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Relationship between early maladaptive schemas and symptom dimensions in patients with obsessive-compulsive disorder

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ABSTRACT

The aims of this study were to evaluate early maladaptive schemas (EMSs) of patients with obsessive-compulsive disorder (OCD) and to clarify relationships between particular EMSs and the five factor-analyzed symptom dimensions and other clinical variables. 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. Among the five OCD symptom dimensions, the sexual/religious dimension was only significantly correlated with two schemas of *vulnerability to harm or illness* and *enmeshment/undeveloped self*. These two schemas were significant predictors of the sexual/religious dimension, accounting for 33% of the total variance in this dimension. 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 our understandings of OCD from a perspective of schema theory.

1. Introduction

Obsessive-compulsive disorder (OCD) is a chronic and severely disabling anxiety disorder with a fluctuating course and characterized by persistent and unwanted thoughts and ritualistic behavior. OCD was once thought of as relatively treatment resistant (Greist and Jefferson, 2007). However, with a recent acceleration of progress, effective treatments including medication and behavior therapy have emerged. Expert consensus and practice guidelines state that effective first-line treatments for OCD include behavior therapy including exposure and response prevention (ERP) and pharmacological therapy (American Psychiatric Association, 2007). Notably, the available data suggest that ERP is at least as effective as medication, and may be superior with respect to risks, costs, and enduring benefits (Foa et al., 2005; Nakatani et al., 2005). However, research indicates that approximately 50% of patients do not respond satisfactorily (Stanley and Turner, 1995; Baer and Minichiello, 1998). In many OCD cases symptoms persist as standard treatment does not lead to full remission (Pigott and Seay, 1997; Ackerman and Greenland, 2002; Steketee and Pigott, 2006).

Poor response is predicted by early childhood trauma and emotional deprivation (Saunders et al., 1992; Lochner et al., 2002), early onset (AuBuchon and Malatesta, 1994; Abramowitz, 2006), longer illness duration and greater severity (Goodwin et al., 1969), and comorbid personality disorder (Jenike et al., 1986; Baer et al., 1992). In this context, Sookman et al. (1994) already proposed integrative cognitive therapy for OCD that incorporates the notion of schemas, developmental theory, attachment experiences, structural dimension, and emotional as well as interpersonal foci.

Young has extended and modified traditional cognitive therapy to develop schema therapy (Young and Klosko, 1994). Schema therapy is an integrative, unifying theory and approach designed to treat a variety of severe, long-standing psychological problems such as Axis II disorders. The most basic concept in the schema approach is the early maladaptive schema (EMS). Young defines an EMS as a "broad, pervasive theme regarding oneself and one's relationship with others, developed during childhood and elaborated upon throughout one's lifetime, and dysfunctional to a significant degree." Young et al. (2003) discuss each EMS's impact on the therapeutic process and propose a recommended treatment approach for each EMS. In their review of preliminary research, Hawke and Provencher (2011) suggested that given the chronicity and the developmental risk factors, schema therapy may be successfully extended beyond the personality disorder to benefit anxiety disorders patients. In effect, several preliminary studies reported treatment-resistant OCD cases which showed potential

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effectiveness of schema-focused therapy, considering schema therapy as a more promising approach for severe OCD cases with weak response to regular CBT, especially patients with chronic OCD, trauma history, and comorbid personality disorder (Sookman et al., 1994; Sookman and Pinard, 1999; Gross et al., 2012).

On the other hand, a few studies have been conducted on the EMSs of patients with OCD to understand this disorder from a perspective of schema theory. Atalay et al. (2008) reported that patients with OCD were more likely than healthy participants to activate EMSs, especially those in the schemas of *social isolation/alienation*, *vulnerability to harm or illness*, and *negativity/pessimism*. Another study compared EMSs in OCD with those in trichotillomania (TTM) (Lochner et al., 2005). OCD participants scored significantly higher than the TTM group in the schemas of *mistrust/abuse*, *social isolation/alienation*, *defectiveness/shame*, *subjugation*, and *emotional inhibition*. Unfortunately, it was not possible to identify the EMSs that were elevated in both disorders because no healthy control group was included.

Although previous reports are valuable, these two studies used simple comparisons without controlling for confounding factors such as depression. More importantly, it remains unclear whether the schemas activated in these studies were specific to OCD or whether their activation resulted from non-specific factors such as comorbidity, disability, or functional impairment due to living with a chronic illness. For example, non-psychiatric, chronic pain patients scored higher on *dependence/incompetence*, *vulnerability to harm or illness*, and *negativity/pessimism* schemas than did controls (Saariaho et al., 2009). In fact, Lochner et al. (2005) also emphasized the need for further studies assessing the relationship between schema and duration of illness.

In reality, OCD is a clinically heterogeneous disorder with symptoms that can be summarized in terms of a few dimensions: symmetry/ordering, hoarding, contamination/cleaning, aggression/checking, and sexual/religious (Baer 1994; Mataix-Cols et al., 2005). Each symptom dimension has been associated with patterns of genetic transmission, neuroimaging data, comorbid disorders, and treatment responses (Alonso et al., 2001; Leckman et al., 2003; Mataix-Cols et al., 2005). Thus, analysis of OCD symptom dimensions in terms of EMSs may reveal OCD-specific schemas and contribute information on the differential EMS-related characteristics of each OCD symptom domain.

The aims of this study were (1) to evaluate differences between the EMSs of OCD patients and those of normal controls using the Young Schema Questionnaire-short form, (2) to examine relationships between EMSs and OCD symptom dimensions, and (3) to determine whether EMSs are related to clinical variables such as severity of OCD, age at onset, and duration of illness.

2. Methods

2.1. Subjects

Seventy-four patients aged between 18 and 65 years at the OCD clinic at Kyungpook National University Hospital, Daegu, South Korea, who fulfilled Diagnostic and Statistical Manual of Mental Disorders, Fourth edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) criteria for OCD were enrolled from January 2009 to March 2012. Subjects were excluded if they suffered from a current comorbid Axis I diagnosis, psychotic symptoms, mental retardation, neurological disease, or a history of head injury or medical illness with documented cognitive sequelae. Further, to ascertain OCD and other comorbid diagnoses, the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, patient version (SCID-I/P) was carried out (First et al., 2002a). This interview was completed by an experienced psychiatrist (S.J.L). Of the 74 patients, 17 were ruled out in accordance with the exclusion criteria and/or the poor quality of self-reports. Overall, data for 57 patients (38 males and 19 females) were finally collected and analyzed. Written informed consent was obtained from each subject after a complete description of the study, which was approved by the Institutional Review Board of Kyungpook National University Hospital.

Seventy healthy comparison subjects (49 males and 21 females), who were all first-year graduate students in 2009, were recruited from the graduate school at Kyungpook National University. They had no previous or current history of psychiatric or neurological diagnoses as determined in a brief interview based on the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, non-patient version (SCID-I/NP) (First et al., 2002b).The data were adapted from the annual mental health assessment of graduate school students with permission from the ethics committee of Kyungpook National University.

2.2. Clinical measures

2.2.1. Yale–Brown Obsessive Compulsive Symptom Scale

The Yale–Brown Obsessive Compulsive Scale (Y–BOCS) is a 10-item instrument developed by Goodman et al. (1989) to evaluate symptom severity and treatment response in OCD patients. This scale is a reliable semi-structured interview, which is typically administered after identifying the content of particular obsessions and compulsions using the Y–BOCS Symptom Checklist. The scale is divided into subscales for obsessions and compulsions. Each of five aspects of obsessive and compulsive pathology is rated on a scale ranging from 0 (no symptoms) to 4 (extreme symptoms): time spent, degree of interference, distress, resistance (greater resistance is assigned lower scores), and perceived control over symptoms. Subscale scores are summed to yield total scores on the Y–BOCS.

2.2.2. Yale–Brown Obsessive Compulsive Symptom Checklist

The Y–BOCS checklist is a 58-item instrument designed to evaluate the presence (yes/no) of current and past symptoms. Factor-analyzed dimensional scores for obsessive-compulsive (OC) symptoms were measured using the Y–BOCS checklist, which includes the 58 items organized into eight categories of obsessions and seven categories of compulsions. When a patient identified at least one of the specific symptoms under one of these dimensions as a principal or major problem, that dimension was given a score of 2. When a patient reported the current or past presence of a given symptoms but did not consider it to be a major problem, that dimension was given a score of 1. When a patient reported the absence of symptoms, that dimension was given a score of 0. We classified OC symptoms into five factor-analyzed symptom dimensions according to a previous study conducted by Mataix-Cols et al. (1999). Scores on the five symptom dimensions were calculated by summing the scores for the symptom categories under each dimension. The five symptom dimensions were symmetry/ordering, hoarding, contamination/cleaning, aggression/checking, and sexual/religious.

2.2.3. Young Schema Questionnaire

EMSs were assessed with the short form of the Young Schema Questionnaire, version 3 (YSQ-S3), which contains 90 items and assesses 18 EMSs (Young et al., 2003). Each item is rated on a six-point Likert scale. Higher scores are indicative of a more dysfunctional belief. The 18 subscales are grouped into five broad categories referred to as schema domains: disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and overvigilance and inhibition. The Korean version of this instrument with 13 factors has good psychometric properties and internal reliability (α=0.94) (Baranoff et al., 2006). According to factor structure and loadings yield in psychometric study of this Korean version, we calculate and report the results of 13 schema subscales (*abandonment/instability, mistrust/abuse, emotional deprivation, defectiveness/shame, social isolation/alienation, vulnerability to harm or illness, enmeshment/undeveloped self, failure, entitlement/grandiosity, insufficient self-control/self-discipline, self-sacrifice, emotional inhibition, and unrelenting standards/hypercriticalness*) in this study.

2.2.4. Beck Depression Inventory

Current levels of depression were measured with the Korean version of the Beck Depression Inventory (BDI) (Lee and Song, 1991). The BDI is a 21-item scale that targets cognitive, behavioral, affective, and somatic components of depression. The measure was initially designed to be administered by clinicians, but it is now used primarily as a self-report measure. Each of the 21 items requires respondents to select which one of four statements most accurately reflects symptom intensity during the past week (Beck et al., 1961).

2.3. Statistical analysis

The sociodemographic characteristics of OCD patients and healthy subjects were compared using *chi*-square and *t*-tests. Analysis of variance (ANOVA) and analysis of covariance (ANCOVA) with education and depression scores as covariates were used to compare mean differences in schema scores on the YSQ-S3 between patients with OCD and healthy subjects.

Partial correlation analysis was performed to assess the relationship between EMSs and the five factor-analyzed symptom dimensions in patients with OCD, adjusting for the severity of OCD and depressive symptoms. Multiple linear regression analysis (stepwise method) was also performed to assess whether EMSs