Journal of Affective Disorders 203 (2016) 256–264

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research paper

The Worry Behaviors Inventory: Assessing the behavioral avoidance associated with generalized anxiety disorder

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ARTICLE INFO

Article history:
Received 29 March 2016
Received in revised form
16 May 2016
Accepted 5 June 2016
Available online 6 June 2016

Keywords:
Generalized anxiety disorder
Behavior
Avoidance
Psychometric

ABSTRACT

Background: Understanding behavioral avoidance associated with generalized anxiety disorder (GAD) has implications for the classification, theoretical conceptualization, and clinical management of the disorder. This study describes the development and preliminary psychometric evaluation of a self-report measure of avoidant behaviors associated with GAD: the Worry Behaviors Inventory (WBI).
Methods: The WBI was administered to treatment-seeking patients (N=1201). Convergent validity was assessed by correlating the WBI with measures of GAD symptom severity. Divergent validity was assessed by correlating the WBI with measures of general disability and measures of depression, social anxiety and panic disorder symptom severity.
Results: Exploratory and confirmatory factor analyses supported a two-factor structure (*Safety Behaviors* and *Avoidance*). Internal reliability was acceptable for the 10-item WBI scale (α=.86), *Safety Behaviors* (α=.85) and *Avoidance* subscales (α=.75). Evidence of convergent, divergent, and discriminant validity is reported. WBI subscales demonstrated differential associations with measures of symptom severity. The *Safety Behaviors* subscale was more strongly associated with GAD symptoms than symptoms of other disorders, whereas the *Avoidance* subscale was as strongly correlated with GAD severity as it was with depression, social anxiety and panic disorder severity.
Limitations: Structured diagnostic interviews were not conducted therefor validity analyses are limited to probable diagnoses based on self-report. The cross-sectional design precluded examination of the WBI's temporal stability and treatment sensitivity.
Conclusions: Preliminary evidence supports the use of the WBI in research and clinical settings and may assist clinicians to identify behaviors that are theorized to maintain GAD and that can be targeted during psychological treatment.

1. Introduction

Generalized anxiety disorder (GAD) is characterized by chronic, excessive anxiety and worry about everyday concerns and somatic symptoms (American Psychiatric Association [APA], 2013). Existing research has focussed on identifying the cognitive and somatic symptoms of GAD rather than its behavioral features. The triggers for worry in GAD tend to be diffuse and change over time. People with GAD worry about multiple aspects of their daily life; they fear future disasters, uncertain situations, and worry about the worry itself (Dugas et al., 2001; Vasey and Borkovec, 1992; Wells and Carter, 2001). This may lead to more subtle and varied forms of avoidant behavior compared to the more overt avoidant behaviors observed in other anxiety disorders. Although previous investigations have not comprehensively assessed the avoidant behaviors that are associated with GAD, studies suggest that people with GAD engage in situational avoidance and safety behaviors such as excessive checking, reassurance-seeking, planning and other repetitive behaviors (Beesdo-Baum et al., 2012; Butler et al., 1987; Coleman et al., 2011; Schut et al., 2001; Talli and de Silva, 1992; Townsend et al., 1999).

Understanding the avoidant behaviors that are associated with GAD has diagnostic, theoretical, and clinical implications.

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http://dx.doi.org/10.1016/j.jad.2016.06.020
0165-0327/

Maladaptive avoidance behaviors are used to define all DSM-5 anxiety disorder classifications except GAD. Behavioral criteria were proposed for the DSM-5 GAD classification, and included marked (a) avoidance of potentially negative events or activities, (b) preparing for possible negative outcomes, (c) procrastination, and (d) reassurance-seeking (Andrews et al., 2010). These proposals were not incorporated into DSM-5. This may be partly due to the limited systematic investigation in this area and the lack of validated measures of the avoidant behaviors that are associated with GAD.

Contemporary cognitive theories of GAD implicate the central importance of cognitive avoidance in the maintenance of the disorder (Borkovec, et al., 2004; Dugas et al., 1998; Newman and Llera, 2011; Wells, 1999). Cognitive avoidance involves avoiding distressing internal experiences (e.g., thoughts and emotions) via mental strategies such as thought suppression and thought substitution (Sexton and Dugas, 2008). One of the seminal models in this area, the Avoidance Theory of Worry and GAD (Borkovec et al., 2004), contends that worry itself is a form of cognitive avoidance that inhibits adaptive processing of internal experiences like mental images, somatic arousal and emotions. Multiple measures have been developed to assess cognitive avoidance (e.g., Muris et al., 1996; Ottenbreit and Dobson, 2004; Sexton and Dugas, 2008; Wells and Davies, 1994). However, relatively little research has examined the importance and measurement of behavioral avoidance in GAD; that is, the use of observable behaviors to manage distress. It is possible that behavioral avoidance is related to cognitive avoidance, and may also contribute to the maintenance of GAD. For instance, in the Intolerance of Uncertainty Model of GAD (Dugas et al., 1998), behavioral avoidance is thought to prevent the disconfirmation of dysfunctional beliefs associated with uncertainty which are theorized to maintain GAD. Robichaud (2013) gives the example of an individual with GAD who avoids new restaurants and consequently fails to discover that his worries are unrealistic, uncertainty is not dangerous, and that he can cope with uncertainty. Psychological therapies, such as Metacognitive Therapy and Intolerance of Uncertainty Therapy aim to reduce avoidant behaviors (e.g., Andrews et al., 2016; Robichaud, 2013; Wells, 1995; 1999). Yet the comparative importance of behavioral avoidance in maintaining GAD is unclear and requires closer examination. For instance, Beesdo-Baum et al. (2012) found that avoidance and safety behaviors impact treatment response, with higher post-treatment avoidance predictive of greater worry at follow-up. Another study found that while cognitive avoidance predicted subsequent rumination, worry and sadness, behavioral avoidance was only predictive of subsequent anxiety (Dickson et al., 2012). The development of a measure of the behavioral avoidance in GAD could facilitate research and inform future diagnostic classifications, and current theoretical models and therapies for GAD.

Most existing measures of avoidant behaviors assess the behavioral features of other disorders, such as compulsive behaviors in obsessive compulsive disorder (OCD, Schut et al., 2001; Tallis and de Silva, 1992; Townsend et al., 1999), safety behaviors associated with social anxiety disorder (Cuming et al., 2009), and the avoidance of social situations and situations associated with potential failure in the context of depression (Ottenbreit and Dobson, 2004). Other measures assess a limited range of behaviors, like reassurance-seeking (Cougle et al., 2012; Kobori and Salkovskis, 2013; Rector et al., 2011; Speckens et al., 2000). Beesdo-Baum et al. (2012) provide the most comprehensive assessment of avoidant behaviors that are associated with GAD. This group compiled an item pool of avoidant behaviors based on a review of the literature and examined changes in these behaviors across two psychological treatments. Preliminary evidence of the internal consistency, temporal stability and construct validity of the measure was reported. While providing a significant advance in the assessment of the behaviors associated with GAD, the study was limited in the following ways. The sample was relatively small (n=56 GAD patients, n=33 healthy controls) and factor analyses were not conducted. The breadth of avoidance symptoms was limited (e.g., checking behaviors were not measured) and almost half of the items indexed cognitive avoidance. Consistent with the RCT design of the study, avoidance symptoms were assessed as present during the "past week". However, a measure that assessed individuals' "typical" avoidant behaviors could complement the current gold standard measure of worry, the Penn State Worry Questionnaire (Meyer et al., 1990), which assesses typical or trait worry. A more comprehensive and psychometrically-sound measure of behavioral avoidance may also assist researchers and health professionals to address important questions regarding the diagnostic importance of such behaviors and how these behaviors contribute to the development and maintenance of GAD.

Given the diagnostic, theoretical, and clinical importance of delineating the nature of behavioral avoidance in GAD, this study describes the development and initial psychometric evaluation of a self-report measure of the avoidant behaviors that are associated with GAD: the Worry Behaviors Inventory (WBI). To complement the extant research, we sought to develop a comprehensive measure of individuals' typical of observable behaviors (both subtle safety behaviors and more overt avoidance). Cognitive avoidance was not considered, as multiple measures already exist. To extend the literature, items were developed in consultation with experienced clinicians and in reference to (i) current and previous DSM GAD classifications and behavioral criteria proposed for DSM-5 (Andrews et al., 2010); (ii) contemporary cognitive and behavioral theoretical models of GAD; and (iii) studies that have examined avoidant behaviors in GAD (e.g., reassurance-seeking and checking, Beesdo-Baum et al., 2012; Coleman et al., 2011; Schut et al., 2001). We evaluated the factor structure and convergent/divergent validity of the scale in a large treatment-seeking sample. We predicted that the structure of the WBI would reflect the four behavioral criteria proposed for DSM-5; demonstrate significant positive associations with GAD symptom severity; and discriminate between patients with and without a probable diagnosis of GAD. We also hypothesized that the WBI would be positively correlated with depressive, social phobia and panic symptom severity because of the risk factors and clinical correlates that are shared by these disorders (Goldberg et al., 2009), but that these associations would be weaker than the correlations between the WBI and GAD severity. In further support of divergent validity, we expected that the WBI would not simply be a measure of functional impairment, demonstrating modest correlations with a measure of general disability.

2. Methods

2.1. Item selection

The initial item pool for the WBI was developed in three steps. First, AM identified types of behavioral avoidance by reviewing the literature on the diagnostic, theoretical and clinical importance of these behaviors to GAD. This review identified 93 behaviors. Of these, 67 behaviors were deemed to be replicates. For example, 'Do you find yourself often asking others whether everything will be alright?' from Cougle et al. (2012), 'Repeatedly seeking reassurance due to worries' from Andrews et al. (2010), and 'I often seek reassurance from my friends and/or romantic partners regarding their feelings for me' from Coleman et al. (2011), were all deemed to assess reassurance-seeking. The 26 unique avoidant behaviors were selected as the base item pool for the WBI. During item