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Prediction of Obsessive-Compulsive Disorder Symptoms Via Early Maladaptive Schemas

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Abstract **— The purpose of this study was to predict obsessive-compulsive disorder symptoms via early maladaptive schemas. The sample size was 52 patients with obsessive-compulsive disorder, from September 2016 to the end of February 2017 were visited in health centers. These patients referred to medical centers and clinics in Kermanshah city were selected through structured interviews and the Yele Braown Obsessive Compulsive Scale (Y-BOCS). 15 early maladaptive schemas through Young Schema Questionnaire-Short Form (YSQ-SF) were measured. Analysis of the correlation matrix showed that almost all early maladaptive schemas are meaningful relationship with the symptoms of OCD. The analysis of regression coefficients showed that with 6 early maladaptive schemas vulnerability to harm or illness, failure, emotional deprivation, emotional inhibition, unrelenting standards, and dependency can be explained approximately 50% of the symptoms of OCD. As well as with the total score of the Young schemas questionnaire can be explained 39% of the symptoms of OCD. Correlation and regression analysis in this study showed that the most of early maladaptive schemas and symptoms of obsessive-compulsive disorder and there is a significant positive relationship.**

Keywords **— Early Maladaptive Schemas, Obsessive-Compulsive Disorder, Schema Therapy, Mental Health, Young Schema Theory.**

I. INTRODUCTION

Among patients with anxiety disorders, Obsessive-compulsive disorder (OCD) sufferers are likely to have the greatest number of patient hospitalized [1]. Lifetime prevalence of OCD is estimated from 1.6% to 2.3% [2], [35], and the 1-year prevalence of the disorder is estimated to be 1% [4], [5]. According to the cognitive point of view, there are maladaptive cognitive schemas and faulty appraisals are important processes in the etiology and persistence of obsessions and compulsions considered [6]. Researchers [7] found that people with anxiety disorders compared to non-anxious significantly lower quality of life experience, and impaired quality of life for all anxiety disorders have been reported almost identical. Moreover, OCD is located at the top of these disorders. There is clear evidence of personal beliefs or schemas about threats and vulnerabilities as predisposing factors for anxiety disorders support. There is emerging evidence that enduring beliefs or schemas about threat and personal vulnerability are predisposing factors to anxiety disorders. Although research on the cognitive model of anxiety vulnerability is still in the preliminary stages, significant progress in recent years in establishing the causal abstinent for fear in anxiety have been achieved [8].

For Young, early maladaptive schemas (EMS) are, stable, broad, pervasive themes regarding oneself and one‘s relationship with others, developed during childhood, and elaborated throughout one‘s lifetime, and dysfunctional to a significant degree [9]. Maladaptive schemas result in the production of negative feelings, such as depression and anxiety [10]. When schemas are latent, they have no role in information processing. When activated, they channel cognitive processing from the first to the last stages [11]. Schemas are not always positive and adaptive: They may also be negative and maladaptive [9].

Young have identified 18 different EMSs to date, each with its own proposed origin and long-term impact. The18 EMSs are grouped into five umbrella categories known as schema domains, bringing together the EMSs that tend to develop together. Every domain represents one important part of the core needs of the child. Childhood neglect, adversities, maltreatment and abuse produce, for example, EMSs like Abandonment/ Instability (AB), Mistrust/ Abuse (MA) or Emotional Deprivation (ED), which belong to the Disconnection and Rejection schema domain according to the SFT [9].

A study in 2017 [12] With regard to the relationship between early maladaptive schemas and clinical symptoms concluded that maladaptive schemas play important role in the formation of psychopathology in individuals. In a study in 2001 [13] as Vulnerability Schemas in Obsessive-Compulsive Disorder elaborates on the construct of dysfunctional vulnerability schemas in Obsessive-Compulsive Disorder (OCD). A study in 2016 [14] showed that dominant and specific early maladaptive schemas of OCD are Defectiveness / Shame, Mistrust / Abuse, and Emotional Deprivation Schemas. This study besides supporting the theory of early maladaptive schemas, suggests that interventions based on specific schemas can be useful methods in treatment of OCD. In study [15] as Relationship between early maladaptive schemas and symptom dimensions in patients with obsessive-compulsive disorder on a sample of fifty-seven patients with OCD and 70 normal controls completed the Young Schema Questionnaire, the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), the Y-BOCS symptom checklist, and the Beck Depression Inventory. Patients with OCD had significantly higher scores for schema related to defectiveness/shame, social isolation/alienation, and failure than did normal controls. A study in 2015 [16] showed that perfectionism and certainty obsessive beliefs and maladaptive schemas related to dependency and incompetence significantly mediated (improved) treatment response.

According to the rates of OCD are fairly consistent, with a lifetime prevalence in the general population estimated at 2 to 3 percent, Some researchers have

estimated that the disorder is found in as many as 10 percent of outpatients in psychiatric clinics. These figures make OCD the fourth most common psychiatric diagnosis after phobias, substance-related disorders, and major depressive disorder [17]. According to the relation between some special schemas and advent of psychological symptoms, studying these cognitive structures in people suffering from anxiety disorders would greatly help clarifying the role of EMSs in development of these disorders and consequently in treatment of patients. The aim of this study was to predict the symptoms of OCD have been through the early maladaptive schemas.

II. Methods

A. Ethical Considerations

Informed consent forms to participate in the study was completed by all participants in writing and participants were assured that their information will be completely confidential.

B. Participants

Participants in this study have been chosen from patients who referred to psychological counseling centers in Kermanshah. Conditions of entry into the study were (1) Having obsessive-compulsive disorder is diagnosed by a psychiatrist or clinical psychologist based on DSM-IV criteria; (2) Not having other mental disorders and; (3) At least Middle school diploma education. Exclusion criteria from the study were (1) Low education; (2) Having combined disorders; and (3) It does not specify the type of mental disorder or not having mental health measures. The study sample was referred to psychological or psychiatric clinics in Kermanshah, who had obsessive-compulsive disorder. The total study population of 140 patients who received the diagnosis of OCD. The total sample size was 52 patients with obsessive-compulsive disorder, from September 2016 to the end of February 2017 were visited in health centers. From this sample, 48.1% were female, and 51.9% male.

C. Questionnaires and Interviews

Structured Clinical Interview for DSM-IV Axis I (SCID-I) [18]

Structured Clinical Interview for DSM-IV Axis I (SCID-I) SCID and its versions were considered to be the most comprehensive and structured diagnostic interviews which were available. In fact, they were new and wide range utility instruments, in 1987 by Spitzer, Gibbon, Williams and built in compliance with the criteria of the DSM-IV [19]. Due to high accuracy of the diagnostic criteria and extraordinary compliance with DSM-IV, the codification was translated to and adapted with different languages. The Persian translation of the SCID-I (the clinician version: SCID-CV) was utilized in this study. The Persian version has been normalized and its assessment has shown that diagnostic agreements between test and retest SCID administration are fair to good for most diagnostic categories. Overall weighted kappa was 0.55 for lifetime diagnoses. Specificity values for most psychiatric disorders were high (over 0.85) and the sensitivity values were somewhat lower[20].

Yale-Brown Obsessive Compulsive Scale (Y-BOCS) [21]

A semi-structured clinical interview to assess the severity of obsessive and compulsive, regardless of the number and content of obsessions and current compulsion. Yale-Brown Obsessive Compulsive Scale has two parts: a symptom checklist (SC) and the symptom severity (SS) scale. 16 items of SC is on a five-point Likert scale and self-report answered. SS obsession and compulsion in any of the five dimensions of the disturbance frequency, interference, resistance and control of symptoms are estimated. Y-BOCS gives three scores: Obsessions, compulsions intensity and a total score that includes all the items [21]. Today Y-BOCS tool for screening of patients with OCD and has been used in many studies. Inter-rater reliability and test-retest YBOCS to assess the symptoms of OCD, but not in other disorders and depression have been reported suitable [22], [23]. Y-BOCS was translated into 13 languages, and the reliability and validity of this scale in the research [24-33] and many cultures [34], [35], [22], [36], [37] have been studied. In Iran only 3 study [38]-[40] content validity (Y-BOCS) and the reliability of this scale are studied.

Early Maladaptive Schemas Scale: Young Schema Questionnaire- Short Form (YSQ-SF) [9]

The schema questionnaire-short form (SQ-SF) assesses 15 EMSs. The scales consist of five items with the highest loadings on the 15 factors that are emerged in a factor analysis of the long-form of the SQ [9]. EMSs are grouped in five broad domains: disconnection and rejection (abandonment, mistrust, emotional deprivation, defectiveness, social isolation), impaired autonomy and performance (dependence, vulnerability, enmeshment, failure), impaired limits (entitlement, insufficient self-control), other directedness (subjugation, self-sacrifice, approval seeking), and over vigilance and inhibition (negativity, emotional inhibition, unrelenting standards, punitiveness). Respondents are asked to rate statements on a six point Likert scale from “completely untrue of me” to “describe me perfectly”. In Iran [41], in descriptive cross-sectional study 37 postgraduate male students of Shahed and Shahid Beheshti universities in Tehran who were selected using stratified random method completed the Young Schema Questionnaire-Short Form (YSQ-SF). These 15 subscales demonstrated good internal consistency. Higher-order principal component analysis yielded three higher order factors in line with previous findings. These results are consistent with previous results based on the English, French and Dutch versions of the YSQ-SF and provided support for the cross-cultural validity of the YSQ-SF. Another study in Iran [42] the validity of the scale was confirmed, coefficient alpha for this scale ($\alpha = 0.94$) has reported and the coefficients for the subscales between 0.60 - 0.90. In addition, the discriminant validity and convergent validity of the YSQ-SF with dysfunctional attitudes scale are shown.

D. Procedures

Non-hospitalized obsessive-compulsive disorder patients after diagnosis via structured clinical interview, completed research questionnaires. In the study, the age range of participants was 20 to 40 years (and the mean age 25.34 years, and their median age 28 years). Then, structured clinical interview for DSM IV axis 1 disorders (SCID-I),

Then Yale-Brown Obsessive Compulsive Scale (Y-BOCS) and Young Schema Questionnaire- Short Form (YSQ-SF) questionnaires completed by patients. This is a descriptive and correlation research method. Research variables through the standardized questionnaires and structured clinical interview were measured, and the correlations between variables were analyzed by correlation coefficients.

III. Results

E. Statistical Analysis

Statistical analysis was performed using the SPSS 24. In order to analysis the data, we used descriptive (mean and standard deviation) and inferential statistic (correlation and stepwise regression analysis).

Table 1: Table of descriptive statistics for Early maladaptive schemas

EMSs	Descriptive Statistics	
	Mean	Std. Deviation
Emotional Deprivation	13.77	7.62
Abandonment	15.53	6.90
Mistrust/Abuse	13.47	7.63
Social Isolation	11.17	7.03
Defectiveness / shame	9.00	5.24
Failure to achieve	10.92	6.35
Dependence	19.06	6.00
Vulnerability to harm	11.53	6.80
Subjugation	12.66	5.91
Self-sacrifice	10.85	6.49
Emotional inhibition	19.82	5.70
Enmeshment	13.71	6.60
Unrelenting standards	19.59	5.57
Entitlement / grandiosity	15.35	6.81
Insufficient self-control	13.20	5.87
Whole schemes	201.13	68.71

At first, Kolmograph-Smirnov test performed that showed our data had normal distribution. Next, Pearson correlation was assessed to examine the relationship between variables of the study. After that, a stepwise regression analysis was performed in order to determine the proportion of each schema in explaining the variance of symptoms of OCD ($p<0.001$). Cronbach's alpha reliability of the total scale method ($\alpha = 0.87$) was obtained, and the coefficient for the questionnaire was adequate and appropriate. The lowest alpha was for insufficient self-control subscale ($\alpha = 0.74$), and the highest alpha belonged to subscales of failure ($\alpha = 0.92$). All reliability coefficients were acceptable, and reliability coefficient for the total scale was sufficient.

The variables were tested for normality of distribution, and outliers were removed from the analysis. Descriptive statistics such as mean and standard deviation is calculated and shown in Table 1.

The results of the analysis of the correlation matrix showed that between all of early maladaptive schemas and symptoms of OCD there is a significant correlation. The matrix of correlations between symptoms of OCD and early maladaptive schemas are listed in Table 2.

As can be seen in Table 2, almost all maladaptive schemas with symptoms of obsessive-compulsive disorder had a significant positive correlation. The highest correlation of maladaptive schema defectiveness / shame ($r=0.655$, $sig=0.001$) and had the lowest correlation of the scheme has been self-sacrifice ($r=0.116$, $sig=0.05$).

Table 2: Correlations between early maladaptive schemas and OCD symptoms

Early Maladaptive Schemas	Pearson Correlation	R2
Emotional Deprivation	0.441**	0.194
Abandonment	0.269**	0.072
Mistrust / Abuse	0.494**	0.244
Social Isolation	0.541**	0.292
Defectiveness / Shame	0.655**	0.429
Failure	0.621**	0.386
Dependence	0.380**	0.144
Vulnerability	0.512**	0.262
Enmeshment	0.128*	0.016
Subjugation	0.541**	0.292
Self-Sacrifice	0.116*	0.013
Emotional Inhibition	0.527**	0.278
Unrelenting Standards	0.147*	0.069
Entitlement/Grandiosity	0.229**	0.052
Insufficient Self-Control	0.437**	0.190
Total Score of Schemas	0.623**	0.388

Multivariate regression analysis on early maladaptive schemas as predictor variables and the dependent variable symptoms of OCD as a step-by-step procedure by SPSS was performed. Multivariate regression analysis is summarized in Table 3.

Table 3: Stepwise regression analysis to predict OCD symptoms by early maladaptive schemas

Model Summary		
Predictors	R	R^2
FA, EI, US, AB, IS, VH	0.707	0.500

Predictors: FA: Failure, EI: Emotional Inhibition, US: Unrelenting Standards, AB: Abandonment, IS: Insufficient Self-control, VH: Vulnerability to Harm and Illness.

IV. Discussion

In general, the importance of the cognitive factors in obsessive-compulsive disorder has also been empirically supported [43]-[46]. Obsessive-compulsive disorder consists of clinically heterogeneous symptoms and practical validity of distinct nosological clusters, the concept of which has been examined in many studies [47], [48]. Nevertheless, from an etiological perspective, possible relations or discriminations among symptoms concerning the individual differences such as personality, cognitive schemas or beliefs, attachment styles that possibly influence symptom severity and type, have received little attention [49].

In a study as early Maladaptive Schemas in Obsessive-Compulsive Disorder and Anxiety Disorders [14] by EMSs of Defectiveness/Shame and Vulnerability to harm and Illness schemas predict 38 percent of variance of obsessive-compulsive symptoms, Defectiveness/Shame schema having the greater share (29 percent). Since this schema is one of the three specific schemas of OCD (Defectiveness/Shame, Emotional Deprivation, and Mistrust/Abuse), it is expected to be partially anticipant of symptoms of the disorder. It seems that due to the high correlation of Defectiveness/Shame schema with Emotional Deprivation and Mistrust/Abuse schemas, these two schemas did not enter the regression equation and Vulnerability to Harm and Illness schema is the second anticipant factor of obsessive-compulsive symptoms. However, in current study Correlation and regression analysis showed that the most of early maladaptive schemas and symptoms of obsessive-compulsive disorder and Can be defeated through 6 maladaptive schema, Failure, Emotional Inhibition, Unrelenting Standards, Abandonment, Insufficient Self-control, and Vulnerability to Harm and Illness 50% of the variance the symptoms of OCD explained.

This study, with most studies such as [50]-[52], [15], [53], [54], [16], [55]-[57] is consistent. In a study in South Korea [15] Patients with OCD had significantly higher scores for schema related to defectiveness/shame, social isolation/alienation, and failure than did normal controls. Any EMSs in patients with OCD were not related to clinical variables such as severity of OCD and duration of illness. These findings may constitute evidence to improve understandings of OCD from a perspective of schema theory. Cognitive theory states that maladaptive schemas may be responsible for certain perceptions of reality and for confirming negative beliefs, which, in turn, can lead to depression and anxiety [58]. Much of the research surrounding specific cognitions and psychopathology has centered on individual disorders that do not encompass the full spectrum of pathology that has become common to clinicians. The present investigation may also provide relevant implications for clinicians who identify maladaptive schemas as a component of schema-focused cognitive therapy.

V. Conclusions

More research is needed to further evaluate whether the Schema Questionnaires measure what they are intending to measure, namely underlying cognitive structures built early in the development through an interaction between temperament and repeated adverse relationship experiences and serving as templates for processing later experiences [59]. In this regard, the development and course of maladaptive schemas and their relationships with psychopathology in childhood and adolescence need more research.

Several study limitations warrant consideration. First, the assessment of all examined constructs relied solely upon self-report. Shared method variance might have inflated the correlations between the measures. In addition, pathoplastic effects of psychopathology on self-image may have influenced the completion of the inventories [60]. Second limitation of the present study was use of the short version of the Young schema questionnaire, the Young schema questionnaire-short is only able to measure 15 factors or schemas, but the long version of the questionnaire Yang can measure all 18 early maladaptive schemas.

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