Original Article

Schema and Locus of Control as Predictors of Obsessive Compulsive Disorder

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Objective: The study aimed to evaluate the correlation of maladjusted schema and locus of control with OCD, with the emphasis on cognitive approach to OCD .
Method: In this study, 273 Iranian participants were selected; of whom,30% were male and 70% were female. Participants'age ranged from 19 to 34 and the mean age for the sample was 23.42(SD=2.46). Participants completed questionnaire batteries including measure of Levenson Locus of Control, Young Schema Scale and Y –bocsOCD Scale. One sample consisted of patients with a primary OCD according to DSM-IV criteria. The other sample selected for this cross-sectional study was university students.
Result: Regression statistics item and reliability analysis were calculated with SPSS and LISREL software. Obsessive compulsive disorder was significantly predicted with both schema and powerful others' locus of control, as these relations were large but association schema with OCDwas larger than the correlation OCD with powerful others (OCD with schema p.v<0.001 β=.47 and OCD with powerful others p.v<0.001 β=.15) .
Conclusion: The findings of the present study showed that schema and powerful others type of locus of control, were significantly related to both total OCD symptom severity and also to other sub scale of OCD. It is important to mention that schema can significantly predict all symptoms dimension of OCD. Furthermore, the analyses showed that schema was a strong predictor for obsessive thinking.

Key words: *Cognitive therapy, Internal-external control, Obsessive-compulsive disorder*

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Schema model of obsessive compulsive proposes that abnormal beliefs and locus of control strategy are important in predicting obsessive compulsivedisorder (OCD). Although some studies have demonstrated the relationship between locus of control and OCD, very little research has tested the relationship between maladjusted schema and OCD. Therefore, the present study addressed this gap in the literature .

Schema was developed by Young and his colleagues; they also extended the cognitive-behavioral concepts(1). Cognitive behavioral model or schema, presents a specific relation with obsessive compulsive disorder(2).Schema therapy suggests that negative thought conditions are based on past experience, so it provides models for important negative beliefs and behaviors in order to provoke changes(3). Cognitive psychiatrists have used the concept of schema to understand the interaction of key factors affecting the comprehension process. Schema is a conceptual system for understanding knowledge -- how it is represented and how it is used .

Thinking disorder occurs in obsessive compulsive disorder more than other anxiety disorders. Einstein and Menzie (4) found that magical thinking is a clinical characteristic of OCD that distinguishes it from the other anxiety disorders. Cognition and cognitive approaches are important pre-dispositional factors in the development of obsessive and compulsive disorder. According to this assumption, the patient operates on a level of rational style in his/her behavior. (5) Belief domains which consist of perfectionism, tolerance for uncertainly, answerability or responsibility, judgment of threat, control of thoughts and value of thoughts are recognized by obsessive compulsive cognition working Group (OCCWG) (6).

Previous studies show that obsessive compulsive disorder is associated with middle cognitive deficits (7) and it has an impact on 1. 9% to 2.5% of individuals worldwide at some point in their lives. (8) Looking to present theories in OCD, cognitive models of the disorder propose that there is maladjustment in development and maintenance of O CD(9). Maladaptive beliefs are considered highly critical to the pathogenesis and continuation of obsession. Rachman proposes that compulsive behaviors develop as a means of coping with anxiety. The relationship between anxiety and intrusive thought is reciprocal; as anxiety

increases in this loop, intrusive thoughts increases well. Interpretations of the intrusion significantly lead to increased anxiety, and this further increases subsequent intrusion. (9) Considerable information is available on cross-sectional data indicating a significant relationship between many belief domains and obsessive compulsive disorder. (10) The purpose of this study was to relate OCD to schema and locus of control. The concept of locus of control was introduced by Rotter in 1966. Internal locus of control is a concept suggesting that events depend on one's own behavior or one's own permanent characteristics, while external locus of control is distinguished by the feeling that consequences are results of fate, luck, chance, and control of powerful others or are unpredictable due to the complexity of situations(11). A personality variable influences locus of control on obsessive compulsive adjustment. Locus of control refers to an individual's perceived belief co ncerning t he d eterminants o f rewards and punishments and ability to control the events.

Obsessive-compulsive disorder is a ch ronic anxiety disorder characterized by obsessions and compulsions. (12) Obsessions are persistent thoughts, images, and impulses that cause both remarkable distress and a motivation to get rid of unwanted thoughts (12). Compulsions are repetitive and purposeful behaviors that are performed to reduce anxiety and distress caused by the obsessions (12).

Materials and Method

Two hundred seventy three individuals (30% male and 70% female) were selected to participate in this study. Participants' age ranged from 19 t o 34 a nd the mean age for the sample was 23.42(SD=2.46). Participants completed questionnaire batteries including measure of Levenson Locus of Control, Young Schema Questionnaire and Y-bocs OCD scale. One sample consisted of patients with a primary OCD according to DSM-IV criteria, and the other included university students.

Procedure: After receiving permission from the Ministry of Payame Noor University, Mehr and Aftab hospitals, the researcher made personal visits to the principals of hospitals and the department of PayameNoor to explain the purpose of the study and to request their assistance. Data were collected through the collaboration with the counseling center and guidance services and an informed consent was obtained. Administration was during 2011(2 semesters).

The Research instrument was administrated to university students during regular class hours and to the patients in hospitals. The scales were presented in a randomized sequence to eliminate the errors related to the influence of ordering. The research instrument was only given to voluntary participants. Each administration took about 45 to 60 minutes.

Before the analyses, all data were screened through various SPSS and Lisrel programs for accuracy of the data entry, missing values, and outliers, fit between the distributions o f th e v ariables, and th e assumptions of multivariate analysis.

Instruments

Y-BOCS Symptom Checklist and Severity Ratings: The Y-bocs scale was successful in distinguishing patients with OCD and patients with other anxiety disorders as well as normal persons. (13) A number of different types of reliability and a measurement of internal consistency are appropriate for the psychometric analysis of the Y-bocs. Test- retest reliability was used for Y-bocs scale. The inter-rater reliability of the 10 items Y-bocs was initially evaluated in patients with OCD. Spearman correlation revealed that raters generally agreed with each other on how to rank the patients. (14) The Y-bocs has been widely used as an outcome measure in both clinical trial and clinic setting, and indeed is considered the good-standard measure of response to treatment in international treatment guide line for adults (15). The Persian version of the Y-BOCS by Rajezi Esfahani, et.al, 2012 has excellent internal consistency: the best levels of internal consistency was estimated as symptom checklist 0 .97, s everity s cale 0.95; and split-half reliability as symptom checklist 0 .93, severity scale 0.89;and test- retest reliability as (0. 99)(16).

Levenson Locus of Control Scale: Locus of control was measured byLevenson, I, P and C scales. Each scale includes eight items and is designed to measure the extent to which individuals believe that outcomes are due to their own actions, to powerful others or to chance. Participants were asked to rate each statement on a 4-point Likert scale with 1 = strongly disagree, 4 = strongly agree. (17) The Rotter (1966) I-E locus of control assesses an individual's attributions of control as being either internal (I) external (E). Levenson (18) modified I-E scale to distinguish attribution of control to other persons, powerful others (P) from such other external factors as fate or lock, which she categorized as chance (C)(19). Thus, her multidimensional instrument contains three separate I, P and C scales. Levenson also attempted to reduce the biases in the Rotter. Reliability and validity of Levenson scale had been identified by numerous researchers (19). The Persian adaptation was performed by Farahani (1994). He reported the Cronbach's alpha coefficient in sequence I P C as 0.67, 0.57, and 0 .76(20).

Young Schema Questionnaire: The Young Schema Questionnaire's Short form (YSQ) consists of 75 items and measures eighteen cognitive schemas. To establish the psychometric properties of the YSQ version, the instrument and its sub-scales have a very good reliability, and the Cronbach coefficients run between .68 and .96. The YSQ has a good discriminative validity. Based on YSQ scores, it can predict the social phobia development. Furthermore, significant

correlation was found between YSQ and automatic thoughts scores(21). The Persian version schema questionnaire has75 items, which was confirmed by Zolfaghari, et al (2008) in Iran. They performed the short form of this research with the same scale, and the internal consistency was = 0.94 (22).

Results

The participants comprised of 213 university students without OCD symptoms and 60 co-morbid psychiatric disorder patients in a hospital which had OCD. Descriptive statistics revealed that the mean score for OCD patients was =71, SD=12.40, and it was =40.13, SD=13.40 for students.

The main purpose of the present study was to examine whether there is a significant relationship between obsessive compulsive disorder and locus of control as a predictor variable and its sub-scales (internal control, powerful others and chance). Regression analysis of OCD with maladjusted schema showed a positive association between them. Analysis of total OCD reveals a s ignificant association between total OCD with OCD severity (r=.85).

Table 1 demonstrates that obsessive compulsive disorder was significantly linked with both schema and powerful others locus of control. Although these associations were large, schema was a strong predictor because the connection of schema and OCD were larger than the relation of OCD with powerful others (OCD with schema p<0.001, =.47 and OCD with powerful others p<0.001, =.15). Regression of the OCD sub-scale is presented in Table 1.

The highest prediction was found between aggression and schema (p<0.001, =.47). The correlation between aggression and powerful others was moderate (p<0.001, =0.085).

The other relation of the OCD sub-scale and schema was as follows (checking, p<0.001, =.24, collecting, p<0.001, =.35). The connection between OCD and internal locus of control was significantly weak (p<0.071, =0.012). The association between arranging and powerful others was quite high (p =0.001, =0.30). Furthermore, a s imilar result was obtained in the correlation of checking and powerful others, but this relationship was more moderate than arranging (p<0.001, = .15). Table 1 demonstrates a significant association between collecting and powerful others (p<0.001, =0.30). Examination of the Beta for OCD patient predictors showed that schema and powerful others were significant predictors of obsessive compulsive disorder.

Data demonstrated a significant relationship between powerful others and schema. Statistical analysis for each variable is shown in Table 2.

The scale of powerful others was positively related to obsessive compulsive disorder, and maladjusted schema were moderately associated with OCD .

Table 1.The regression analyses between obsessive compulsive sub scales and locus of control aspects with maladjusted schema calculated by SPSS.

Locus of control	Internal		Others		Chance		Schema	
OCD	P.V	β	P.V	β	P.V	β	P.V	β
Contaminate	.007	.030	.031	.081	.092	.055	.011	.15
Repeating	.083	.034	<.001	.015	.050	.030	.002	.35
Arranging	.063	.013	<.001	.30	.039	.061	<.001	.30
Aggression	.437	.073	<.001	.085	.051	.072	<.001	.46
Checking	.427	.046	<.001	.15	<.001	.31	<.001	.24
Collecting	.421	.043	<.001	.30	<.001	.30	<.001	.35
OCD	.071	.123		.15	.002	.12	<.001	.47

p<.01

Table 2: Statistical regression analysis between locus of control dimensions and mal adjusted schema with OCD by LISREL software.

p<.01

indications	OCD	
	Chi square	p.v
Internal	8.508	0.014
Powerful others	20.817	0.000
Chance	7.039	0.030
Schema	4.761	0.013

Table 3.The regression analysis between OCD severity with locus of control and maladjusted schema

Locus of control	Internal		Others		chance		schema	
OCD	p.v	β	p.v	β	p.v	β	p.v	β
Obsession	.021	.062	<.001	.068	<.001	.24	<.001	.47
Compulsion	.031	.036	<.001	.12	.016	.10	<.001	.30
Total OCD	.012	.096	<.001	.11	.002	.15	<.001	.40

P<.01

The interaction between severity of obsessive and maladjusted schema is presented in Table 3. Significant correlations in highest level were found between obsessive severity subscale, and schema approach (p<.001 =.47). Relation of the total severity, obsessive compulsive disorder with internal of locus of control were low (p=.096, =.012, p=.036 =.031, p =.021, =.062).

Discussion

The present study investigated the relationship between locus of control dimensions and general obsessive-compulsive symptomatology. The literature indicates that different dimensions of locus of control are correlated with different psychological disturbances especially obsessive compulsive disorder. However, there has been research on the relationship between different aspects of locus of control (internal control, chance, powerful others, fate) and subtypes of OCD. Therefore, this research investigated the effects of different prospects of locus of control on subtypes of OCD. External locus of control is a very important personality variable which predisposes individuals to develop psychopathology. Literature indicates that externality is positively related to several psychopathologies, specifically obsessive compulsive disorder. This study showed that compulsive and obsessive disorder is associated with powerful others (P) and chance(c) locus of control.

The study aimed to evaluate the correlation of maladjusted schema and locus of control with obsessive compulsive symptoms. This research emphasized the cognitive approach on OCD. The findings of the present study showed that schema and powerful others were related significantly to both total OCD symptom severity and also with other sub-scales of OCD namely aggression, checking, and collecting. It is important to note that schema significantly predicts all symptoms of OCD dimension.

The results of the present research are in accordance with Bagherian ,Bagherian and Ahmadzadeh (23). Bagherian and his colleagues found a r elationship between external locus of control and psychological disorders. Internal locus of control was negatively associated with mental illness, and there was a strong and positive relationship between mental disorders and chance control. On the other hand, in this survey, the relationship between external locus of control and the sub-scales such as aggression was not high. The finding of Ali Lowe (1997) was consistent with this research, because some obsessive patients are extremely responsible in their tasks. OCD is the result of the heterogeneous nature of obsessive compulsive disease (24).

First, the analyses showed that schema was a strong predictor for obsessive thinking. Makilln found that obsessive belief was significantly correlated with OC symptom (24). On the other hand, the result of the current study was inconsistent with the result of Mulding and Kirios, Alt n, & Karanci (25) (26) which showed a s ignificant relationship between OCD symptom and low level of sense of control. Past researchers have found a conflicting relationship between schema and OCD. The present study found a relationship between schema and OCD and this result is consistent with finding of Foa et al.(27).In their study, they found a relationship between thinking and cognitive style with OCD. Schema therapy significantly contributed to the cognitive-behavioral approach, and this supports the finding of previous studies which reported a s trong correlation between cognition and OC symptom (28).

The current study was consistent with a r esearch that showed a r elationship between beliefs about control and anxiety disorder, particularly with OCD. This study demonstrated how consideration of control cognitions could enhance our understanding of OCD and improve its treatment (25). Indeed, the previous study showed that OCD is related to maladaptive beliefs (10).

Second, the correlation analysis showed that obsessive compulsive disorder was significantly linked with a powerful others and a l ow degree of belief in internal locus of control. A similar result was obtained in group of OCD patients that showed a positive relationship between powerful others and OCD (29).

Barbara et al. studied Levenson, internal (I) powerful others (P) and chance (C) locus of control scale with other anxiety disorder. They found specific pattern for some of the diagnostic categories. On the basis of their research, the obsessive compulsive patients had the lowest (P) and (C) scale as compared with other group with anxiety disorder (30).These results were inconsistent with the result of the current study. Locus of control had only a main impact on obsessive thinking symptom scores (26). Previous studies which were conducted to investigate the relationship between locus of control and anxiety, reported a co rrelation between externality and anxiety disorder. (31)There are a lot of cognitive factors in OCD. However, obsession is not homogeneous because many factors are involved with OCD (32).

Limitation

Participants in this study were of traditional age, and some students were enrolled in the long-distance education program in Payame Noor University (Hamadan.Iran), so the results of this study may not be generalizable to other populations. In addition, the results are limited by the extent to which the participants responded honestly and accurately. The results are also limited by the accuracy of the instruments to measure the constructs that were the focus of the study.

The cross-sectional design used in the present study provides information on relationships rather than causal directions. Therefore, future research employing a longitudinal design will provide more reliable results on the direction of the effects noted.

Conclusion

Schema and powerful locus of control are significantly correlated with OCD, especially with obsessive thinking. That is, high level of schema grade and locus of control indicated that powerful others and chance were associated with higher obsessive thinking and obsessive compulsive disorder. Individuals with low schema score and high internal locus of control exhibited significantly better control of thinking than those with the opposite pattern as well as high powerful others and chance.

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Conflict of interest statement

The Authors declare that they have no conflicts of interest; they are aware of no real or apparent conflict of interest that might influence the content of this manuscript.

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