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Exploring mechanisms of change in schema therapy for chronic depression

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ABSTRACT

Background and objectives: The underlying mechanisms of symptom change in schema therapy (ST) for chronic major depressive disorder (cMDD) have not been studied. The aim of this study was to explore the impact of two potentially important mechanisms of symptom change, maladaptive schemas (proxied by negative idiosyncratic core-beliefs) and the therapeutic alliance.
Methods: We drew data from a single-case series of ST for cMDD. Patients with cMDD (N = 20) received on average 78 repeated weekly assessments over a course of up to 65 individual sessions of ST. Focusing on repeated assessments within-individuals, we used mixed regression to test whether change in core-beliefs and therapeutic alliance preceded, followed, or occurred concurrently with change in depressive symptoms.
Results: Changes in core-beliefs did not precede but were concurrently related to changes in symptoms. Repeated goal and task agreement ratings (specific aspects of alliance) of the same session, completed on separate days, were at least in part associated with concurrent changes in symptoms.
Limitations: By design this study had a small sample-size and no control group.
Conclusions: Contrary to what would be expected based on theory, our findings suggest that change in core-beliefs does not precede change in symptoms. Instead, change in these variables occurs concurrently. Moreover, alliance ratings seem to be at least in part colored by changes in current mood state.

1. Introduction

Major depressive disorder (MDD) is a common mood disorder accounting for the greatest disease burden among mental disorders worldwide (Whiteford et al., 2013). Although effective treatments for MDD are available, it is estimated that about 20% of depressed patients do not recover within two years (Spijker et al., 2002). When symptoms of MDD are present for two years or longer depression is considered to be chronic (cMDD). Current treatments for cMDD include psychotherapy, antidepressants or their combination (for a review see: Spijker, van Straten, Bockting, Meeuwissen, & van Balkom, 2013). Although psychotherapy is effective in treating cMDD, the effect sizes are rather small (Cuijpers et al., 2010) indicating that there is room for improvements. A better understanding of the mechanisms that contribute to symptom change is the key to improving current treatments (Kazdin, 2007). The overall aim of the current study was to explore the impact of two potentially important mechanisms of symptom change, maladaptive schemas and the therapeutic alliance, during psychotherapy for cMDD.

Schema therapy (ST) is a relatively new, long-term, integrative, treatment for chronic axis-I and axis-II disorders (Young, Klosko, & Weishaar, 2003), with an established effectiveness for personality disorders (for a review see: Bamelis, Bloo, Bernstein, & Arntz, 2012) and emerging evidence suggests that ST is also effective for cMDD (e.g. Carter et al., 2013; Malogiannis et al., 2014; Renner, Arntz, Peeters, Lobbestael, & Huibers, 2016). We conducted a single-case series to test the effects of individual ST in 25 patients with cMDD. Relative to a no-treatment control phase, the intervention led to significant and large reductions in depressive symptom severity (Cohen's *d* 1.22–1.30; Renner et al., 2016). While a number of studies have started to test the effects of ST for cMDD on the reduction of depressive symptoms, another relevant question is what accounts for change in

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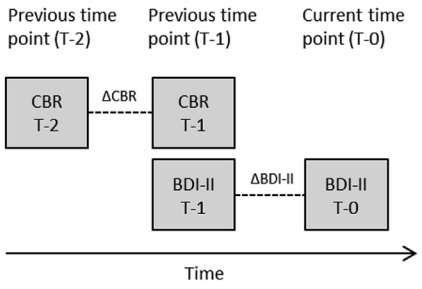
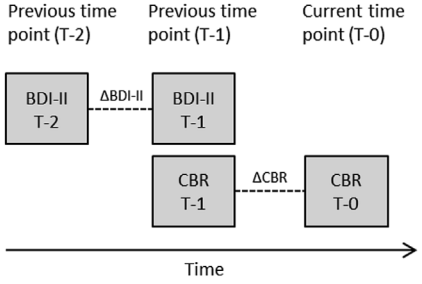
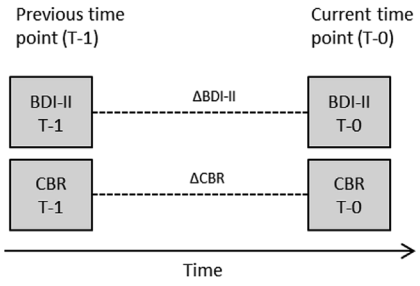
Model tested and data structure	Description of model tested
Model 1: Δ CBR → Δ BDI-II 	Change in core-beliefs predicts subsequent change in symptoms: Preceding change in core-beliefs ($\Delta CBR_{T\text{-}2,T\text{-}1}$) predicts subsequent change in depressive symptoms ($\Delta BDI\text{-}II_{T\text{-}1,\ T\text{-}0}$).
Model 2: Δ BDI-II → Δ CBR 	Change in symptoms predicts subsequent change in core-beliefs: Preceding change in depressive symptoms ($\Delta BDI\text{-}II_{T\text{-}2,\ T\text{-}1}$) predicts subsequent change in core-beliefs ($\Delta CBR_{T\text{-}1,T\text{-}0}$).
Model 3: Δ BDI-II <⟶> Δ CBR 	When symptoms change, core-beliefs change concurrently: Change in symptoms ($\Delta BDI\text{-}II_{T\text{-}1,\ T\text{-}0}$) predicts concurrent change in core-beliefs ($\Delta CBR_{T\text{-}1,T\text{-}0}$).

Fig. 1. Three models testing the relation between negative core-beliefs and depressive symptoms. BDI-II = Beck Depression Inventory second edition; CBR = Core-beliefs Ratings; T = Time.

symptoms during treatments (i.e. what are the treatment mechanisms).

The theoretical model of ST assumes that patients with psychological problems are characterized by a distinct set of early maladaptive schemas (Young et al., 2003). These schemas determine the way in which people perceive the world, themselves and others and can have a powerful impact on sensations, emotions and behavior. The goal of ST is to decrease the impact of dysfunctional schemas and to replace them with functional schemas. Theoretically, schemas might be related to depressive symptoms in at least three different ways (Fig. 1): i) according to theory, change in schemas, drives subsequent change in symptoms during ST (Young et al., 2003), ii) contrary to theory, change in depressive symptoms drives subsequent change in schemas, iii) schemas change concurrently (i.e. at the same time) with depressive symptoms, suggesting that a third factor is driving change in both process and outcome.

Findings from previous studies that tested associations between schemas and change in symptoms during ST were mixed. Nordahl, Holthe, and Haugum (2005), for example, found that change in schemas from pre-treatment to post-treatment predicted improvements in global symptom severity in a mixed outpatient sample. In contrast, Renner, van Goor et al. (2013) found that, in a sample of young adults with personality disorders (features) receiving a shortened group ST intervention, changes in global symptom severity accounted for changes in schemas, rather than the other way around. Importantly, these studies did not take the temporal relation between changes in schemas and symptoms into account. van Vreeswijk, Spinhoven, Eurelings-Bontekoe, and Broersen (2014) studied temporal relations between changes in schemas and changes in symptoms by assessing pre-treatment to mid-treatment changes in schema severity and mid-treatment to end-treatment changes in symptoms during short term group schema cognitive behavioral group therapy. In a mixed outpatient sample they found that early changes in schemas predicted subsequent changes in symptoms as well as large concurrent associations between changes in schemas and changes in symptoms over time. While these studies provide preliminary support of temporal relations between change in schemas and change in symptoms during schema therapy, a more fine grained (session-to-session) analysis of temporal relations between schemas and symptoms during ST will further contribute to disentangling temporal relations between these variables. Thus, one aim of the current study was to explore temporal session-to-session