An Investigation of Comorbidity of Schizotypal and Borderline Personality Disorders with Obsessive–Compulsive Disorder and the Relationship between Their Personality Characteristics and the Severity of Obsessive–Compulsive Disorder

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Abstract: Introduction: In the 4th edition of *Diagnostic and Statistical Manual of Mental Disorders* obsessive disorders are classified as a subgroup of anxiety disorders. Magical thinking is the mutual trait between obsessive-compulsive disorder and schizotypal personality disorder. On the other hand, magical thinking is recognized as one of the main traits of obsessive-compulsive disorder. Given the fact that to date no study has investigated the comorbidity of personality disorder with obsessive-compulsive disorder (OCD) and its effect(s) on the personality disorders, the present study aims to investigate the comorbidity of schizotypal personality disorder (SPD) and borderline personality disorder (BPD) with OCD and to find out the relationship between them and the severity of OCD. Materials and Method: The current study is of descriptive, cross-sectional type. 140 patients who visited Razi Training and Medication centre and Bozorgmehr clinic in Tabriz were under study for 12 months. The patients afflicted with other mental disorders except SPD and BPD were excluded from the study. The sampling was carried out via convenience sampling method. Clinical interviews were carried out with individuals to diagnose OCD patients. Then, schizotypal personality disorder and BPD patients were diagnosed via structured clinical interviews prepared on the basis of DSM-IV-TR diagnostic criteria to assess the comorbidity of SPD and BPD with OCD. In the next phase, Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Schizotypic Syndrome Questionnaire (SSQ) and borderline personality scale (STB) were used. The obtained scores from the questionnaires were recorded to find out the relationship among SPD, BPD and the severity of OCD. Findings: According to the findings of the study the comorbidity of SPD with OCD is estimated at 41.4%, while it is estimated at 18.6% for the comorbidity of BPD with OCD. Furthermore, there is a significant and positive correlation between Yale-Brown, SPD and BPD scores of the patients ($r = 0.22$, $P<0.01$). Results: The results of the study show that first; there is a high comorbidity between SPD and OCD. Second, schizotypal and borderline personality traits contribute to the severity of OCD. Third, SPD is an effective predicator of OCD.

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1. Introduction

The comorbidity of SPD with OCD is among the most common mental problems (Poyurovsky & Koran, 2006). Sobin et al. (2000) refer to a kind of OCD with similar traits to psudopsychotic schizotypal which is distinct from OCD without similar schizotypal traits. In addition to the comorbidity of OCD with SPD, there is structural similarity between them among which are magical thinking and autogenous obsessions. Magical thinking is considered as a mutual symptom between OCD and SPD which manifests itself as Thought-Action fusion in OCD (Lee et al., 2005). Lee and Kwon (2003) refer to two types of obsessions; autogenous obsessions and reactive obsessions. The results of the study by Lee and Telech (2005) show a strong relationship between autogenous obsessions and schizptypic personality. As above mentioned studies suggest, the likelihood of the relationship and correlation between OCD and SPD is high. Generally, OCD patients obtain high scores in questionnaires distributed among them to measure their SPD (Tallis and Shafran, 1997). This indicates that there are mutual points in pathology or at least in diagnosing the symptoms of these two types of disorders. The individuals who are afflicted with BPD or SPD in comparison with other personality disordered patients experience more severe mental-social deficiency (Skodol et al., 2002). The results of the study by Becker et al. (2000) show a comorbidity

of BPD with cluster disorders [1] among teenagers. According to Rawlings et al. (2001), there is a significant relationship and correlation between schizotypic and borderline personality traits. As the studies show, a range of psychotic phenomenon is probably observable in OCD, SPD, BPD, schizotypal personality and schizophrenia. Fineberg et al. (2007) in their book *Obsessive- Compulsive Disorder* refer to the relationship between SPD and schizophrenia. They, further, state that at least 5% of OCD patients suffer from SPD and OCD is more common among the deficient type of SPD. According to Torgersen et al. (2002), some schizotypic and borderline personality traits are seen in the relatives of schizophrenia patients. It seems that psychiatrists and psychologists are interested in OCD and BPD. In this regard Kernberg (1980) proposes that OCD and its symptoms have been observed in BPD patients. Aksikal (1981) and Zanarini et al. (1990) reported 10% comorbidity of OCD with BPD. However, the results of the long-term observation of OCD patients show a higher comorbidity compared to the previous studies (Hayashi, 1992). A 10-year case study reports the following mutual symptoms between OCD and BPD patients; poor insight, resistance and explicit obsessive control over personal relationships (Hayashi, 1996). As Huang et al. (2011) suggests, the schizptypal personality contributes to the severity of OCD. However, there is no information regarding the increase of OCD severity in comorbidity with BPD. As the review of the related literature shows, there is an overlap among OCD, schizotypal personality and borderline personality (Kernberg, 1980; Lee & Telech, 2005; Poyurovsky & Koran, 2005; Tallis & Shafran, 1997) which can decrease the efficiency of job and social performance and lead to poor prognosis and the problems in the diagnosis and treatment process of the patient (Huang et al., 2011). Thus, the present study aims to investigate the comorbidity of SPD and BPD with OCD. It further attempts to find out the relationship between SPD and BPD personality characteristics with the severity of OCD. The results of the study broaden the scope of knowledge about OCD, SPD and BPD. It implicitly clarifies the relationship between these three types of personality disorders and schizophrenia. Thus, the proposed research question for the current study would be:

- Is there a comorbidity of Schizotypal Personality Disorder (SPD) and Borderline Personality Disorder (BPD) with Obsessive–Compulsive Disorder (OCD)?

In a similar vein, the proposed hypothesis of the study would be:

- There is a relationship and meaningful correlation between comorbidity of Schizotypal Personality characteristics and Borderline Personality characteristics and severity of Obsessive–Compulsive Disorder (OCD).

[1]Personality disorder with strong abnormal mental-behavioral patterns

Materials and Method

This descriptive, analytical, and cross-sectional study was carried out on patients who visited the psychiatric and psychology centres in Tabriz and were diagnosed as OCD patients. The demographic information was obtained by asking the patients to fill out the questionnaires. After the compatibility of demographic information with the inclusion criteria was confirmed, the structured clinical interviews, based on DSM-IV-TR diagnostic criteria, were conducted. As a result, 140 OCD patients using convenience sampling method were selected for the study. The structured clinical interviews, on the basis of DSM-IV-TR diagnostic criteria, were carried out with the patients to diagnose SPD and BPD and their comorbidity with OCD. The semi-structured interviews (SCID) were conducted to exclude the patients with other mental disorders. In the next step, Yale-Brown Obsessive-Compulsive Scale (Y_BOCS), the schizotypic syndrome questionnaire (SSQ) and the borderline personality traits questionnaire (STB) were filled out by OCD patients and the obtained scores were recorded to investigate the relationship between OCD and SPD/BPD. To observe the ethical consideration, the patients were informed orally (prior to interview) and in written form (in questionnaire) that the collected data will be used only for the research purposes. The inclusion criteria included those patients who were diagnosed as OCD patient on the basis of DMS-IV-TR criteria, were literate with at least 3rd grade junior high School certificate, and were at least 18 years old. The exclusion criteria included the following: Having any kind of schizophrenia history, afflicted with any type of mental disorder except for OCD, SPD and BPD diagnosed by SCID, and taking any prescribed/ non prescribed anti psychotic drugs or addicted to substance abuse. Descriptive statistics, including frequency, percentage, Pearson correlation coefficient, regression and stepwise multivariable regression were used to investigate the relationship between OCD and SPD/BPD. SPSS version 16 was used for analysing the data.

Instruments

The following instruments were used for collecting the data:

Structured clinical interviews based on DSM-IV-TR diagnostic criteria: These instruments based on DSM-IV-TR diagnostic criteria, which in turn are based on

SCID, are used for OCD, SPD and BPD diagnoses. They were prepared by two researchers, a master and a PhD in clinical psychology. Indeed, in the current study a structured clinical interview on the basis of DSM-IV-TR diagnostic criteria was carried out with each patient to ensure the diagnosis of his/her disorder. SCID was developed in the late early 1990s to provide a standardized DSM-III-R Axis I diagnosis based on an efficient but thorough clinical evaluation (Spitzer et al., 1992). It has since been updated for the DSM-IV (Sadock et al., 2009).

It has two versions; SCID-I which is used to assess psychiatric disorders of Axis I in DSM-IV. SCID-II measures the diagnosed personality disorders by DSM-IV. SCID is the most common and standard type of interview used in the psychiatry and clinical psychology, the validity and reliability of which have been estimated by various scholars (Zanarini et al., 2000). Bearing in mind that SCID is a semi-structured instrument and the clinical judgment of the psychiatrist/psychologist plays a significant role in the diagnosis, its validity depends on the conditions under which it is used (First et al., 1997). In a study on 299 patients, 18-65 years old, Lee et al. (2005) found that diagnostic agreement for the majority of specific and general disorders on the basis of the Persian version of SCID was average-good (kappa coefficient > 0.6).The general agreement (total kappa coefficient) for all current diagnosis was estimated at 0.52 and for the lifelong diagnosis it was 0.55. The present study made use of three structured clinical interviews conducted on the basis of DSM-IV-TR diagnostic criteria and SCID.

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS): The scale was developed to measure the degree of obsessive-compulsive symptoms in 1980. The first five items which measure the obsession include;

- The time spent for obsession.
- The interference due to obsession.
- The problems due to obsession.
- Resistance
- The degree of controlling obsession.

The second five items measure the compulsion. The range of scores for each item is 0-4 and the total score is 20-40. The patients should answer Yale –Brown symptom checklist before scoring the scale. The checklist is developed to investigate obsessive and compulsive symptoms. The psychometric properties of this scale (i. e., reliability and validity) are valid and acceptable to measure the severity of obsession-compulsive symptoms. The validity of the scale is measured as 0.93 (Rabiei et al., 2011). The scale consists of two sections; 1) an inventory of investigating symptoms that specifies the time and content of the obsessions and compulsions 2) the severity of obsessions and compulsions that is determined via scoring. The scoring of the scale is based on the investigating list of symptoms as the patient specifies the severity of his/her obsession using the numbers on the scale. The sum of the obtained scores shows the severity of obsessions and compulsions separately.

Shizotypic Syndrom Questionnair (SSQ): Kampen (2006) suggests 12 symptoms to define the time and cause of schizophrenic prodromal symptoms, including social anxiety (SAN), active isolation (AIS), living in a fantasy world (FTW), affective flattening (AFF), egocentrism (EGL), hostility (HOS), feelings of alienation (AIN), perceptual disturbances (PER), delusion thinking (DET), suspension (SUS), apathy (APA) and cognitive derailment (CDR). He proposed schizotypic syndrom questionnaire (SSQ) to measure the 12 above-mentioned symptoms. In three studies he investigated the psychometric properties, factorial structure and the hypothesis of causal relationship among symptoms using a large sample of normal participants. The results of Kampen's study show that SSQ is a helpful tool to study schizophrenic prodromal. The psychometric properties of the questionnaire are reported at satisfactory level and its validity for Iran community was estimated at 0.95. To answer the 108- item questionnaire, the participants should mark one of the four suggested options, (i.e., strongly agree, agree, disagree and strongly disagree). The total score of strongly agree (3), agree (2), disagree (1) and strongly disagree (0) shows the shizotypic personality disorder and its severity in each 12 aforementioned symptoms.

Borderline Personality Questionnaire (STB): STB is one of the most common BPD conditions that refer to the unstable interpersonal relationships, such as ambivalence and the problem of controlling emotion. STB measures the borderline traits of normal individual on the basis of psychological continuum model. The scale was adapted from STQ (Schizotypal Trait Questionnaire). It consist of two scales; scale A: schizotypic personality (STA) and scale B: borderline personality (STB). Mohammadzadeh et al. (2005) used DSM-IV-TR diagnostic criteria to adapt the questionnaire. The estimated validity was reported at 86%. The results of their study demonstrate the acceptable psychometric properties of STB scale for Iran community. Thus, it could be used in the researches and studies by Iranian psychologists and psychiatrics. STB scale includes 18 Yes/No items. The allocated score for 'Yes' item is 1 and for 'No' item is zero. During the validation process of the Persian version of STB scale, six more items were added to the original one. Thus, Persian version of STB includes 24 Yes/No items.

Findings

All in all 140 male and female patients afflicted with OCD participated in the present study. Table 1 illustrates the demographic information of the participants.

Table 1. Demographic information of Participants

Gender		Marital Status			Education			Age			
Male	Female	Single	Married	Widow	Under B.A/B.S	B.A/ B.S	M.A/M.S	Max	Min	Sd	Mean
61 (43.6%)	79 (56.4%)	83 (59.3%)	53 (37.9%)	4 (2.9%)	83 (41.3%)	50 (35.7%)	7 (5%)	45	20	4.79	31

All the participants were Turkish speakers (Azeri) and Muslim. In terms of physical disease, except one patient who suffered from uterine infection, all the participants were healthy. To investigate the comorbidity of SPD and BPD with OCD, the descriptive statistical methods, such as frequency and percentage were used.

Table 2. Comorbidity of SPD and BPD with OCD

Gender	No. of participants	Comorbidity of SPD with OCD (%)	Comorbidity of BPD with OCD (%)
Female	79	42 (53.16%)	24 (30.37%)
Male	61	16 (26.22%)	2 (3.27%)
Total	140	58 (41.42%)	26 (18.57%)

From among 140 patients afflicted with OCD 79 were female and 61 were male from among whom 58 suffered from SPD according to the obtained scores from SSQ scale (16 men and 42 women). The comorbidity proportion of SPD with OCD was 41.4%. According to the obtained scores from STB scale, 26 patients out of 140 suffered from BPD (2 men and 24 women). As the findings show, the number of women afflicted with BPD surpasses those suffered from SPD. The comorbidity of BPD with OCD was estimated at 18.6%. To investigate the relationship between SPD/BPD and OCD, their correlation coefficient matrixes were compared.

Table 3. Comparison of Correlation Coefficient Matrixes

Variable	STB	SSQ
Yale-Brown	0.220**	0.223**
Obsessive	0.157	0.10
Compulsive	0.180*	0.240**

** P<0.01 *P<0.05

As Table 3 shows, the correlation among Yale-Brwon total, STB and SSQ scores is meaningful (rSTB = 0.220, r SSQ = 0.223, P<0.01).

Table 4. Correlation matrix among research variables

Variable	Borderline Personality characteristics	Severity of OCD	Schizotypal personality characteristics
Borderline Personality characteristics	1	0.22**	0.336**
Severity of OCD	-	1	0.223**
Schizotypal Personality characteristics	-	-	1

** P<0.01 N=140

As Table 4 shows, there is a meaningful relationship among borderline, Schizotypal personality characteristics and severity of OCD. Table 5 shows the results of the stepwise multiple regressions carried out to investigate multi-level relationship between SPD/BPD characteristics and severity of OCD.

Table 5. Stepwise multiple regression

Step	R regression	R square	F	significance
1	[a] 0.223	0.050	7.207	0.008

[a] The predicator of Schizotypal personality characteristics

A close look at Table 5 reveals that in the regression step 1 the Schizotypal personality characteristics scores were used in the equation and regression model. Furthermore, the obtained multiple regression in the last step was 0.223. F=7.207 at 0.01 level is meaningful which refers to the significance of the relationship. Thus, it could be concluded that from among the investigated factors in the present study, Schizotypal personality characteristics are effective predicators for the severity of OCD symptoms.

Table 6. The multiple regression coefficient analysis to investigate the multi-relationship among SPD, BPD and OCD

step	Independent variables	Non-standard coefficient		Standard coefficient	t	Significance
		B	Standard Error	Beta	4.843	0.00
	Fix amount	11.811	2.439	---		
1	Schizotypal personality	0.230	0.086	0.223	2.685	0.008

As illustrated in Table 6, from among the explored factors, Schizotypal personality characteristics scores were inserted in the regression equation in the final step and the other factor (i.e., borderline personality characteristics) was eliminated from it. Taking into account the results of the table 6, the non-standard regression equation can be developed as:

Severity of OCD = 11.811 + Schizotypal personality characteristics (0.23)

The results of the step by step analysis of the regression, illustrated in Table 6, show that from among two variables; that is, Schizotypal and borderline personality characteristics, the former can be an effective predicator of severity of OCD.

Discussion

The present study was an attempt to investigate the comorbidity of SPD and BPD with OCD as well as the relationship between schizotypal and borderline personality characteristics and the severity of OCD. The question arisen in the mind of the researchers was "To what extend do schizotypal and borderline personality disorder coexist with OCD?" Fienberg et al. (2000) in their book entitled *Obsessive-Compulsive Disorder* state that there is a relationship between SPD and schizophrenia. They, further, opine that at least 5% of OCD patients suffer from SPD and it is very common among the weakening type of OCD. They add that Schizotypal personality disorder is the predictor of weak response-based therapy, dissatisfactory prognosis and social performance deficiency. The comorbidity of SPD with OCD has been investigated by different scholars. However, there is disagreement among the released results. Moreover, it is unclear whether symptoms and traits of SPD intensify OCD or not (Stanley & Borden, 1990). The studies show that Schizotypal personality characteristics contribute to the deficiency of OCD patients. The co-occurrence of Schizotypal personality characteristics and OCD is the predicator of weak response –based therapy. It may be a mutual factor which connects other psychosocial indices of dissatisfactory prognosis, such as weak social performance, dissociated treatment period and poor insight (Feinberg, 2007). Likewise, there are scarce studies on BPD. Zanarini et al. (2004) in their article "Axis I comorbidity in patients with BPD" opine that Axis I disorders and Axis II personality disorders represent the poor prognosis of treatment. Tolin and Abramowitz (2001). in their article "Fixity of belife, perceptual aberration, and magical ideation in obsessive - compulsive disorder" as they state that the perception of OCD as a part of SPD is due to the comorbidity of OCD with SPD (Tolin & Abramowitz, 2001). The results of the present study validate their findings which show a high comorbidity of SPD and BPD with OCD (see Table 2). The comorbidity of SPD with BPD and the comorbidity of both SPD and BPD with Axis I disorders have considerable effect on individual's social performance (Skodol et al., 2002). The OCD patients who suffer from SPD or any kind of major depressive disorder represent weak social performance and withdrawal from society (Hopwood et al., 2006). The participants of this study were dissatisfied with their social and educational performance and often complaint about it. According to the findings, the single SPD participants show higher comorbidity with OCD compared to the married ones. In terms of the gender of the participants, the number of SPD female patients surpassed the males. In the present study the comorbidity of SPD with OCD was estimated at 41.4%. Indeed, from among 140 OCD patients 58 patients suffered from SPD at the same time (see Table 2). The high comorbidity is considerable and might be inspiration for further studies to find out the reasons behind it. On the other hand, the results of the present study confirm the comorbidity of OCD with BPD. As it is shown in Table 2, the estimated comorbidity of BPD with OCD is 18.6%. In other words, 26 out of 140 OCD patients suffered from BPD at the same time. The findings show that there is a meaningful correlation between schizotypal personality characteristics and the severity of OCD ($P<0.01$, $r=0.22$) (Table 4). Another reading of the

findings pertains to a significant relationship between BPD characteristics and the severity of OCD ($p<0.01$, $r=0.22$). Although the findings refer to meaningful relationship between BPD characteristics and OCD (Table 4), the results of regression analysis (Table 5), which has been carried out to investigate the multi-variability of relationship between BPD/Schizotypal personality characteristics with severity of OCD, show that from among the correlated variables Schizotypal personality characteristics is the only predicator of OCD severity. Thus, it could be concluded that SPD is an effective predicator of high severe OCD. But, BPD is not an effective predicator of OCD. Thus, the findings of the present study is considered as a step towards developing our basic knowledge of OCD and its relationship with schizophrenia disorders, Schizotypal personality disorder and borderline personality disorder. In addition, the study on the comorbidity of SPD and BPD with OCD arms behavioural specialists and scientists with some knowledge about these patients and provides them with new methods to deal with this mental disorder. It is suggested that the findings of the current study are retested with samples from other social classes to make explicit the quality of the discovered relationships among expanded social levels.

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