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Changes in intolerance of uncertainty during cognitive behavior group therapy for social phobia

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ABSTRACT

Background and objectives: Recent research suggests that intolerance of uncertainty (IU), most commonly associated with generalized anxiety disorder, also contributes to symptoms of social phobia. This study examines the relationship between IU and social anxiety symptoms across treatment.
Method: Changes in IU, social anxiety symptoms, and depression symptoms were examined following cognitive behavior group therapy (CBGT) for social phobia ($N = 32$).
Results: CBGT led to significant improvements in symptoms of social anxiety and depression, as well as reductions in IU. Reductions in IU were associated with reductions in social anxiety but were unrelated to improvements in depression symptoms. Reductions in IU were predictive of post-treatment social phobia symptoms after controlling for pre-treatment social phobia symptoms and changes in depression symptoms following treatment.
Limitations: The relationship between IU and social anxiety requires further examination within experimental and longitudinal designs, and needs to take into account additional constructs that are thought to maintain social phobia.
Conclusions: Current findings suggest that the enhancing tolerance of uncertainty may play a role in the optimal management of social phobia. Theoretical and clinical implications are discussed.

1. Introduction

Individuals with social phobia fear negative evaluation in social and performance situations; they frequently avoid these situations or endure then with considerable distress (American Psychiatric Association, APA, 2000). Intolerance of uncertainty (IU) has been conceptualized as a cognitive bias that influences how individuals perceive, interpret, and react to uncertain situations (Dugas, Schwartz, & Francis, 2004). For individuals who are high in IU, the possibility that negative future events may occur is threatening and unacceptable, regardless of the probability of such events actually occurring (Ladouceur, Gosselin, & Dugas, 2000). As a consequence, they tend to respond to uncertain situations with distress and seek to avoid them (Buhr & Dugas, 2002). Social and performance situations, such as meeting unfamiliar people or public speaking, inherently involve a degree of uncertainty, and some researchers have speculated that the ability to tolerate uncertainty in social situations may be a critical element in the development and maintenance of social anxiety symptoms (Carleton, Collimore, & Asmundson, 2010).

IU has been explored within a variety of internalizing disorders, although it has been most heavily associated with worry and generalized anxiety disorder (GAD; Dugas, Gagnon, Ladouceur, & Freeston, 1998; van der Heiden et al., 2010; Sexton, Norton, Walker, & Norton, 2003). Although excessive worry is the hallmark of GAD, elevated worry is a common feature of many internalizing disorders (Harvey, Watkins, Mansell, & Shafran, 2004) and recent conceptualizations of IU suggest that it may be a transdiagnostic construct (Starcevic & Berle, 2006). IU appears to contribute to symptoms of many anxiety and depressive disorders. For example, McEvoy and Mahoney (2011) reported that IU accounted for unique variance in symptoms of GAD, obsessive compulsive disorder (OCD), panic disorder and agoraphobia, social phobia, and depression. Mahoney and McEvoy (2011a) have also shown that levels of IU did not significantly vary across patients with GAD, social phobia, panic

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disorder with or without agoraphobia, OCD, or depression. Moreover, in a pooled community and clinically anxious sample, IU has been shown to demonstrate a continuous or dimensional latent structure (Carleton et al., 2011). Thus IU may be potentially relevant to our understanding of multiple anxiety disorders. This paper specifically concerns the relationship between IU and social phobia.

Currently, IU does not play a substantial role in cognitive models of the maintenance and development of social phobia (Clark & Wells, 1995; Rapee & Heimberg, 1997). However, there is evidence to suggest that IU contributes to social anxiety symptoms. In a non-clinical sample, Boelen and Reijntjes (2009) found that IU explained a significant proportion of variance in social anxiety symptoms after taking account of neuroticism and a number of cognitive factors such as fear of negative evaluation, anxiety sensitivity, low self-esteem, perfectionism, and worry. Social anxiety symptoms were also predictive of IU after controlling for the shared symptom variance associated with GAD, OCD, and depression. IU has also been found to be positively associated with changes in social anxiety over a subsequent one week period (Riskind, Tzur, Williams, Mann, & Shahar, 2007). People with social phobia also appear to report the same level or degree of IU as people with GAD (Carleton et al., 2010; Mahoney & McEvoy, 2011a). Recent studies have examined different components of IU and their relationships to social phobia symptoms. Carleton, Norton, and Asmundson (2007) identified two factors within IU, namely, prospective IU and inhibitory IU. Prospective IU relates to fear and anxiety in anticipation of uncertainty, whereas inhibitory IU relates to inaction in the face of uncertainty. In a community sample, Carleton et al. (2010) found that the inhibitory aspect of IU explained unique variance in social phobia symptoms over and above positive and negative affect, fear of negative evaluation, and anxiety sensitivity. McEvoy and Mahoney (2011a) also found that the inhibitory component of IU explained unique variance in social phobia symptoms while controlling for neuroticism and symptoms of other internalizing disorders (GAD, OCD, panic disorder, agoraphobia, and depression). McEvoy and Mahoney (2011b) further demonstrated that inhibitory IU partially mediated the relationship between neuroticism and symptoms of social phobia even when controlling for symptoms of other internalizing disorders. Thus there appears to be a robust relationship between IU and social phobia symptoms.

A number of studies have explored changes in IU across cognitive behavior therapy (CBT) which has been shown to be an effective treatment for anxiety disorders (Butler, Chapman, Forman, & Beck, 2006; Hofmann & Smits, 2008). If IU is associated with the maintenance of anxiety disorders, IU should reduce following treatment. Reductions in IU have been reported during treatment for GAD and OCD with studies typically finding that reductions in IU were significantly correlated with improvements in core symptoms and occurred prior to, or concurrent with, major symptom improvement (Belloch et al., 2011; Dugas & Ladouceur, 2000; Goldman, Dugas, Sexton, & Gervais, 2007; Ladouceur, Dugas, et al., 2000; Overton & Menzies, 2005). One study to date has explored IU within the context of social phobia treatment. In a single-case design series, Hewitt, Egan, and Rees (2009) found that an IU-based intervention significantly reduced social anxiety symptoms for a man with comorbid diagnoses of social phobia, panic disorder, generalized anxiety disorder, major depressive disorder, and dysthymia. IU also reduced following treatment, but the single-case design limits conclusions about (a) the relationship between improvements in IU and reductions in social phobia symptoms, and (b) the generalizability of these relationships. Further study is needed to replicate and extend these findings by examining associations between changes in social anxiety and IU following CBT with larger clinical samples. Research is also needed to explore changes in IU specifically associated with social situations. As Carleton et al. (2010) have speculated, the degree to which people with social phobia can tolerate uncertainty associated with social situations may affect their level of social anxiety. Moreover, the predictive utility of IU in relation to CBT outcomes for social phobia is yet to be examined. Investigating the relationship between IU and comorbid depression is another avenue for additional research given the high prevalence of depression in people with social phobia (Mineka, Watson, & Clark, 1998).

The first aim of this study was to examine changes in IU, social anxiety, and depression during cognitive behavior therapy, as well as to explore the relationships between these variables. The second aim was to examine the predictive utility of IU with respect to changes in social phobia symptoms following treatment. The first hypothesis is that CBT will lead to significant reductions in symptoms of social phobia, depression, and IU. Consistent with previous research (Carleton et al., 2010; McEvoy & Mahoney, 2011a), the second hypothesis is that reductions in IU will correlate significantly with reductions in social phobia and depression symptoms. The third hypothesis is that changes in IU will significantly predict post-treatment social phobia symptoms after controlling for pre-treatment social phobia symptoms and changes in depression during treatment.

2. Method

2.1. Participants

Participants ($N = 32$, 50% male) were adults with social phobia who completed a cognitive behavior group therapy (CBGT) program at a specialist anxiety disorders treatment service. The mean age of participants was 31.41 years (SD = 9.97) and 88% had completed high school. In terms of relationship status, 16% reported that they were married or in *de facto* relationships, 75% were never married, and 9% separated or divorced. Participants were recruited from 10 group programs each containing five to eight participants. On average, participants attended 6.81 (SD = .40) sessions of the total seven.

Prior to treatment, participants were administered the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown, DiNardo, & Barlow, 1994). All participants met criteria for a diagnosis of social phobia and reported that it was their principal area of concern. Additional diagnoses included GAD (34%), major depressive disorder (28%), dysthymic disorder (34%), specific phobia (25%), panic disorder with or without agoraphobia (6%), OCD (3%), alcohol use disorder (9%), and drug use disorder (3%). The mean number of diagnoses was 2.56 (SD = 1.32) with 16% meeting criteria for two diagnoses, 41% reporting three diagnoses, and 16% with four or more diagnoses.

2.2. Measures

2.2.1. Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV)

ADIS-IV (Brown et al., 1994) is a structured diagnostic interview for the anxiety, mood, somatoform, and substance use disorders. Diagnoses are made according to the criteria described in the Diagnostic and Statistical Manual (DSM-IV; American Psychiatric Association, 1994). Brown, DiNardo, Lehman, and Campbell (2001) provide evidence of good inter-rater reliability for the principal diagnosis of social phobia ($\kappa = .77$). Inter-rater reliability for the additional disorders sampled in the current study is acceptable ($\kappa = .63$–$.95$, Brown et al., 2001). Evidence of construct validity, including discriminant and convergent validity, has been demonstrated (Brown, Chorpita, & Barlow, 1998).

In the current study, diagnosticians were four clinical psychologists and three psychiatric registrars. Training involved (a)