



## Differential patterns of physical symptoms and subjective processes in generalized anxiety disorder and unipolar depression

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### ABSTRACT

Given the substantial comorbidity between generalized anxiety disorder (GAD) and unipolar depressive disorders (UDDs), some have suggested that these disorders be combined in future editions of the DSM. However, decisions regarding nosology should not only account for current manifestations of symptom profiles, but also the potential diagnostic utility of associated characteristics, which, given past research, may suggest greater distinctiveness between these disorder classes. In the present investigation, we examined the role of one-item indices of physical, emotional/motivational, and cognitive symptoms in differentiating GAD from UDDs. We assessed these symptoms with one-item measures in order to provide an initial examination of the viability of these constructs as diagnostic criteria. In Study 1, in an unselected college sample, muscle pains and aches, gastrointestinal symptoms, emotion intensity, and intolerance of uncertainty were associated with GAD symptoms; conversely, low positive affect was associated with UDDs symptoms. In Study 2, we extended these findings to a clinical population and found that muscle pains and aches, positive affect, goal motivation, emotion intensity, and intolerance of uncertainty were higher in GAD than in UDDs.

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### 1. Introduction

Generalized anxiety disorder (GAD) has historically received less conceptual attention as compared to other anxiety disorders (Dugas, 2000). Given diagnostic modifications throughout various editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM), delineating the essential pathological components of GAD was initially difficult and likely contributed to a slowing of its conceptual development. For instance, the criteria for GAD in the revised third edition of the Diagnostic and Statistical Manual (DSM-III-R; APA, 1987) included a number of symptoms that reflected acute arousal of the autonomic nervous system (ANS), which made it challenging to disentangle GAD from panic disorder (Marten et al., 1993; Starcevic, Fallon, Uhlenhuth, & Pathak, 1994). Not surprisingly, the resultant diagnostic specificity was poor, as can be shown by studies that attempted to discriminate patients with GAD from individuals with other

anxiety disorders (Di Nardo, Moras, & Barlow, 1993; Mannuzza et al., 1989). In DSM-IV (APA, 1994), further clarification of the diagnosis was achieved with the designation of uncontrollable worry and physical symptoms related to heightened chronic arousal (e.g., muscle tension) as well as the elimination of some of the symptoms that reflected acute ANS arousal (e.g., tachycardia, nausea).

Although these changes to the GAD criteria have improved reliability of the disorder (Brown, Di Nardo, Lehman, & Campbell, 2001), distinguishing GAD from other conditions has remained challenging. For example, although modifications enacted in DSM-IV have effectively decreased overlap with panic disorder, GAD remains characterized by prominent comorbidity. In addition to its comorbidity with other anxiety disorders, GAD has demonstrated particularly high diagnostic overlap with unipolar depressive disorders (i.e., “UDDs”) including major depression and dysthymic disorder (Hettema, 2008; Kessler et al., 2005a, 2005b). To address the high levels of comorbidity between GAD and UDDs, investigators have drawn from structural investigations of genotypic and phenotypic emotional characteristics and have suggested that these disorders be combined into a “distress disorder” category (Krueger, 1999; Vollbergh et al., 2001; Watson, 2005; Watson, O’Hara, & Stuart, 2008). This new category would also include

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posttraumatic stress disorder (PTSD) and, thus, result in a separation of GAD and PTSD from the rest of the anxiety disorders.

Although intuitively appealing given its parsimony in addressing these overlap issues, combining these disorders into one category ignores key issues in the relationship between GAD and UDDs including: (1) inclusion of physical symptom criteria that obscure between-group differences (e.g., difficulty sleeping) and exclusion of physical symptom criteria that may be more likely to demonstrate specificity (e.g., gastrointestinal symptoms; Hazzlett-Stevens, Craske, Mayer, Chang, & Naliboff, 2003); (2) distinctions in emotional and motivational processes (Mennin, Holoway, Fresco, Moore, & Heimberg, 2007); and (3) cognitive processes that have been shown to differentiate these disorders such as intolerance of uncertainty (Dugas, Buhr, & Ladouceur, 2004).

### 1.1. Specificity in physical symptoms

Examination of the diagnostic criteria for GAD reveals that four out of the six associated physical symptoms (i.e., restlessness, fatigue, difficulty concentrating, and sleep difficulties) are also part of the diagnostic criteria for MDD (e.g., Mennin, Heimberg, Fresco, & Ritter, 2008) and three out of the six associated symptoms (e.g., fatigue, difficulty concentrating, and sleep difficulties) are part of the diagnostic criteria for dysthymic disorder. Consequently, although the GAD physical symptoms have shown discriminant validity between GAD and the rest of the anxiety disorders (e.g., Marten et al., 1993), they have not shown strong discrimination between GAD and UDDs (Brown, Marten, & Barlow, 1995); one exception being difficulty concentrating, which Joormann and Stoeber (1999) found to be more strongly related to depressive symptoms than to worry. Given the high overlap between the diagnostic symptoms, it is not surprising that many similarities are found when comparing GAD and UDDs (e.g., Watson et al., 2008).

One way to address physical symptom overlap is to incorporate additional symptoms that might increase specificity between GAD and the UDDs (Barlow & Winze, 1998). A possibility is to focus on pain, given recent work suggesting that muscular and stomach pain might be associated with GAD (Beesdo et al., 2009) and could potentially differentiate this disorder from UDDs (Means-Christensen, Roy-Byrne, Sherbourne, Craske, & Stein, 2008). Indeed, muscle tension, which is part of the diagnostic criteria of GAD but not of UDDs, has shown subjective and physiological specificity to GAD and differentiation from UDDs (Hoehn-Saric & McLeod, 1988; Hoehn-Saric, McLeod, & Zimmerli, 1989; Joormann & Stoeber, 1999). Similarly, evidence suggests that gastrointestinal symptoms might be important for the diagnosis of GAD. In this respect, Kubarych, Aggen, Hettema, Kendler, and Neale (2005) found that the item reflecting nausea or stomach distress (which was removed in DSM-IV) was endorsed more frequently than some of symptoms that were retained. Similarly, Starcevic and Bogojevic (1999) found that nausea or stomach distress was among the most frequently endorsed symptoms in GAD. Additionally, individuals scoring high on worry and anxiety have more doctor visits and present with more gastric complaints than those low in worry and anxiety (Belanger, Ladouceur, & Morin, 2005). Lastly, irritable bowel syndrome (IBS) has been associated with GAD, worry, and intolerance of uncertainty (Blanchard, Scharff, Schwartz, Suls, & Barlow, 1990; Drews & Hazzlett-Stevens, 2008; Gros et al., 2009; Hazzlett-Stevens et al., 2003; Keefer et al., 2005), but also with the rest of the mood and anxiety disorders (e.g., Garakani et al., 2003; Lydiard et al., 2005; Masand, Kaplan, Gupta, & Bhandary, 1997) thus producing equivocal evidence of the specificity of gastrointestinal symptoms.

### 1.2. Specificity in emotionality

Structural models of affect indicate that negative affect is associated with each of the anxiety and mood disorders (Brown, Chorpita, & Barlow, 1998; Clark & Watson, 1991; Mineka, Watson, & Clark, 1998; Watson, 2005; Watson et al., 2008). Brown et al. (1998) examined symptom structure in a sample of outpatients with mood and anxiety disorders and found that the best fitting model consisted of higher order factors of negative affect, positive affect, and autonomic arousal. However, whereas all the disorders (MDD, dysthymic disorder, GAD, panic disorder, social anxiety, and obsessive compulsive disorder) loaded on negative affect, *only* UDDs and social anxiety disorder loaded (negatively) on positive affect. Converging evidence comes from empirical studies showing diminished subjective and expressive emotional responses to positive stimuli in depression (Sloan, Bradley, Dimoulas, & Lang, 2002; Sloan, Strauss, Quirk, & Sajatovic, 1997). Moreover, low positive affect has been associated with diminished approach motivation (Germans & Kring, 2000). Consequently, approach motivation has also shown negative associations with UDDs, but no relationship with the anxiety disorders (Depue, Krauss, & Spont, 1987; Henriques, Glowacki, & Davidson, 1994; Johnson, Turner, & Iwata, 2003; Kring & Bachorowski, 1999; Shankman, Klein, Tenke, & Bruder, 2007).

In addition to positive affect, emotional arousal, as manifested subjectively, has emerged as a possible candidate to increase the specificity of GAD. Along these lines, emotion intensity, conceptualized as the subjective strength of an emotional response, has been found to be elevated in GAD (Mennin, Heimberg, Turk, & Fresco, 2005) and recent studies have found emotion intensity to be higher in GAD than in UDDs (Kerns, Aldao, & Mennin, 2008; Mennin et al., 2007).

### 1.3. Specificity in cognitive process

A cognitive construct that has shown greater elevations in GAD compared to MDD is intolerance of uncertainty, which reflects the extent to which one believes that uncertainty is unacceptable (see Dugas et al., 2004a, 2004b). In a number of correlational and experimental studies, Dugas et al. have demonstrated a central role for intolerance of uncertainty in GAD, independent of its relationship with worry (e.g., Ladouceur, Talbot, & Dugas, 1997; Laugesen, Dugas, & Bukowski, 2003; Robichaud, Dugas, & Conway, 2003). Further, these investigators have shown that intolerance of uncertainty discriminated individuals with GAD from non-anxious controls (Dugas, Gagnon, Ladouceur, & Freeston, 1998) and other anxiety disorders (Ladouceur et al., 1999). Most germane to the current investigation, intolerance of uncertainty has been found to discriminate individuals with GAD from those with major depression (Dugas et al., 2004a, 2004b). An important next step in our understanding of intolerance of uncertainty in GAD consists of evaluating how it can be used *diagnostically* to differentiate GAD from UDDs. Given that our current diagnostic manuals (e.g., DSM-IV; APA, 2000) are based on one-item measures of constructs (e.g., excessive anxiety and worry), it is necessary to determine whether a one-item measure of intolerance of uncertainty can produce differentiation between GAD and UDDs on par with that produced by longer measures of this construct.

### 1.4. Present investigation

Given the potential for these constructs to provide greater specificity between these conditions, it may be premature to combine these diagnoses into a single diagnostic entity. Following a suggestion by Brown et al. (2001), GAD could be further refined to promote better separation from the mood disorders. One sugges-

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