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Exploring sudden gains in behavioral activation therapy for Major Depressive Disorder

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ABSTRACT

Understanding the onset and course of sudden gains in treatment provides clinical information to the patient and clinician, and encourages clinicians to strive for these sudden clinical gains with their patients. This study characterizes the occurrence of sudden gains with Behavioral Activation (BA; Martell, Addis, & Jacobson, 2001), and the extent to which pre-treatment dysfunctional depressive thinking predicts sudden gains during treatment. We enrolled a sample of adults ($n = 42$) between ages 18–65 diagnosed with primary Major Depressive Disorder. All participants completed a 16-week course of BA, with clinical and self-report assessments at pre-, mid- and post-treatment. Results indicated that sudden gain and non-sudden gain participants showed differential improvement across treatment. No significant effects emerged for the dysfunctional cognitive style as a predictor of sudden gain status. Sudden gains may result from interaction of non-specific factors with the BA techniques implemented during early phases of therapy.

Introduction

The prevalence of Major Depressive Disorder (MDD) and its impact on functioning is well documented, with 12-month estimates in the U.S. of 6.7% and lifetime prevalence of 17% among adult patients (Kessler, Berglund, Demler, Jin, & Walters, 2005; Kessler, Chiu, Demler, & Walters, 2005). With such a major public health impact, approximately 52% of depressed individuals seek psychiatric treatment in any given 12-month period, and yet, only 20% of depressed individuals receive minimally adequate treatment (Wang et al., 2005). Taking into account those who enter treatment, 40–50% of samples drop out prematurely (Persons, Burns, & Perloff, 1988; Venturini, Sung, Nichol, & Sellner, 1999). The prevalence of MDD, along with the relatively low number of individuals who receive effective treatment, highlights the value of research focused on increasing positive outcomes, reducing negative effects, and identifying factors that help patients experience relief once they are in treatment.

The challenge with this kind of research is that symptoms of depression vary during the course of treatment, and the propensity to respond well to a specific evidence-based treatment is difficult for the patient and the clinician to estimate. About half of patients with MDD treated with behavioral psychotherapy report partial treatment response (Gollan, Gortner, & Dobson, 2006), and up to 75% achieve response or remission at long-term follow-up after a course of behavioral therapy (Dimidjian et al., 2006; Hopko et al., 2011). Identifying predictors of positive changes during behavioral therapies will improve our understanding of differential course of improvement during treatment. Given the dynamic and complex nature of response to treatment, and the individual differences in the trajectories of improvement, it is noteworthy that one form of treatment response is a rapid improvement of symptoms between therapy sessions, or sudden gains (Tang & DeRubeis, 1999).

In an analysis of within-individual depression changes with standardized research-based Cognitive Behavioral Therapy (CBT; Beck, Rush, Shaw, & Emery, 1979), a pattern was revealed in which some patients demonstrated a sudden, substantial drop in depression severity score in one between-session interval. This drop in symptoms accounted for much of the patient's total symptom improvement across treatment, indicating its significance beyond normal symptom fluctuation. The authors developed specific measurable criteria for what they termed "sudden gains": (a) the drop in score was at least 7 points on the Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988); (b) the drop represented a 25% reduction from the pre-gain session score; and, (c) the mean BDI score in the three sessions prior to the drop was significantly greater than the mean BDI score in the three sessions following the drop.

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Subsequent studies further explored the presence of the sudden gain phenomenon. For example, data for sudden gains emerged first from a study using two efficacy trials (Elkin et al., 1989; Hollon et al., 1992) with adult participants with MDD who received up to 20 sessions of CBT (Tang & DeRubeis, 1999). Of 61 participants, 24 experienced a sudden gain during treatment. These participants experienced a larger drop in BDI score compared with participants who did not experience a sudden gain. These participants also experienced better outcomes at end-of-treatment compared to those who did not experience such gains, defined by significantly higher recovery rates (Tang & DeRubeis, 1999).

Initial CBT trials examining sudden gains proposed that these sudden drops in depression severity result from the patient's insight into the cognitive model of depression (Tang & DeRubeis, 1999; Tang, DeRubeis, Beberman, & Pham, 2005). Consistent with this hypothesis, sudden gains were predicted by patient cognitive changes that occurred in "critical sessions," or sessions just prior to the sudden gain (Tang & DeRubeis, 1999). These findings were later strengthened using a more psychometrically sound form of the original cognitive change measure (Patient Cognitive Change Scale; Tang & DeRubeis, 1999; Tang et al., 2005).

Sudden gains have been captured in efficacy studies using different forms of psychotherapy, suggesting that gains may be independent of treatment approach and theoretical model. Sudden gains have been observed with Supportive Expressive Psychotherapy (Tang, Luborsky, & Andrusyna, 2002), group-based Cognitive Therapy (Kelly, Roberts, & Ciesla, 2005), Interpersonal Psychotherapy (Kelly, Cyranowski, & Frank, 2007), as well as with pharmacotherapy (Vittengl, Clark, & Jarrett, 2005). Results have been mixed, however, regarding the long-term implications of sudden gains. Participants exhibiting sudden gains have a lower risk of relapsing than those who do not experience such gains (Tang & DeRubeis, 1999; Tang, DeRubeis, Hollon, Amsterdam, & Shelton, 2007), though not all studies replicate these results (Busch, Kanter, Landes, & Kohlenberg, 2006).

Efficacy of behavioral treatments for depression has been researched for some time, beginning with Ferster's (1973) functional analytic theory of depression and Lewinsohn and Libet (1972) development of a specific treatment protocol. Lewinsohn's theory and interventions were based on the reinforcement explanation of depression, in that mood changes as a function of Response Contingent Positive Reinforcement (RCPR). According to this theory, depression is viewed as resulting from a decrease in/loss of positive reinforcement in the patient's environment, which causes reductions in frequency, intensity, and quality of previously reinforced healthy or non-depressed behavior (Dimidjian, Barrera, Martell, Munoz, & Lewinsohn, 2011; Hopko, Lejuez, Ruggiero, & Eifert, 2003).

Behavioral Activation (BA), emphasizing the functional relationship between reinforcement, behavior, and mood, has been tested as an effective stand alone approach for treatment of depression as a result of an important component analysis study (Jacobson et al., 1996). The results of this study were significant in that the least complex of the three interventions tested, BA, produced equivalent results to CT. Examining the efficacy of BA versus derivations of CBT to prevent relapse in this trial also indicated that all three components had comparable rates of relapse and recovery up to two years after treatment discontinuation (Gortner, Gollan, Dobson, & Jacobson, 1998).

BA has been shown to be effective for treatment of severe major depression, showing improved rates of response and remission (60–75%) when compared to CT (50%) (Dimidjian et al., 2006). In another clinical trial, those receiving prior BA or CT and those continued on medication had lower rates of relapse than those receiving medication discontinued on placebo at one year follow-up. In addition, at two years after treatment discontinuation, BA was at least as efficacious as continued medication in preventing relapse (Dobson et al., 2008).

Sudden gains have been observed in treatment modalities using Behavioral Activation strategies (e.g., Andrusyna, Unpublished work; Hopko, Robertson, & Carvalho, 2009). With Jacobson's 16-session model of Behavioral Activation, sudden gains participants showed significantly lower depression severity on self-report and clinician-rated measures, and sudden gain responders showed significantly lower relapse rates compared with non-sudden gain responders. However, within-session cognitive change, quantified with the Patient Cognitive Change Scale (PCCS; Tang & DeRubeis, 1999), was not significantly related to sudden gains (Andrusyna, Unpublished Work).

Complementary work using Behavioral Activation Treatment for Depression (BATD; Lejuez, Hopko, & Hopko, 2001),[1] a shorter behavioral treatment founded on matching theory (Herrnstein, 1970) and basing behavioral activation on a highly structured values assessment, measured sudden gains using the Tang and DeRubeis (1999) criteria. Results indicated that in a sample of 26 depressed outpatients diagnosed with cancer, 13 exhibited sudden gains across nine sessions of BATD. Sudden gains were associated with improved treatment response at end-of-treatment, and gains were maintained at 3-month follow-up (Hopko et al., 2009), with half of participants received training in cognitive and mindfulness techniques.

Sudden gains are associated with improved treatment response (Tang & DeRubeis, 1999; Tang et al., 2007), though the challenge remains to elucidate the extent to which processes that positively influence treatment outcome also increase the likelihood of sudden gains. One such predictor of change, dysfunctional cognitions, has been shown to affect outcome in CT, BA, and antidepressant treatment (Hamilton & Dobson, 2002; Jacobson et al., 1996; Pedrelli, Feldman, Vorono, Fava, & Petersen, 2008). Despite the absence of interventions to target cognitions, research participants in the component analysis who responded positively to BA also demonstrated significant reduction in depressive cognitive styles. That is, depressive cognitive styles were a mechanism of improvement in BA (Jacobson et al., 1996). Though cognitions influence a patient's participation and "buy in" to treatment, exposure to positively reinforcing events may be altering dysfunctional cognitions more effectively than explicit cognitive interventions (Jacobson et al., 1996). Because dysfunctional attitudes influence treatment outcome in CT and in BA, it is important to determine whether such attitudes influence a specific type of outcome, sudden clinical gains, in BA therapy. We therefore hypothesize that lower levels of dysfunctional thinking at the start of treatment, as measured by lower scores on the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978), will predict sudden gains in BA.

[1] BA (Martell et al., 2001) and BATD (Lejuez et al., 2001) are behavioral therapies developed by separate groups during a similar time period; BA at the University of Washington by Jacobson et al. (1996) and BATD by Hopko and colleagues in Tennessee. BATD and BA share similarities in their grounding behavioral principles and techniques, but differ somewhat in emphasis. BATD has theoretical underpinnings in matching theory and bases activation strategies on a highly structured values assessment, whereas BA is based in Lewinsohn and Libet (1972) and Ferster (1973)'s behavioral theories and targets avoidance behaviors by replacing them with activities that generate mastery and pleasure. The approaches differ in number of sessions (6–8 in BATD vs. 16 in BA) and relative focus and hierarchy of varying behavioral techniques (Dimidjian et al., 2011; Hopko, Lejuez, LePage, Hopko, & McNeil, 2003; Hopko, Lejuez, Ruggiero, et al., 2003; Lejuez et al., 2001). Both have been shown to be efficacious in clinical trials (Dimidjian et al., 2006; Dobson et al., 2008; Hopko et al., 2011; Hopko, Lejuez, LePage, et al., 2003).