obsessive and compulsive symptoms does not seem logical.

Discussion

According to the findings of the current research, a significant negative relationship exists between obsessive symptoms and negative symptoms of schizophrenia.

The results also showed that obsessive symptoms meaningfully predicted negative symptoms of schizophrenia. In the other words, as the obsessive symptoms increase, the negative symptoms of clients with schizophrenia decrease. However, compulsions did not predict negative symptoms of schizophrenia. This finding is in line with some prior studies, which showed presence of OCSs with schizophrenia was associated with less negative symptoms (16, 26, 27, and 6). In a study on clients with first-episode schizophrenia (16), the schizo-obsessive group showed lower scores in the flat affect subscale from the scale for the assessment of negative symptoms (SANS). In another study by this group (5) on hospitalized schizophrenia, it was reported that no significant relationship was observed between OCSs and positive and negative symptoms of schizophrenia. They concluded that OCSs have a protective effect on some schizophrenia symptoms in the early stages of the disorder, which fade away as the disorder advances. In one study schizophrenia with OCSs showed fewer negative symptoms and had

a better function compared to those schizophrenia without OCSs. The authors reasoned that the fewer negative symptoms in these clients might reflect the higher scores in the scale for Global Assessment of Functioning (GAF) (26).

Lysaker et al.'s study also proved fewer negative symptoms in schizophrenia clients with OCSs. Higher scores in the quality of life scale (QOL) in this group as compared to control group confirmed that OCSs have a protective function in schizophrenia(6). In some other studies, co-morbidity of schizophrenia and OCSs exacerbated the severity of schizophrenia symptoms (28, 29, 14 and 4). A possible explanation of such conflicting findings might be the existing difference in duration of the illness among the investigated subjects, which in turn has caused more negative symptoms and a poorer prognosis of schizo-obsessive clients in the more chronic clients. Owashi's study on the schizophrenia with duration of illness 34 years) corroborates this tentative explanation (4). The subjects of Wetrel's

study consisted of middle-aged and elderly clients with chronic schizophrenia (29). However, there were less negative symptoms in a sample group of clients with brief period of illness, and prognoses of the clients were better.

As an example, the average age and duration of illness of subjects in Tiboo's study (26) were 35 and 6.8 years, respectively.

Table1. Demographic information of schizophrenia clients with obsessive-compulsive symptoms (OCSs) (N = 31)

	Frequency(percent)	Mean/SD
Gender		
Male	19 (61.3)	
Female	12 (38.7)	
Age range		
21-30	15 (48.4)	
31-40	10 (32.2)	
41-50	4 (12.9)	
51-60	2 (6.4)	
Educational background (year)		10.54±3.34
Duration of illness (year)		9.54±9.79
Hospitalization		
Not hospitalized before	3 (9.7)	
Once hospitalized	15 (48.4)	
More than once hospitalized	13 (41.9)	
Antipsychotic medicine type		
Typical	7 (22.6)	
Atypical	21 (67.7)	
Mixture of both	3 (9.7)	

Table2. The mean, standard deviation, and correlation coefficients of schizophrenia clients with obsessive-compulsive symptoms (OCSs)

Variables	Mean	SD	Variables			
			1	2	3	4
1- Negative Symptoms	21.64	7.83				
2- Positive Symptoms	23.87	8.16	0.404*			
3- Obsessive Symptoms	9.77	6.56	-0.424*	0.256		
4- Compulsive Symptoms	12.74	5.23	0.215	0.274	-0.070	

P* < 0.05 N = 31

Table3. Stepwise regression of schizophrenia negative symptoms based on obsessive and compulsive symptoms N=31

Variables	B	SD	β	t	P	R	R^2	Adjusted R^2	F	p
Constant	26.59	2.35		11.305	0.001					
Obsessions	0.506	0.20	0.424	-2.520	0.017	0.424	0.180	0.151	6.352	0.017

Dependent variable: schizophrenia negative symptoms

Apart from this group, subjects of Poyurovsky's study (16) were also clients with the first episode of psychosis. On a par with previous studies, findings of the present study might also be affected by the average age-range of subjects (33.06) and duration of the illness (9.54).

Lysaker (30), Koo (31), and Owashi's (4) findings revealed that more negative symptoms are observed in subjects with schizophrenia subjects with OCSs. However, their findings are in direct contradiction to our results. Such lack of harmony in findings might be due to the fact that the definition of OCSs varied in different studies, which in turn could have led to more severe negative symptoms in those subjects with the diagnosis of OCD at high rates and fewer negative symptoms in those diagnosed as having less OCD (4).

Based on the findings of this study, no significant relationship was found between OCSs and schizophrenic positive symptoms, which are quite in line with previous extensive researches (32, 5, 17, 18, 8, 33 and 19). No significant relationships were found between OCSs and positive/negative symptoms of schizophrenia, proving that OCSs is independent of schizophrenia symptoms. On the other hand the sub-group of schizo-obsessive is probably a unique sub-group of schizophrenia (5, 18 and 19). Our results are in contrast with some other studies in literature (13, 15, 7, 14), in which the presence of OCSs in schizophrenia was associated with more positive symptoms. Lack of agreement in the related literature might be due to the cross-sectional research designs employed on the one hand and the diversity of the sample groups (chronic clients versus first-episode) on the other (34).

Limitations

The small sample size was one of the main limitations of the study. The cross-sectional design of this study, and also lack of a comparison group, did not allow the researchers reach a conclusion regarding the outcome of the schizophrenia clients. Since the evaluations and interviews conducted were the retrospective nature, it was possible that clients' recalled information was biased. We could not investigate the duration of illness on severity of psychotic symptoms in schizo-obsessive clients. It is suggested that in the future studies, with

employing a prospective design, first episode of schizophrenic clients to be evaluated.

Conclusion

This study reveals that presence of obsessions in schizophrenia maintains the psychological function of the clients in dealing with course of the disorder. As a matter of fact, obsessions, reducing the negative symptoms, have a protective function in schizophrenia and do not necessarily cause a poorer prognosis. In addition, it seems that the co-occurrence of schizophrenia and OCSs is related to a specific clinical picture, schizo-obsessive sub-type, which is a different sub-type from schizophrenia disorder. Further studies are needed to evaluate the role of such factors as insight, anxiety, and depression on severity of OCSs. It is advised that this study also be conducted on the subtypes of schizophrenia disorder.

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