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Penn State Worry Questionnaire – 10: A new tool for measurement-based care

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ABSTRACT

The Penn State Worry Questionnaire – Past Week (PSWQ-PW) is an adaptation of the widely used Penn State Worry Questionnaire, measuring pathological worry weekly. However, it contains problematic negatively worded items and has not been validated in a large sample yet. To meet the needs of measurement-based care (MBC), we developed a shortened version (PSWQ-10) based on the PSWQ-PW, retaining only positively worded items, and examined its psychometric properties and clinical utility. Patients with Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), and other anxiety disorders completed the PSWQ-10 and other instruments during routine evaluation in an academic anxiety clinic. A second cohort from a perinatal clinic was evaluated similarly. The PSWQ-10 displayed excellent internal consistency, convergent and discriminant validity, and criterion group validity. Patients with GAD scored significantly higher than those with other anxiety disorders but did not differ from those with MDD. The PSWQ-10 showed sensitivity to change over time and demonstrated excellent psychometric properties in the perinatal population. The PSWQ-10 is a reliable, valid, efficient, and straightforward worry-focused instrument that can be readily used in MBC and help clinicians objectively measure worry as a treatment outcome in broad clinical populations.

1. Introduction

Worry is the cardinal feature of Generalized Anxiety Disorder (GAD) and is considered a unifying process across all anxiety disorders (Barlow, 2002; Olatunji et al., 2010). Pathological worry has also been implicated in mood disorders, insomnia, and health anxiety (Purdon and Harrington, 2006). For over 20 years, the Penn State Worry Questionnaire (PSWQ) has been the most frequently used measure of pathological worry for both research and clinical assessment purposes. It is a self-report measure of pathological worry and GAD that is widely used due to its high internal consistency and good convergent and discriminant validity in both college students and clinical samples. It successfully distinguishes GAD from other anxiety disorder groups, including Post-Traumatic Stress Disorder (PTSD; Brown et al., 1992; Meyer et al., 1990). It is sensitive to clinical change after treatment as well (Meyer et al., 1990). However, the PSWQ was designed to measure worry as a trait, not a state, and was not originally structured for frequent use to track change over the course of treatment.

Measurement-based care (MBC) has been shown to result in superior client outcomes and facilitation of collaborative care among providers, and it may enhance clinical judgment and accuracy of diagnoses (Scott and Lewis, 2015). Ongoing quantitative tracking of treatment course and outcome is increasingly important for early identification of failure to improve, so therapies can be changed, and to identify sudden gains, which can predict positive outcomes and help identify effective therapy ingredients associated with improvement (Deschenes and Dugas, 2013; Lambert, 2007; Tang and DeRubeis, 1999). Several valid and reliable self-report measures are now being used to achieve these ends. Examples include the Beck Depression Inventory (BDI; Beck et al., 1961), the Patient Health Questionnaire depression scale (PHQ-9; Kroenke et al., 2001), and the Generalized Anxiety Disorder 7-item scale (GAD-7; Spitzer et al., 2006). These questionnaires all assess patients' symptoms during the past week or two and are thus useful for tracking treatment effects as well as for screening. Given

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that worry is the core symptom of GAD and is present in many other disorders as well, it could be useful to develop a measure in similar fashion so worry could be targeted at specifically in MBC.

Indeed, some promising measures have been developed, including the Penn State Worry Questionnaire-Abbreviated (PSWQ-A; Hopko et al., 2003), the 3-item ultra brief PSWQ (Berle et al., 2011), the Penn State Worry Questionnaire-Past Day (PSWQ-PD; Joos et al., 2012), the Penn State Worry Questionnaire – Past Week (PSWQ-PW; Stöber and Bittencourt, 1998), and the Brief Measure of Worry Severity (BMWS; Gladstone et al., 2005). However, the PSWQ-A and the 3-item PSWQ are both trait measures not adapted to monitor weekly treatment progress. There were no data on the criterion group validity of the PSWQ-PD due to a limited sample size. The BMWS does not assess worry on a weekly basis either.

The closest to ideal measure currently available for assessing worry on a weekly basis is the PSWQ-PW, which uses 15 of the original 16 items (deleting item 12 – "I've been a worrier all my life") but changing them to past tense and focusing on past week only. The PSWQ-PW demonstrated high internal consistency ($\alpha=0.91$) and good convergent validity in a small ($N=28$) high-worrier community sample and was sensitive to treatment-induced change in level of pathological worry (Stöber and Bittencourt, 1998). However, the PSWQ-PW has not yet been validated in a large broad clinical population, and 23 of the 28 participants were women, thus limiting the generalizability of the findings. It also suffers from a problem that has plagued the original PSWQ. Most of its items are positively worded (e.g., "My worries overwhelm me") but five are negatively worded (e.g., "I do not tend to worry about things"). Studies have shown that the negatively worded items compromised the original PSWQ's psychometric properties and may constitute a methodological artifact (Brown, 2003; Castillo et al., 2010; Dear et al., 2011; Fresco et al., 2002; Gana et al., 2002; Hazlett-Stevens et al., 2004; Hopko et al., 2003; Meloni and Gana, 2001; Pallesen et al., 2006; Zhong et al., 2009). Additionally, negatively worded items are difficult to process, especially for people of higher age or lower levels of education (Rodebaugh et al., 2011; Rosenthal, 1980). Consequently, a revision of the PSWQ to only include, or at least only score, the positively worded items has been proposed (Castillo et al., 2010; Fresco et al., 2002; Hazlett-Stevens et al., 2004; van der Heiden et al., 2009).

In order for MBC to work on a large scale in active high-volume clinics, we need a measure of worry as short, intuitive, valid, and sensitive to changes as possible. In view of lack of such an instrument, we developed a 10-item positively worded version of the PSWQ-PW and assessed it in a broad patient population. We tested the following hypotheses in three separate studies: (1) The PSWQ-10 will have good internal consistency, convergent and discriminant validity, and criterion group validity; (2) The PSWQ-10 will be sensitive to treatment-induced changes from session to session; (3) The PSWQ-10 will be generalizable to different clinical populations and maintain good psychometric properties. As a result, we were also able to provide normative data on the PSWQ-10 for a broad range of diagnostic groups.

2. Study 1

2.1. Participants

The sample consisted of 919 patients (570 females, 316 males, and 33 unknown) who sought treatment at an outpatient anxiety disorder clinic in a university department of psychiatry during 2008–2012. Average age was 35.13 (S.D.=13.68). They identified with the following races: Caucasian (86.5%), African American (4.0%), Asian (2.0%), Hispanic or Latino (1.1%), Native American (0.1%), Multiracial or others (1.3%), and 5.0% not reported. The most common principal diagnoses based on clinical interviews and team consensus were as follows: GAD (20.2%), Panic Disorder with and without Agoraphobia (14.9%), Obsessive Compulsive Disorder (OCD; 12.5%), Social Anxiety Disorder (SAD; 10.1%), MDD (9.6%), Anxiety Disorder NOS (9.2%), PTSD (5.2%), specific phobias (3.7%), Adjustment Disorder (2.2%), and Depression NOS (1.7%). In a separate study within this anxiety disorders clinic, diagnoses produced by clinical interviews and team consensus were twice validated against SCID interviews administered by highly trained SCID interviewers (unpublished data), and an excellent concurrence (~90%) was found between clinical and SCID determined diagnoses. Patients completed the questionnaires used in current study as part of their pretreatment assessments, and have signed an agreement for these data to be used for research purpose.

2.2. Measures

2.2.1. Penn State Worry Questionnaire-10 item version (PSWQ-10) and Penn State Worry Questionnaire-Past Week (PSWQ-PW)

The PSWQ-PW is an adapted version of the original 16-item PSWQ that focused on worry during the past week and deleted the item "I have been a worrier all my life" (Stöber and Bittencourt, 1998). Items are rated on a Likert scale from 0 (never) to 6 (almost always). The total score can range from 0 to 90. The scale demonstrated high internal consistency ($\alpha=0.91$) and good convergent validity. The PSWQ-10 is an abbreviated version of the PSWQ-PW. The difference between the two is that the PSWQ-10 does not contain the negatively worded items (items 1, 3, 8, 10, and 11) of the PSWQ-PW. A total of 900 participants filled out the complete PSWQ-PW at their visits and we obtained the PSWQ-10 scores by scoring the corresponding 10 items only. Another 19 participants answered the PSWQ-10 only.

The following measures were used to test the convergent validity of the PSWQ-10:

2.2.2. Generalized Anxiety Disorder Scale (GAD-7)

The GAD-7 is a 7-item self-report scale for identifying probable cases of GAD and severity of GAD. Items are scored on a Likert scale from 0 (not at all) to 3 (nearly every day). The scale demonstrated good validity and excellent internal consistency ($\alpha=0.92$) (Spitzer et al., 2006).

2.2.3. Zung Self-Rating Anxiety Scale (SAS)

The SAS is a 20-item self-report measure assessing symptoms of anxiety disorders. Items are rated on a Likert-type scale from 1 (none or a little of the time) to 4 (most or all of the time). The scale showed adequate validity and good internal consistency ($\alpha=0.69$–0.81) (Jegede, 1977; Zung, 1971).

2.2.4. Anxiety Sensitivity Index (ASI)

The ASI is a 16-item self-report questionnaire measuring fear of anxiety-related symptoms. Items are rated on a Likert scale from 0 (very little) to 4 (very much). The scale showed satisfactory validity and good to excellent internal consistency ($\alpha=0.82$–0.91) (Peterson and Heilbronner, 1987; Peterson and Reiss, 1993; Reiss et al., 1986).

2.2.5. Patient Health Questionnaire (PHQ-9)

The PHQ-9 is a 9-item self-report measure assessing the severity of depression. Items are scored on a Likert scale from 0 (not at all) to 3 (nearly every day). The scale demonstrated good validity and excellent internal consistency ($\alpha=0.86$–0.89) (Kroenke et al., 2001).