# A comparative study of early maladaptive schemas in obsessive–compulsive disorder and panic disorder

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## ARTICLE INFO

## ABSTRACT

Schema theory and therapy may be an additional therapeutic approach to identify and treat chronic psychological problems, namely early maladaptive schemas (EMSs), in patients with obsessive–compulsive disorder (OCD) and panic disorder (PAD). In the current study, we investigated the characteristics in EMSs between patients with OCD and PAD. Fifty-one patients with OCD, 46 patients with PAD, and 70 normal controls participated in this study. EMSs and depressive symptoms were measured using the Young Schema Questionnaire and the Beck Depression Inventory (BDI), respectively. Analysis of covariance was conducted with age, sex, BDI score, and education level as covariates to assess group differences. Direct comparisons among the three groups revealed that the *defectiveness/shame* and *social isolation/alienation* schemas were prominently activated in patients with OCD, whereas the *vulnerability to harm or illness* and *self-sacrifice* were activated in patients with PAD. In subgroup analysis, these differences were observed between subgroups with lower BDI scores, but not between the patient subgroups with higher BDI scores. However, the differences between the patient groups in the *defectiveness/ shame* and *vulnerability to harm or illness* schemas almost reached significance. Patients with OCD and PAD differed in particular EMS characteristics, which could have potential therapeutic implications.

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## 1. Introduction

Panic disorder (PAD) and obsessive–compulsive disorder (OCD) are two prototypical anxiety disorders although OCD is officially no longer called an anxiety disorder due to its recent re-classification into a new category, called the obsessive–compulsive-related disorders (American Psychiatric Association, 2013). PAD is characterized by sudden unexpected physical symptoms and catastrophic misinterpretations of those symptoms, as seen in panic or anxiety attacks, and OCD is characterized by persistent and intrusive anxiety-producing thoughts and repetitive rituals or behaviors to control these unwanted thoughts.

Although cognitive-behavioral therapy (CBT) has been shown to be the most effective, or at least as effective as pharmacological treatment for these two disorders (Barlow et al., 2000; Foa et al., 2005), some patients do not respond satisfactorily and continue to show symptoms or experience relapse after initial improvement. In fact, 23% of patients with PAD, who received CBT and became panic free, relapsed at some time during a median 8-year follow-

up (Fava et al., 2001). Approximately half of patients with OCD do not respond satisfactorily (Baer and Minichiello, 1998) and OC symptoms persist as standard treatment does not lead to full remission (Steketee and Pigott, 2006). Among many factors related to poor outcomes, personality disorders or characteristics seem to have a negative impact on CBT outcomes in patients with these disorders (Baer et al., 1992; Mennin and Heimberg, 2000).

Thus, a different approach is required for such patients, particularly for chronic cases. Young developed schema theory for patients with severe, chronic psychological problems who failed to make significant gains in traditional cognitive therapy. Central to the schema model are early maladaptive schemas (EMSs), defined as broad and pervasive character traits that develop during childhood in reaction to early toxic experiences (Young and Klosko, 1994; Young et al., 2003). One characteristic of the flexible application of schema therapy to diverse disorders is the principle that each EMS has its own impact on the therapeutic process; hence, a recommended treatment approach for each EMS has been proposed.

A review of preliminary research on EMSs suggested that schema therapy can be successfully extended beyond treatment of personality disorder to benefit those with an anxiety disorder

(Hawke and Provencher, 2011). However, it has not been determined whether anxiety disorders are related to EMSs in general or to specific EMSs. Based on the finding that anxiety symptoms are correlated with almost all EMSs, early studies suggested that patients with anxiety disorders tended to show non-specific, generalized increases in a variety of EMS scores (Stopa et al., 2001; Welburn et al., 2002). However, these early studies were limited in their ability to characterize potential disorder-specific schemas because the subjects were mostly healthy participants, and no specific diagnostic groups were included.

A handful of studies have examined EMSs in patients with PAD or OCD, aiming to understand these disorders from the perspective of schema theory. Hedley et al. (2001) investigated the relationships between two specific EMSs (*vulnerability to harm or illness* and *dependence/incompetence*) and beliefs about loss of control, fear of bodily sensations, and avoidance in patients undergoing group CBT for PAD with agoraphobia. They demonstrated that the *vulnerability to harm or illness* predicted fear of bodily sensations, fear of losing control, and avoidance behaviors. In the same context, the *vulnerability to harm or illness* explained 48.5% of the variance in the severity of agoraphobia experienced by female patients with eating disorders (Hinrichsen et al., 2004). A study of 36 patients with PAD undergoing 10 weekly sessions of group CBT compared pre- and post-treatment symptoms and EMSs and concluded that group CBT modified symptoms but had no immediate effect on EMSs (Rusinek et al., 2004).

Atalay et al. (2008) reported that patients with OCD were more likely to demonstrate EMSs than were healthy participants particularly schemas for *social isolation/alienation*, *vulnerability to harm or illness*, and *negativity/pessimism*. Another study compared EMSs in patients with OCD and with trichotillomania (TTM) (Lochner et al., 2005). The patients with OCD scored significantly higher that the IIM group on schemas for *isolation/alienation*, *defectiveness/shame*, *subjugation*, and *emotional inhibition*. Our recent study demonstrated that patients with OCD had significantly higher scores for the *defectiveness/shame*, *social isolation/alienation*, and *failure* schemas than did normal controls (Kim et al., 2014). Among the five OCD symptom dimensions examined, the sexual/religious dimension was the only significantly correlated with the *vulnerability to harm or illness* and *enmeshment/undeveloped self*.

However, a simple comparison of normal controls with patient groups cannot determine whether an activated EMS is a common characteristic of patients with an anxiety disorder or is specific to a given anxiety disorder. Moreover, comparing OCD and PAD may produce varied and dimensional information on personality characteristics and clues to additional therapeutic approaches from a schema theory perspective. Therefore, in the current study, we investigated the commonalities and differences in schemas between patients with OCD and those with PAD. Based on previous research, we hypothesized that the *vulnerability to harm or illness* would be more activated in patients with PAD, whereas the *social isolation/alienation* and *defectiveness/shame* schemas would be more pronounced in patients with OCD.

## 2. Methods

### 2.1. Subjects

Patients 18–65 years of age at the outpatient clinic of 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 either OCD or PAD were consecutively enrolled from 2009 to 2013. Patients with comorbid depressive disorders were included due to the high comorbidity of depression with PAD and OCD. Subjects were excluded if they suffered from a comorbid axis I diagnosis other than depressive disorders or if they had psychotic symptoms, suicidality, mental retardation, significant medical illness, or a history of head injury or medical illness with

documented cognitive sequelae. The Structured Clinical Interview for DSM-IV-TR Axis I Disorders, patient version (SCID-I/P) was administered to diagnose OCD, PAD, and other comorbid conditions (First et al., 2002a). This interview was conducted by an experienced psychiatrist (S.J.L.). Written informed consent was obtained from each subject after a complete description of the study was provided. Of the 84 patients with OCD who completed assessment for this study, 33 were ruled out in accordance with the exclusion criteria ($N=18$ with comorbidities; $N=11$ with younger age) and the poor quality of self-reports ($N=4$). Of the 61 patients with PAD, 15 were ruled out; 9 with comorbidities; 6 with incomplete data. Overall, data from 51 patients with OCD (35 males and 16 females) and 46 patients with PAD (14 males and 32 females) were finally analyzed. This study was approved by the Institutional Review Board of Kyungpook National University Hospital.

Seventy healthy control subjects (49 males and 21 females), all of whom were 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 conditions as determined in a brief interview based on the SCID-I/NP (First et al., 2002b). Data for this assessment were obtained from the records of 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. Young schema questionnaire, short-form, version 3 (YSQ-S3)

EMSs were assessed using YSQ-S3, which contains 90 items and assesses 18 EMSs (Young et al., 2003). Each item is rated on a 6-point Likert scale. Higher scores indicate a more dysfunctional belief. The 18 subscales are grouped into five broad categories, referred to as schema domains: the disconnection and rejection domain; the impaired performance and autonomy domain; the impaired limits domain; the other-directedness domain; and the overvigilance and inhibition domain (see Table 2 for the list of individual schemas).

The Korean version of this instrument has acceptable internal consistency for each schema, with Cronbach's alpha values of 0.90–0.59 and good test–retest reliability. The confirmatory factor analysis for the 18-factor structure originally proposed by Young et al. (2003) showed that most goodness-of-fit statistics indicated a satisfactory fit (Lee et al., 2015).

#### 2.2.2. 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).

#### 2.2.3. Other anxiety measures

The Beck Anxiety Inventory (BAI), a 21-question self-report scale, was used for measuring the severity of individual's anxiety (Beck et al., 1988). The Yale–Brown Obsessive Compulsive Scale (Y–BOCS) was used to evaluate symptom severity and treatment response in OCD patients (Goodman et al., 1989). For patients with PAD, the Agoraphobic Cognition Questionnaire (ACQ) and the Body Sensation Questionnaire (BSQ) were used to assess maladaptive cognitions concerning the

**Table 1**
Sociodemographic and clinical characteristics of participants (mean ± SD).

| Characteristics | OCD | PAD | NC | Statistics | | |
|---|---|---|---|---|---|---|
| | ($N=51$) | ($N=46$) | ($N=70$) | F or $\chi^2$ | df | p |
| Age, years | 28.0 ± 8.9 | 37.7 ± 9.7 | 25.5 ± 2.3 | 41.3 | 2.164 | 0.30 |
| Male/female | 35/16 | 14/32 | 49/21 | 20.9 | 2 | < 0.001 |
| Education, years | 14.3 ± 2.9 | 14.1 ± 2.5 | 15.8 ± 0.6 | 11.1 | 2.164 | < 0.001 |
| Age at onset of illness, years | 19.3 ± 6.9 | 33.6 ± 10.2 | – | 67.8 | 1.95 | < 0.001 |
| Duration of illness, years | 8.6 ± 6.5 | 4.1 ± 4.4 | – | 15.8 | 1.95 | < 0.001 |
| BDI | 22.9 ± 11.0 | 14.7 ± 8.7 | 6.0 ± 4.7 | 63.3 | 2.164 | < 0.001 |
| BAI | 22.0 ± 13.2 | 19.8 ± 14.6 | – | 0.6 | 1.95 | 0.43 |
| Y–BOCS, total | 23.5 ± 6.5 | – | – | | | |
| ACQ | – | 13.7 ± 9.1 | – | | | |
| BSQ | – | 23.8 ± 15.4 | – | | | |

BDI, Beck Depression Inventory; BAI, Beck Anxiety Inventory; Y–BOCS, Yale–Brown Obsessive Compulsive Scale; ACQ, Agoraphobic Cognition Questionnaire; BSQ, Body Sensation Questionnaire
OCD, obsessive–compulsive disorder; PAD, panic disorder; NC, normal controls.