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A multi-method analysis of distress tolerance in body dysmorphic disorder

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ABSTRACT

Distress tolerance (DT) is a transdiagnostic construct linked to multiple psychiatric disorders. We conducted three studies using different methods to investigate the relationship between DT and body dysmorphic disorder (BDD). Study 1 found a significant relationship between low DT and more severe BDD symptoms in an adult community sample ($N = 81$). In Study 2, we found a similar relationship between lower DT and greater BDD symptoms in a student sample ($N = 192$). Furthermore, we found a unique relationship between greater BDD symptoms and lower self-reported tolerance of anger and sadness mood induction tasks. Greater BDD symptoms were not significantly associated with lower self-reported tolerance of a fear mood induction task. In Study 3, a clinical sample of individuals with BDD ($N = 40$) reported lower DT than a sample of healthy controls ($N = 36$). Findings suggest that low DT is a broad vulnerability factor related to BDD.

1. A multi-method analysis of distress tolerance in body dysmorphic disorder

Body dysmorphic disorder (BDD) is characterized by a preoccupation with one or more perceived defects or flaws in appearance that results in significant distress or impairment in social, occupational, or other areas of functioning (American Psychiatric Association [APA], 2013). Given similarities in phenomenology, comorbidity, symptom presentation (e.g., intrusive thoughts and repetitive behaviors), and treatment response between BDD and obsessive-compulsive disorder (OCD), the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*) now includes BDD under the new section for OCD and Related Disorders (APA, 2013; Chosak et al., 2008; Phillips, Gunderson, Mallya, McElroy, & Carter, 1998; Storch, Abramowitz, & Goodman, 2008). BDD is associated with severe symptom profiles, avoidance, delusionality, high rates of comorbid disorders (e.g., major depression, social phobia, OCD, substance use disorders), and poor quality of life (Didie et al., 2006; Gunstad & Phillips, 2003; Phillips, 2000, 2005; Phillips, Menard, Fay, & Weisberg, 2005).

Recent research has focused on transdiagnostic vulnerability factors potentially relevant to BDD not addressed within current cognitive-behavioral models (Neziroglu, Khemlani-Patel, & Veale, 2008; Veale, 2004; Veale et al., 1996; Wilhelm, 2006). For example, intolerance of uncertainty (IU), or the tendency to carry negative beliefs about uncertain situations and one's ability to cope with uncertainty (Buhr & Dugas, 2006) was recently linked to BDD, such that greater IU was positively associated with BDD symptoms, above and beyond general distress, and IU levels were significantly greater in a clinical BDD group relative to a healthy sample (Summers, Matheny, Sarawgi, & Cougle, 2016). Because IU has been conceptualized as a facet of distress tolerance (DT; Leyro, Zvolensky, & Bernstein, 2010) it is possible that DT represents a broader vulnerability factor relevant to BDD.

DT is conceptualized as the capacity to withstand or tolerate negative emotional or aversive psychological states (Gratz & Roemer, 2004; Leyro et al., 2010), and is a construct comparable to low frustration tolerance, as defined by Albert Ellis in the context of his theory underlying Rational-Emotive Behavior Therapy (Ellis, 1962; Rodman, Daughters, & Lejuez, 2009). An abundance of research has been conducted in an effort to explore the role of DT as a transdiagnostic process associated with a wide variety of

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psychopathology, including the development and maintenance of substance abuse (Brown, Lejuez, Kahler, Strong, & Zvolensky, 2005; Chaney, Roszell, & Cummings, 1982; Otto, Powers, & Fischmann, 2005), personality disorders (Daughters, Sargeant, Bornovalova, Gratz, & Lejuez, 2008; Linehan, 1993), anxiety disorders (Keough, Riccardi, Timpano, Mitchell, & Schmidt, 2010; Macatee, Capron, Guthrie, Schmidt, & Cougle, 2015; Vujanovic, Marshall, Gibson, & Zvolensky, 2010), eating disorders (Corstorphine, Mountford, Tomlinson, Waller, & Meyer, 2007; Hambrook et al., 2011), and OC-related disorders such as OCD (Cougle, Timpano, Fitch, & Hawkins, 2011; Cougle, Timpano, & Goetz, 2012; Keough et al., 2010; Macatee, Capron, Schmidt, & Cougle, 2013; Robinson & Freeston, 2014) and hoarding disorder (Timpano, Buckner, Richey, Murphy, & Schmidt, 2009; Timpano, Shaw, Cougle, & Fitch, 2014).

Individuals low in DT are posited to be more sensitive to distress and/or aversive states and, consequently, may be more likely to avoid distressing situations or to attempt to dissipate negative emotion more often (Leyro et al., 2010). For some individuals, this may be done by engaging in maladaptive coping strategies such as marijuana and alcohol misuse, bulimic behavior, or self-injurious behaviors (Anestis, Selby, Fink, & Joiner, 2007; Brown et al., 2005; Buckner, Keough, & Schmidt, 2007; Chapman, Gratz, & Brown, 2006; Nock & Mendes, 2008). For others, such as those individuals suffering from obsessions and compulsions, efforts to control thoughts and compulsive behaviors may be used as coping strategies to avoid negative emotions or perceived negative consequences (Robinson & Freeston, 2014). This pattern of avoidance may also be relevant to BDD, given that individuals with the disorder experience obsessive thoughts related to appearance and also engage in repetitive behaviors, such as compulsive mirror checking or grooming to cope with these persistent thoughts (Oakes, Collison, & Milne-Home, 2016; Phillips, 2005; Veale & Riley, 2001). A review of previous research examining the relevance of DT to disorders related to BDD (e.g., eating disorders, social anxiety disorder, OCD, and hoarding disorder) may provide a helpful lens through which to view the potential relationship between DT and BDD symptoms.

Corstorphine et al. (2007) explored differences in self-reported DT between a sample of women with *DSM-IV* diagnosed eating disorders compared to women without a history of an eating disorder. Individuals in the eating disorder group scored significantly higher on items assessing avoidance of affect and significantly lower on items assessing acceptance and management of emotions compared to their healthy control counterparts. The authors suggested that this finding may indicate that individuals in the clinical group utilized emotional avoidance as a coping strategy for tolerating difficult emotions. Hambrook et al. (2011) found a similar relationship in their study, such that individuals with anorexia nervosa reported significantly lower DT or a tendency to avoid affect or emotion compared to mentally healthy controls. The clinical similarities between BDD and the eating disorders (i.e., disturbance of body image and maladaptive beliefs about appearance) provide reason to suspect that individuals with BDD similarly utilize emotional avoidance as a coping strategy, perhaps due to poor regulation of emotions, or a perceived inability to tolerate distress.

Research suggests that BDD also shares clinical similarities with social anxiety disorder (SAD) such as fear of negative evaluation and avoidance (Fang & Hofmann, 2010; Kelly, Walters, & Phillips, 2010; Pinto & Phillips, 2005; Veale, Kinderman, Riley, & Lambrou, 2003) as well as a tendency to interpret ambiguous social information in a threatening manner (Amin, Foa, & Coles, 1998; Buhlmann et al., 2002; Buhlmann, Etcoff, & Wilhelm, 2006; Heinrichs & Hofmann, 2001; Hofmann, 2007; Stopa & Clark, 2000). Furthermore, BDD and SAD are highly comorbid, with studies suggesting that 12%–69% of individuals with BDD suffer from comorbid SAD (Gunstad & Phillips, 2003; Hollander, Cohen, & Simeon, 1993; Phillips & Diaz, 1997; Phillips, Menard et al., 2005; Veale et al., 1996; Zimmerman & Mattia, 1998). Previous research suggested that DT was uniquely negatively associated with social anxiety symptoms. That is, individuals with more severe social anxiety symptoms reported a decreased ability to tolerate distress. This relationship was significant and was not explained by the effects of negative affect (Keough et al., 2010). Similar to the eating disorders, the shared clinical similarities between BDD and SAD may suggest a relationship between BDD and low DT. For example, individuals with BDD may perceive themselves as unable to tolerate the distress associated with potential negative evaluation.

Given the recent categorization of BDD as an OC-related disorder in the *DSM-5* (APA, 2013), it is also important to consider the relevance of DT to OCD and hoarding disorder. Both OCD and BDD are characterized by obsessive thoughts (e.g., repugnant thoughts in OCD and preoccupation with appearance in BDD). Further, OCD, BDD, and hoarding are all characterized by compulsive and/or ritualistic behaviors. Robinson and Freeston (2014) recently reviewed 11 studies exploring the relationship between OCD and DT. While findings from this review did not suggest specificity for DT's relationship to OCD over other anxiety disorders, overall findings suggested that DT significantly correlated with OCD symptoms. More specifically, there was evidence to suggest that DT may contribute to the role of obsessions within the disorder, such that DT moderated the relationship between obsessions and the need to act (negative urgency; Cougle et al., 2012). Furthermore, results from a case series of patients with OCD found that a reduction of experiential avoidance, or avoidance of distress, was associated with an improvement in symptoms, obsessions in particular (Allen & Barlow, 2009; Twohig, Hayes, & Masuda, 2006). Timpano et al. (2009) found a similar relationship in hoarding, such that greater hoarding symptoms were significantly related to lower self-reported DT in a nonclinical sample. Furthermore, Timpano et al. (2014) replicated these findings, and also found that hoarding symptoms were significantly associated with difficulty tolerating specific emotions (e.g., sadness, fear, disgust, anger) in response to a series of mood induction tasks. The authors suggested that hoarding behaviors may represent an effort to avoid distressing emotions such as those involved with discarding possessions. Similar patterns may emerge with regard to BDD, such that individuals may engage in avoidance or compulsive behaviors in order to avoid, prevent, or decrease the intensity of distress resulting from their appearance concerns.

Despite evidence suggesting that DT may be an important transdiagnostic vulnerability factor across several disorders phenomenologically related to BDD, to our knowledge, its potential role in BDD symptomatology has yet to receive empirical attention. Further identification of transdiagnostic factors relevant to BDD could help identify more parsimonious treatment targets for those with the disorder. This could make treatment of the disorder more efficient, since it is associated with high rates of comorbidity.

2. The current studies

Data from three independent but related studies utilizing varying measurement instruments of DT was analyzed to evaluate the relationship between DT and BDD symptoms in three different samples. Extant research suggests that the presence and severity of obsessive-compulsive symptomatology in the general population is dimensional rather than categorical; thus, use of unselected or analogue samples (e.g., non-clinical samples such as college students with subclinical OC symptoms) is highly relevant for studying and understanding OC-spectrum illnesses (Abramowitz et al., 2014). Furthermore, use of multiple measures (e.g., the Distress Tolerance Scale [DTS] and the Distress Intolerance Index [DII];