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Changes in Distress Intolerance and Treatment Outcome in a Partial Hospital Setting

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Despite the well-established role of distress intolerance (DI) in a wide range of psychological disorders, few studies have examined whether DI improves during treatment and whether these changes are associated with symptom outcomes. Patients (N = 626) enrolled in a brief cognitive-behavioral partial hospital program completed pre- and posttreatment measures of DI. Results indicated that DI decreased significantly during treatment, with more than 30% of the sample exhibiting a reduction of more than 2 standard deviations from the sample mean. Women reported higher DI than men at baseline; however, there were no gender differences in changes in DI over time. Participants also completed a pre- and posttreatment measure of depression and a subset completed a measure of anxiety (n = 167). DI was associated with more severe depression and anxiety at pre- and posttreatment, with participants who reported a decrease in DI also reporting lower depression and anxiety symptoms at post-treatment. These results further highlight the transdiagnostic relevance of DI and suggest that DI may be a relevant factor in treatment outcome for depression and anxiety.

Keywords: distress intolerance; treatment outcome; depression; anxiety; cognitive behavioral therapy

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Distress intolerance (DI) is defined as the perceived inability to manage negative emotional and somatic states and reflects a trait-like interpretation of and behavioral response to these states. Empirically, DI has been distinguished from distress (Bradley et al., 2011; Leyro, Bernstein, Vujanovic, McLeish, & Zvolensky, 2011; Simons & Gaher, 2005) and has been shown to be distinct from, yet related to, the broader construct of emotion regulation (McHugh, Reynolds, Leyro, & Otto, 2013; Vujanovic, Marshall-Berenz, & Zvolensky, 2011). Elevated DI (reflected either by elevations relative to healthy comparison samples or higher DI at greater symptom severity levels) has been shown in a broad range of psychological disorders, such as anxiety disorders (e.g., Marshall-Berenz, Vujanovic, Bonn-Miller, Bernstein, & Zvolensky, 2010; Schmidt, Richey, & Fitzpatrick, 2006), substance dependence (e.g., McHugh & Otto, 2012a), eating disorders (e.g., Corstorphine, Mountford, Tomlinson, Waller, & Meyer, 2007), and personality disorders (e.g., Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006; Sargeant, Daughters, Curtin, Schuster, & Lejuez, 2011), among others (for review, see Leyro, Zvolensky, & Bernstein, 2010).

DI is hypothesized to be a risk factor for the development and maintenance of psychological disorders by interfering with goal-driven behavior in the context of distress. Consistent with this perspective, DI is linked to a number of outcomes involving a failure to persist toward goals in the context of negative emotional or somatic states, such as early lapse following a quit attempt in substance

use disorders (e.g., Brandon et al., 2003; Brown, Lejuez, Kahler, & Strong, 2002; Daughters, Lejuez, Kahler, Strong, & Brown, 2005; Hajek, 1991). In particular, DI has been associated with maladaptive avoidance-based behaviors that provide strong, proximal reduction of distress (e.g., self-harm, substance use), but are associated with a range of deleterious behavioral and mental health outcomes (e.g., Anestis, Selby, Fink, & Joiner, 2007; MacPherson et al., 2010; Nock & Mendes, 2008).

Although much of the research on DI has focused on substance use disorders, recent research has highlighted the relevance of this risk factor in depression and anxiety (e.g., Cummings et al., 2013; Daughters et al., 2009). DI is associated with greater severity of symptoms of internalizing disorders, such as posttraumatic stress disorder (Marshall-Berenz et al., 2010; Vujanovic, Bonn-Miller, Potter, Marshall, & Zvolensky, 2011), social phobia (Macatee & Cougle, 2013), panic disorder (Marshall et al., 2008; Schmidt et al., 2006), and depression (Magidson et al., 2013). Moreover, cognitive avoidance strategies that are characteristic of depression and anxiety, such as worry and obsessions, are associated with DI (e.g., Keough, Riccardi, Timpano, Mitchell, & Schmidt, 2010), particularly in the context of stress (Macatee, Capron, Schmidt, & Cougle, 2013). Elevated DI also may increase the risk of substance use among those with depressive symptoms (Buckner, Keough, & Schmidt, 2007), consistent with the literature linking coping motives for substance use with elevated DI (Bujarski, Norberg, & Copeland, 2012; Howell, Leyro, Hogan, Buckner, & Zvolensky, 2010; Zvolensky et al., 2009).

In addition to these links to the severity of psychological symptoms and the presence of disorders, DI has been shown to predict treatment outcome. Prospective studies have found that DI is associated with poor treatment outcomes for smoking cessation (Brown et al., 2009), drug dependence (Daughters, Lejuez, Kahler, et al., 2005), and depression (Williams, Thompson, & Andrews, 2013). In addition, DI has been shown to predict pretreatment attrition (MacPherson, Stipelman, Duplinsky, Brown & Lejuez, 2008) and treatment dropout (Daughters, Lejuez, Bornovalova, et al., 2005) in treatment for substance use disorders; however, DI was not associated with dropout in a recent study of depression (Williams et al., 2013).

Given its pervasiveness across psychological disorders, its relationship to symptom severity, and its prospective association with treatment outcome, DI may be an important target for treatment (Brown et al., 2008; Linehan, 1993; Otto et al., 2010). Although DI is relatively stable and traitlike (e.g., Cummings et al., 2013), it is also hypothesized to be modifiable with intervention. Indeed, treatments targeting DI have been associated with positive outcomes for substance use disorders (Bornovalova, Gratz, Daughters, Hunt, & Lejuez, 2012; Brown et al., 2013). Reduction of DI in treatment may both (a) enhance behavioral and functional outcomes by improving the ability to persist toward goals in the context of distress, and (b) reduce maladaptive avoidance behaviors motivated by DI. For example, treatments for substance use disorders have targeted the reduction of DI to enhance the ability to tolerate the discomfort of acute and protracted withdrawal in early abstinence (Brown et al., 2008). However, much of the treatment research in this area to date has focused on studies examining the impact of baseline DI on outcomes, with very few studies examining changes in DI over the course of treatment.

Studies of treatments that explicitly target DI have not consistently reported changes in DI over the course of treatment. A recent study found that a DI-targeted treatment for smoking cessation impacted hypothesized mediators (e.g., experiential avoidance), providing some support that the treatment successfully reduced DI (Brown et al., 2013). In addition, a pilot study of a DI treatment for substance use disorders found significant reductions in behavioral measures of DI over time (Bornovalova et al., 2012). Although these treatments explicitly target the reduction of DI, it is unclear whether cognitive-behavioral therapies that aim to change the ways in which individuals respond to their distress may also lead to changes in DI. For example, exposure-based therapies emphasize approach-oriented responding to distressing states (i.e., approaching a feared situation and persisting in that situation despite anxiety) and thus may reduce DI. One study of cognitive-behavioral therapy (CBT) for smoking cessation found no significant changes in DI from pre- to posttreatment (Kapson, Leddy, & Haaga, 2012); however, a recent study of a computerized CBT intervention for depression reported a significant, but modest, improvement in DI over the course of treatment (Williams et al., 2013). Thus, the literature to date is mixed with respect to whether standard or DI-targeted treatments are associated with reductions in DI.

The overarching aim of this study was to examine changes in DI during treatment in a diagnostically heterogeneous clinical sample enrolled in a brief partial hospitalization treatment program. Understanding the impact of treatment on DI is particularly important in such samples because DI may serve as a useful common target for treatment in service provision settings with populations characterized by diagnostic heterogeneity or co-occurring disorders. This study builds upon recent studies examining change in