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Mechanisms of change in cognitive therapy for obsessive compulsive disorder: Role of maladaptive beliefs and schemas

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ABSTRACT

The present study aimed to identify mechanisms of change in individuals with moderately severe obsessive-compulsive disorder (OCD) receiving cognitive therapy (CT). Thirty-six adults with OCD received CT over 24 weeks. At weeks 0, 4/6, 12, 16/18, and 24, independent evaluators assessed OCD severity, along with obsessive beliefs and maladaptive schemas. To examine mechanisms of change, we utilized a time-varying lagged regression model with a random intercept and slope. Results indicated that perfectionism and certainty obsessive beliefs and maladaptive schemas related to dependency and incompetence significantly mediated (improved) treatment response. In conclusion, cognitive changes in perfectionism/certainty beliefs and maladaptive schemas related to dependency/incompetence precede behavioral symptom reduction for OCD patients. Targeting these mechanisms in future OCD treatment trials will emphasize the most relevant processes and facilitate maximum improvement.

Exposure with response prevention (ERP) has consistently been demonstrated to be an efficacious psychosocial treatment for Obsessive Compulsive Disorder (OCD; Franklin Abramowitz, Kozak, Levitt, & Foa, 2000). However, approximately 25% of patients refuse to engage in ERP (Franklin & Foa, 1998) and of those who enter treatment, nearly 20% of patients do not respond and another 20% relapse following the intervention (Riggs & Foa, 1993). To meet the needs of these patients, a flexible, modularized cognitive therapy (CT) based upon the cognitive model of OCD (Rachman, 1997) was developed (Wilhelm & Steketee, 2006). This treatment involves limited exposure, which likely contributes to its greater acceptability to patients and lower drop-out rates (e.g., 10–15%; Wilhelm et al., 2005).

In the CT framework, unwanted intrusive thoughts (e.g., harming a loved one) are considered normal and common occurrences. However, the misinterpretation of innocuous intrusions as overly significant leads to increased anxiety and an urge to engage in compulsions to reduce emotional arousal. CT targets the belief systems (e.g., inflated responsibility) and misinterpretations that contribute to the maintenance of OCD. Throughout treatment, patients are educated about their most relevant belief domains and taught to modify maladaptive thinking patterns. Additionally, patients are asked to engage in brief behavioral experiments that test the validity of their obsessive beliefs; however, no systematic prolonged exposures are conducted (Wilhelm & Steketee, 2006). Wilhelm and Steketee's 24-week CT for OCD significantly reduced obsessive beliefs as well as OCD and depression severity in an open trial (Wilhelm et al., 2005), and when compared to a waitlist control group (Wilhelm et al., 2009).

Although Wilhelm and Steketee's (2005; 2009) trials demonstrated that CT yields a short- and long-term effect on obsessive beliefs and OCD severity, the processes that led to symptomatic reduction are unknown. Investigating the mechanisms of change can highlight *why* the treatment worked and inform how interventions can be tailored to emphasize the relevant processes (Johansson & Høglend, 2007). Indeed, much research in the depressive (for a review, see Garratt, Ingram, Rand, & Sawalani, 2007) and anxiety disorders (e.g., Hofmann et al., 2007; Teachman, Marker, & Smith-Janik, 2008) has found that changes in cognitions and appraisals precede reductions in measures of symptom severity.

Recent research into the mechanisms of change in CT for OCD has examined the role of maladaptive beliefs, but has yielded inconclusive results. Woody, Whittal, and McLean (2011) found that

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changes in maladaptive beliefs accounted for a significant reduction in OCD symptom severity, but their proposed mediator (Obsessive Belief Questionnaire, OBQ; Obsessive Compulsive Cognitions Working Group [OCCWG], 2003) and outcome measure (Yale-Brown Obsessive Compulsive Scale, Y-BOCS; Goodman et al., 1989) were administered concurrently and only at baseline and post-treatment. As such, the researchers indicated that they were unable to establish temporal precedence. Consequently, in addition to the primary outcome measures listed above, Woody and colleagues analyzed the Personal Significance Scale (Rachman, 2001; most similar to the Importance/Control subscale of the OBQ) and the Obsessional Activity Questionnaire (Woody et al., 2011; measure of OC severity), which were administered prior to every session. Contradicting their findings with their primary measures, bivariate dual change score (BDCS) analyses indicated that the severity of obsessional symptoms accounted for changes in appraisals of personal significance. Thus, this study raised the question of whether changes in appraisals mediate symptom severity or vice versa.

Most recently, Olatunji et al. (2013) examined how an inflated sense of responsibility mediated treatment response in CT for OCD. They administered their primary mediator, the Salkovskis Responsibility Scale (SRS; Bouvard et al., 2001), and outcome measure (Y-BOCS) at baseline and at weeks 4, 16 (post-treatment), 26, and 52. While the researchers did not conduct session-by-session assessments, their use of a time lag permitted a test for temporal precedence. Results indicated that a reduction in beliefs related to exaggerated responsibility did not significantly mediate changes in OCD symptom severity.

Given the findings from these two investigations, future research is needed to clarify the role of responsibility in CT for OCD, as well as more thoroughly assess whether other types of obsessive beliefs (e.g., perfectionism), when measured frequently throughout treatment, mediate response. Therefore, the primary aim of the present study was to comprehensively examine whether three empirically supported types of obsessive beliefs (perfectionism/certainty, importance/control of thoughts, responsibility/threat estimation; OCCWG, 2005) operate as mechanisms of change in CT for OCD, by analyzing changes in these constructs throughout treatment. Given that cognitive mediation of symptom improvement has been demonstrated in both depression and anxiety disorders, we hypothesize that changes in obsessional beliefs will lead to a reduction in OCD symptom severity.

We also examined whether other cognitive structures, such as early maladaptive schemas (EMS), mediate treatment outcome. These pervasive core beliefs organize information about oneself, others, and the environment (Beck & Freeman, 1990; Young, Klosko, & Weishaar, 2003). EMS's are constructed during childhood and adolescence as a result of unmet emotional needs (e.g., impaired autonomy) and function as a template for the processing of relevant information. These deeper-level beliefs (e.g., unrelenting standards) give rise to higher-level assumptions and appraisals (e.g., If I don't do something perfectly, then I am a complete failure; Young et al., 2003). Consistent with schema therapy (Young et al., 2003), modification of EMS's through CT can lead to changes in higher-level appraisals and potentiate one's response to treatment (Haaland et al., 2011).

While no research has examined how one's EMS profile mediates treatment outcome for OCD, other studies have examined the schema activation pattern of patients with OCD and how EMS's predict outcome in ERP. Results demonstrated that OCD patients show significantly elevated EMS profiles compared to those with other comorbid conditions (e.g., trichotillomania; Lochner et al., 2005) or a control sample (Atalay, Atalay, Karahan, & Çaliskan, 2008). Moreover, Haaland et al. (2011) found that during ERP, the only EMS which predicted symptom improvement at post-treatment was improvement in the failure schema. Integrating research on schema activation patterns in OCD patients, we hypothesize that EMS's will operate as a distinct mechanism of change in CT for OCD, such that reductions in underlying schemas will predict a reduction in OCD symptom severity later in treatment.

The present study aims to clarify the role of obsessive beliefs as a mechanism of change in CT for OCD and investigate how underlying maladaptive schemas influence treatment response. Specifically, we examined whether ratings of obsessive beliefs and maladaptive schemas predict the rate of change in Y-BOCS during and post-treatment. Our study represents the first to not only examine the mediating role of maladaptive schemas, but to also administer a comprehensive measure of obsessive beliefs more frequently, facilitating examination of the potential mediator's temporal precedence.

Methods

Participants

We analyzed data from adults who participated in either an open ($n = 10$) or waitlist controlled trial (WCT; $n = 29$) for CT for OCD (see Wilhelm et al., 2005; 2009). The study protocols were approved by institutional review committees at participating institutions, and all participants provided written informed consent. Eligible participants were 18 years of age or older, met diagnostic criteria for OCD, and had a Y-BOCS score greater than 16 (indicating clinically significant OCD symptoms). Exclusion criteria for both studies included: a diagnosis of Tourette's syndrome, severe cognitive dysfunction, mental retardation, dementia, brain damage, or symptoms requiring psychiatric hospitalization. Additionally, participants were excluded if they concurrently participated in psychotherapy, had received CT for OCD, or had received at least 10 sessions of behavior therapy for OCD. Patients in the WCT were permitted to be on a stable dosage of psychiatric medications (i.e., remain at the same dose for 2 months before and throughout the study), but the open trial excluded patients who received pharmacotherapy.

As had been done previously with this population (Steketee et al., 2011), we combined the two samples to increase power. Adults in the two trials were similar in most respects, differing only in that participants in the WCT had less co-morbidity and greater use of psychiatric medications at baseline compared to those in the open trial. Three patients in the WCT who dropped out immediately after baseline before receiving any treatment were excluded. Thirty-six patients comprised the final analysis population, all of whom completed at least one assessment visit. Thirty-two (89%) completed at least two assessments, 29 (81%) completed at least three assessments, and 26 patients (72%) completed all four scheduled on-treatment assessments.

In addition to OCD, a little less than 50% ($n = 16$) of the sample met diagnostic criteria for a current Axis I disorder. Comorbid conditions included major depressive disorder ($n = 10$), social phobia ($n = 4$), generalized anxiety disorder ($n = 4$), specific phobia ($n = 4$), body dysmorphic disorder ($n = 2$), dysthymia ($n = 2$), binge eating disorder ($n = 2$), and panic disorder ($n = 1$). Regarding OC symptomology, patients reported the following at baseline: contamination, aggressive, somatic, religious, sexual, and superstitious obsessions and washing/cleaning, checking, hoarding,