Psychometric Characteristics of the Penn State Worry Questionnaire in an Argentinean Sample: A Cross-Cultural Contribution

Ricardo Rodríguez-Biglieri[1] and Giselle Lorena Vetere[2]

[1]Universidad de Buenos Aires (Argentina)
[2]Hospital Dr. Cosme Argerich (Argentina)

Although studies in several populations have provided support for *Penn State Worry Questionnaire* (PSQW) reliability and validity, factor analysis studies carried out on different populations show divergent results. The aim of this article is to contribute with the cross-cultural literature on PSWQ. This report describes two studies examining the psychometric characteristics of a revised Argentinean version of the PSWQ. In the first study, items of original PSWQ were translated into Spanish and then back-translated into English. Then, in order to examine its reliability and factorial structure, the instrument was completed by 400 community participants. The second study included two groups of participants as follows: patients with generalized anxiety disorder (GAD), and patients with other anxiety disorders (AC). Results revealed appropriated test-retest reliability over a four-week period, high internal consistency, and good convergent and discriminant validity for PSWQ. In concordance with some results reported in previous studies, a single factorial structure was confirmed for the Argentinean version of PSWQ. By the other hand, a receiver operating characteristic analysis was made to evaluate the ability of PSWQ to discriminate GAD from individuals with others anxiety disorders. A total score of 63 simultaneously optimized sensitivity and specificity in discriminating GAD patients from patients with others anxiety disorders.
Keywords: Penn State Worry Questionnaire, reliability, validity, factor structure, sensitivity, specificity.

Aunque estudios conducidos en diversas poblaciones han establecido que el Penn State Worry Questionnaire (PSQW) posee adecuados índices de confiabilidad y validez, los análisis sobre su estructura factorial han arrojado resultados divergentes. El objetivo del presente artículo es contribuir con la literatura transcultural del PSWQ. Con dicho fin se describen dos estudios los cuales examinan las características psicométricas de una versión Argentina revisada del PSWQ. En el primer estudio los ítems originales del PSWQ fueron traducidos al español y luego traducidos nuevamente al inglés. Posteriormente, con la finalidad de examinar la confiabilidad y estructura factorial del instrumento, el mismo fue administrado a 400 participantes. El segundo estudio incluyó un grupo de pacientes con Trastorno de Ansiedad Generalizada (TAG) y otro grupo conformado por pacientes con otros cuadros de ansiedad (CA). Los resultados registraron adecuados índices de confiabilidad test-retest para un período de cuatro semanas, altos índices de consistencia interna, y buenos índices sobre la validez convergente y discriminante del instrumento. En concordancia con resultados informados en algunos estudios previos, una solución unifactorial fue registrada para la versión Argentina del PSWQ. Por otro lado, se efectuó un análisis de las curvas de operación característica del receptor con la finalidad de evaluar la capacidad del PSWQ para diferenciar pacientes con TAG de aquellos con otros cuadros de ansiedad. Un puntaje total de 63 optimizó simultáneamente sensibilidad y especificidad para la diferenciación de pacientes con TAG de pacientes con otros cuadros de ansiedad.
Palabras clave: Penn State Worry Questionnaire, confiabilidad, validez, estructura factorial, sensibilidad, especificidad.

Correspondence concerning this article should be addressed to Ricardo Rodríguez-Biglieri. Facultad de Psicología. Departamento de Psicología Clínica y Psicoterapia. Universidad de Buenos Aires. Av. Corrientes 5239, 11° D. Código Postal: C1414AJR. Buenos Aires. (Argentina). Phone: +54-011-4856-6506; Fax: +54-011-42445025. E-mail: rodriguezbiglieri@psi.uba.ar

Despite the fact that worry is a common phenomenon (Davey, 1994), it has been mainly associated to many disorders such as depression, eating disorders, hypochondria and every anxiety disorder (Barlow, 1988; Borkovec, 1994; Borkovec, Shadick, & Hopkins, 1991; Chelminski & Zimmerman, 2003; Molina, Borkovec, Peasley, & Person, 1998; Sassaroli et al., 2005; Starcevic et al., 2007; Vetere & Rodríguez-Biglieri, 2005) . However, chronic, excessive and uncontrollable worry is the main feature of Generalized Anxiety Disorder (GAD) just as it is described in the *Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM—IV]*; American Psychiatric Association, 1994).

There are several theories about the characteristics of pathological worry (Davey & Wells, 2006; Portman, 2009). According to one of the most influential approaches, worrisome thinking is characterized by a repeated rehearsal of potential negative outcomes and their consequences (Borkovec, Alcaine, & Behar, 2004). Therefore, worry would constitute an attempt to prevent or prepare for future negative events. From this point of view, worry is a cognitive avoidance response to danger perception (Sibrava & Borkovec, 2006). Such cognitive avoidance interferes with the emotional processing of threat-related material and therefore maintains a tendency for worrying.

The pathological form of worry on GAD patients has been associated with high levels of impairment on quality of life and normal functioning. The conceptualization of excessive worry as the hallmark of GAD has led to improved identification and, in some cases, improved treatment outcomes (Covin, Ouimet, Seeds, & Dozois, 2008; Dugas & Ladouceur, 1998; Vetere & Rodríguez Biglieri, 2006).

The most frequently used measurement to assess pathological worry in both clinical and non-clinical populations is the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borcovec, 1990). The PSWQ is a 16-item self-report questionnaire that assesses trait symptoms of pathological worry. It was developed to evaluate an individual's disposition to worry, as well as the frequency, the excess or intensity of worry, and the tendency for worry to be generalized and not restricted to one or a small number of situations. Each item is rated on a Likert scale from 1 (not at all typical of me) to 5 (very typical of me). Eleven items are positively scored, while the remaining five items require reverse scoring. The total score is obtained adding all item scores, the higher ones representing higher levels of pathological worry. PSWQ has been shown to have good internal consistency with samples consisting of older adults with GAD (Beck, Stanley, & Zebb, 1995; Hopko, et al., 2003; Webb et al., 2008), children (Pestle, Chorpita, & Schiffmann, 2008), community subjects (Brown, Antony, & Barlow, 1992; Olatunji , Schottenbauer, Rodriguez, Glass, & Arnkoff, 2007), and undergraduates (Carter et al., 2005; Meyer

et al., 1990). Cronbach's alphas ranged from .86 to .93 for anxiety disorder patients and from .87 to .95 for community samples. It has also demonstrated good test–retest reliability over 8–10 weeks in university samples (Meyer et al., 1990).

The PSWQ has shown highly correlations with other worry questionnaire measures, including the Worry Domains Questionnaire (Tallis, Eysenck, & Mathews, 1992) and the Student Worry Scale (Davey, Hampton, Farrell, & Davidson, 1992). Although studies in several populations have provided support for PSQW reliability and validity (Beck, Stanley, & Zebb, 1995; Brown, Antony, & Barlow, 1992; Molina & Borkovec, 1994; Stöber, 1995; van Rijsoort, Emmelkamp, & Vervaeke, 1999), factor analysis studies show divergent results. Some researchers have concluded that the PSWQ is a unidimensional instrument (Brown, 2003; Gana, Martin, Canouet, Trouillet, & Meloni, 2002; Ladouceur, Freeston, Rheaume, Letarte, & Dumont, 1992), while other studies have arrived to two-factor solutions (Fresco, Heimberg, Mennin, & Turk, 2002; Olatunji et al., 2007).

Brown et al. (1992) reported a single factorial solution for the PSWQ scores in anxiety disorder patients (n = 436). They found two factors with eigenvalues higher than 1.0, which accounted for 51.1% and 7.7% of the variance, respectively. Nevertheless, Brown et al. chose a unifactorial solution based on an examination of a scree plot and the strong internal consistency of the 16-item PSWQ (α = .93). Later, using a Confirmatory Factor Analysis (CFA) Brown (2003) demonstrated the superiority of the one-factor model with method effect. He asserted that the five reverse-direction PSWQ items does not represent a separate latent construct, but rather, contain an underlying factor of negative wording method. This result has been recently replicated by Lim Kim, Lee and Kwon (2008) in a sample of Korean college students. In the same way Haslett-Stevens, Ullman, and Craske, (2004) conclude that the five reverse-scored items do not make up a separate worry construct.

In a Dutch version of the PSWQ, Van Rijsoort et al. (1999) also retained a 16-item unifactorial solution because the high internal consistency of the measure in their sample (α = .88) and the widespread acceptance of the unifactorial solution of the instrument, although data examination suggested a two-factor solution (Factor 1 accounted for 39.6% of the variance and had an internal consistency of .92, while Factor 2 accounted for 13.6% of the variance and had a lower internal consistency than the previous factor). Stöber (1995) analyzed the psychometric properties of a German translation of the PSWQ administered to a sample composed by 224 German college students and community controls. He retained a two-factor solution, which accounted for 36.5% and 10.7% of the variance, respectively. This factorial solution is similar to the one reported by Meloni and Gana (2001) in an Italian version of the PSWQ. Likewise, Fresco et al. (2002) carried out a CFA of the PSWQ scores

for a sample of 788 undergraduate students. Cronbach's alpha for the total PSWQ scores was α = .90. Fresco et al. (2002) also retained a two-factor solution, labelled ´Worry Engagement´, composed of 11 positively worded items (α = .94), and ´Absence of Worry´, comprised of 5 reverse-scored items (α = .70). Similar factorial solutions were reached by Yilmaz, Gençöz, and Wells (2008) in a Turkish adaptation of the instrument carried out in a non-clinical sample, and by Zhong, Wang, Li, and Liu (2009) in a Chinese version of the PSWQ administered to a sample composed by Chinese college students (*n* = 1243).

By the other hand, Hopko et al. (2003) conducted a CFA in a sample composed by older adults and conclude that data fit poorly with established single and two-factor models. Later, Carter et al (2005) conducted an EFA and reported a three-factor solution for the PSWQ scores in a sample composed by African-American college students from the USA (*n* = 181). These results and the tree-factor solution proposed for the Norwegian version of the PSWQ (Pallesen, Nordhus, Carlstedt, Thayer, & Johnsen, 2006) have added more polemic on the topic.

Several investigations have been carried out on Spanish speaking populations. Novy, Stanley, Averill, and Daza (2001) administered English and Spanish versions of the PSWQ to a sample composed by 98 bilingual participants with anxiety disorders. Coefficient alphas were excellent (α = .89 and α = .90 for English and Spanish versions respectively). Evidence of god convergent and discriminant validity was found for both versions. However, the authors did not perform any analysis to evaluate factorial structure of the Spanish version. Later, the utility of this Spanish version of PSWQ to predict GAD severity was questioned (Hirai, Stanley, & Novy, 2006).

Nuevo, Montorio, and Ruiz (2002) have developed a Spanish version of PSWQ for older adults. In this version, the five reverse-scored items from original English instrument were positively worded**.** The instrument has shown a unifactorial structure and it has been highly correlated with other anxiety measures. Furthermore, the instrument has also demonstrated high internal consistency (Cronbach's α = .95) and good convergent and discriminant validity.

Recently, Sandín-Ferrero, Chorot-Raso, Valiente-García, and Lostao-Unzu, (2009) analyzed the psychometric properties of a Spanish translation of the PSWQ administered to a large non-clinical sample (*n* = 1052) from Spain. Exploratory and confirmatory factor analyses of the PSWQ indicated a structure of two correlated factors consistent with the dimensions ´worry engagement´ and ´absence of worry´ reported by Fresco et al. (2002).

Considering that exploratory factor analyses revealed similar solutions, even though investigators differ with regard to the retention of factors, it will be of interest to examine the psychometric features of an Argentinean version of the PSWQ, in order to compare properties across different populations.

In turn, PSWQ is recommended as a measurement to evaluate therapeutic changes on worry, and may be useful as a screening tool to detect pathological worry. Patients with GAD were found to score significantly higher on the PSWQ than patients with other DSM-IV anxiety disorders (APA, 1994) and community control subjects; therefore, the measure has also demonstrated strong sensitivity (*SE*) and specificity (*SP*) in discriminating individuals with GAD from those without GAD.

Nuevo et al. (2002) evaluated the suitability of a Spanish version of PSWQ as screening instrument for GAD in an older adults sample from Spain. When optimizing sensitivity (cut-score = 56) all GAD patients of the sample (100%) was correctly classified (*SE* = 1.0; *SP* = .889). By the other hand, when optimizing specificity (cut-score = 60) 100% of the non-GAD sample and 85.7% of the GAD patients were correctly classified.

In another study, Fresco, Mennin, Heimberg, and Turk (2003) carried out a receiver operating characteristic (ROC) analysis to examine the ability of the PSWQ to correctly differentiate patients with either primary or secondary GAD (*n* = 50) from social anxiety patients (*n* = 114). When sensitivity and specificity were both optimized (cut score = 65) 63.41% of a total sample was correctly classified (Area Under the Curve, *AUC* = .74; *p* < .00001; *SE* = .64; *SP* = .64).

Behar, Alcaine, Zuellig, and Borkovec (2003) concluded that a PSWQ cut-score of 45 provided the best balance of sensitivity (.99) and specificity (.98) on a sample composed of 159 GAD patients and 113 from the non-anxious control group. Afterwards, they broadened the study using a university student sample (*n* = 2449) and determined that a PSWQ score of 62 was the best cut score to identify individuals with GAD (*SE* = .86; *SP* = .75). Nevertheless, the AUC and other statistics were not reported by the authors.

Gonzalez, Mata, Lavie, and Resler (2007) carried out a ROC analysis to examine the ability of a Spanish version of the PSWQ to correctly differentiate patients with GAD from a sample composed by 100 outpatients from a Psychiatry Department of a Hospital in Caracas, Venezuela. They concluded that a PSWQ cut-score of 60 provided the best balance of sensitivity (.769) and specificity (.66). Unfortunately, some statistics data from ROC analysis were not provided by the authors.

In 2008 Webb et al. carried out an investigation evaluating the utility of PSWQ for identify GAD in older medical patients (*n* = 191). They performed a ROC analysis and found that a PSWQ cut-score of 50 provided the strongest prediction of GAD (*AUC* = .81; *p* < .001; 95% confidence interval (CI) ranged from .75 to .87; *SE* = .76; *SP* = .75; 75% of a total sample was correctly classified).

By the other hand, a recently study found that the use of PSWQ as a screening instrument for GAD was not meaningful (Salzer, Stiller, Tacke-Pook, Jacobi, & Leibing,

2009). The investigation was carried out in a German inpatient sample (*n* = 237). When both sensitivity and specificity were optimized (cut score = 54) only 54.4% of the patients correctly classified (AUC = .67; *p* = .02; *SE* = .58; *SP* = .60).

Given the clinical utility of the PSWQ and the fact that several studies have provided evidence of the reliability and validity of the instrument, and taking into account the need of cross-cultural studies of individual differences and self-report measures, the aim of this paper is to contribute with the cross-cultural literature on worry and PSWQ. This article describes two studies addressing the following goals: to develop an Argentinean version of the PSWQ, to examine its psychometric characteristics and to evaluate its capacity as a screening tool to identify GAD patients.

STUDY 1

In the first study, the objectives were: (a) to develop an Argentinean version of the Penn State Worry Questionnaire (Meyer et al., 1990); b) to examine its reliability and factorial structure.

Method

Subjects

Four hundred subjects from the city of Buenos Aires, Argentina, were recruited by the authors. The sample consisted of 220 female (55%) and 180 male subjects (45%). The occupational status of the sample was as follows: teachers, students, community service organization members, unemployed people, and non-governmental employees (i.e. self-employed). Participants ranged from 21 to 60 years of age with a mean of 34.5 years (*SD* = 7.14). Of the total sample, 225 participants (56.25%) were married, 156 single (39%), and 19 (4.75%) were widowed. The participants were mostly educated, 38% with complete university education, 23% with some university education, and 39% with a secondary education or less.

All subjects received a summary of all the research procedures and were asked for their written consent in order to participate in the study.

To evaluate test-retest reliability a small subsample from the total sample was selected for re-assessment. The selection was made randomly through a computer program designed to generate 50 random protocol numbers. 35 out of 50 selected subjects were available for the re-assessment point at four weeks. This subsample was composed of 20 woman and 15 men, aged 21 to 59 years (*M* = 32; *SD* = 6.9).

Most statistical analyses were performed using SPSS version 17.0 for Windows (SPSS Inc, 2008). Parallel analysis was conducted in ViSta (The Visual Statistics System; Young, 2003).

Translation Procedure

The PSWQ (Meyer, Miller, Metzger, & Borkovec, 1990) was first translated into Spanish by the authors. Then, both versions of PSWQ, the original and the translated one, were given to three independent bilingual judges who were asked to compare versions in order to ensure language equivalences. The revised Spanish version was given to 50 people to complete and report any problems in understanding the PSWQ items. The translated copy of the PSWQ was subsequently translated back into English (by English teachers), as suggested by Brislin, Lonner, and Thorndike (1973). The original and the back-translated versions were compared to minimize the differences between them. Finally, the four hundred participants completed the PSWQ.

Results

Factor Analysis

In the absence of previous studies carried out in our population we decide to conduct an exploratory rather than confirmatory factor analyses.

Firstly, we carried out a preliminary analysis to find out whether the matrix used in this study was appropriate for factor analysis. We examined the determinant of the correlation matrix to see if the variables correlated too highly. The value of the determinant was .000410 (greater than the necessary value of .00001) indicating that multicollinearity was not a problem. The diagonals of the anti-image correlation matrix were all over .90, supporting the inclusion of each item in the factor analysis. The Kaiser-Meyer-Olkin index of sampling adequacy was .95, and the Bartlett's test of sphericity was significant (*df* = 120, *p* < .001), indicating that the correlation matrix was suitable for factor analysis.

In order to analyze the factor structure of the PSWQ, an exploratory factor analysis was conducted. Factor analysis was performed using principal axis factoring method. One factor with eigenvalue greater than 1 (9.58) was identified. The one factor accounted for 59.8% of the variance. Table 1 shows the one-factor pattern matrix for the items. Eigenvalues for the second and third factors were .79 and .68 accounting for 4.3% and 3.6% of the variance respectively. Later, to explore different factorial solutions and factors loadings the analyses were repeated but this time determining a priori the numbers of factors to extract. According to factorial solutions reported in the literature on PSWQ a two-factor and three-factor solutions were examined. In both cases all items loaded highly (>.30) only on the first factor extracted, suggesting that one-factor solution should be retained.

To determine the optimal number of factors to retain a parallel analysis (Horn, 1965) was performed. Only the
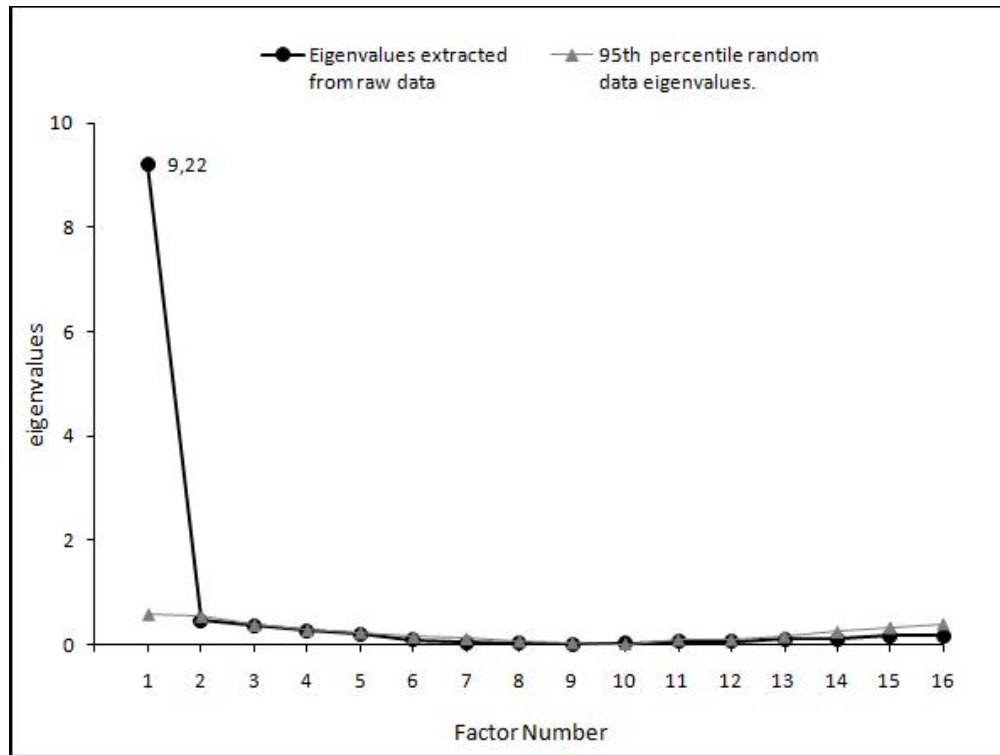
Figure 1. Superimposed scree plots for correlation matrices of random and real data sets.

first eigenvalue extracted from data (9.22) are larger than the corresponding 95th percentile random data eigenvalue (.49), suggesting that this factor should be retained for interpretation. Figure 1 represent a graphical superposition of scree plots based on correlation matrices of random and real data. One eigenvalue fall before the point at which the two plots cross, indicating that the one-factor solution should be retained.

This single factor solution is similar to the ones retained in others studies (Brown, Antony, & Barlow, 1992; Gana et al., 2002; Ladouceur et al., 1992; Meyer et al., 1990). Although in some studies the five reverse scored items (items 1, 3, 8, 10 and 11) have been found to account for an independent factor labelled ´Absence of Worry´, our results show that, on the contrary, all items loaded highly on one single factor (factor loadings range from 0.641 to 0.859). Thus, the results of the factor analysis suggest that all items measure the same concept, labelled ´Worry Engagement´, and confirm that it is appropriate to calculate a total score by adding all items.

Descriptive Statistics and Reliability

Means and Standard Deviations of participant's scores in the PSWQ are shown in Table 2 itemized by gender. It is noteworthy that the mean scores are very similar to those reported in several studies conducted on non-clinical or community samples (Meyer et al., 1990; Startup & Erickson, 2006; Yilmaz et al., 2008).

The frequency distributions of item-scores closely approximate the normal distribution. Responses to all items showed an adequate dispersion. For the entire PSWQ, the corrected item-total correlations ranged from .62 to .80, indicating that all items were acceptable according to standard parameters. The internal consistency of the instrument was high (Cronbach's α = .94). The test-retest reliability was performed computing the Pearson correlation for a 4-week interval. Correlations ranged from .82 to .88 for male and female subsamples, respectively (total sample = .86), indicating that the PSWQ shows stability over said period of time. No significant mean differences were found when a paired sample *t*-test was carried out to test for differences in the PSWQ scores over the test-retest interval.

On the other hand, an independent samples *t*-test was performed to test for any differences between men and women on the PSWQ results. This comparison showed significant differences between scores, with significantly higher scores for women than men (t = -5.56; df = 398; $p < .001$). The effect sizes were calculated using Cohen's *d* to determine the standardized magnitude of this difference. The effect size value (d = .60) indicated that the magnitude for the significant differences between women and men are medium, according to the standard Cohen's *d* interpretation (Cohen, 1988).

Table 1

Factor loadings of the Penn State Worry Questionnaire items

Items	Loading on factor
1. If I don't have enough time to do everything I don't worry about it. (*Si no tengo suficiente tiempo para hacer todo, no me preocupo por ello*)	.690
2. My worries overwhelm me. (*Mis preocupaciones me agobian*)	.801
3. I don't tend to worry about things. (*Casi no me preocupo por las cosas*)	.730
4. Many situations make me worry. (*Me preocupan muchas situaciones*)	.821
5. I know I shouldn't worry about things, but I just can't help it. (*Sé que no debería estar tan preocupado por las cosas, pero no puedo hacer nada por evitarlo*)	.751
6. When I am under pressure I worry a lot. (*Cuando estoy bajo estados de tensión tiendo a preocuparme*)	.756
7. I am always worrying about something. (*Siempre estoy preocupado por algo*)	.855
8. I find it easy to dismiss worrisome thoughts. (*Me resulta fácil eliminar mis preocupaciones*)	.750
9. As soon as I finish one task, I start to worry about everything else I have to do. (*Tan pronto como termino una tarea, enseguida empiezo a preocuparme sobre alguna otra cosa que debo hacer*)	.715
10. I never worry about anything. (*Nunca me preocupo por nada*)	.641
11. When there is nothing more I can do about a concern, I don't worry about it anymore. (*Cuando no puedo hacer nada más sobre algún asunto, no vuelvo a preocuparme más de él*)	.700
12. I've been a worrier all my life. (*Toda mi vida he sido una persona que se preocupa demasiado*)	.753
13. I notice that I have been worrying about things. (*Noto que he estado preocupado por varias cosas*)	.768
14. Once I start worrying, I can't stop. (*Una vez que comienzo a preocuparme no puedo parar*)	.853
15. I worry all the time. (*Estoy constantemente preocupado*)	.859
16. I worry about projects until they are all done. (*Cuando tengo algún proyecto no dejo de preocuparme hasta haberlo terminado*)	.680

Table 2

Mean scores and standard deviations of the PSWQ

Gender	*n*	*M*	*SD*
Male	180	38.58	10.53
Female	220	44.92	10.51
Total	400	42.97	10.90

STUDY 2

The objectives of the second study were: (a) to replicate the initial factor structure found in the previous community sample in a clinical sample; (b) to collect data on the discriminant and convergent validity of the PSWQ; (c) to evaluate the ability of the instrument for discriminating GAD patients from patients with others anxiety disorders by means of a cut-score.

Method

Subjects

The total sample was comprised of two independent groups. Anxious Control Group (AC) and Generalized Anxiety Disorder Group (GAD) were composed by 50 patients each, aged 21 to 60 years. The mean age for the GAD group was 35.3 years ($SD = 8.04$) and 34.23 ($SD = 7.81$) for the AC group. All groups had a similar education background. No patients suffering from psychotic or substance abuse disorders at the time of the study were included in the clinical groups. DSM-IV diagnoses (APA, 1994) for clinical participants were established via the Structured Clinical Interview for DSM-IV disorders (First, Spitzer, Williams, & Gibbon, 1995).

Clinical samples were recruited in the psychiatry department of Public Hospitals and Private Clinics of the city of Buenos Aires, Argentina. ACs had one or more of the following diagnoses and did not meet criteria for GAD: Panic Disorder (60%), agoraphobia (46%), social phobia (30%), obsessive compulsive disorder (18%) and posttraumatic stress disorder (8%). Percentages do not total 100 because patients may have presented with more than one disorder. At the assessment point, 20 participants from the clinical groups were taking medication (anxiolytics, antidepressants, or both). No significant statistical differences on demographic variables were found between groups.

Instruments

In addition to the Argentinean version of the PSWQ, the following battery of instruments was administered:

Beck Depression Inventory –II (BDI-II)

The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report inventory that is one of the most widely used instruments for measuring the severity of depression. This version of the questionnaire is composed of items relating to cognitive, physical, affective, motivational, vegetative and psychomotor symptoms of depression. The items are rated on a four-point Likert scale, and the total score may range from 0 to 63. Higher scores represent a higher severity of depressive symptomatology. Like the original version, the Argentinean adaptation of the BDI-II (Beck, Steer, & Brown, 2006) shows excellent internal consistency ($\alpha = .88$ and .86 for clinical and non-clinical samples, respectively), good test–retest reliability ($r = .90$ over a 7-10 days interval), and good convergent and divergent validity.

Trait form of The State-Trait Anxiety Inventory (STAI)

The STAI (Spielberger, Gorsuch, & Lushene, 1994) measures two anxiety constructs each one on a separate subscale: state-anxiety (STAI-S) and trait-anxiety (STAI-T). State-anxiety is the intensity of an emotional state of anxiety at a given moment in time and is characterised by tension, apprehension, nervousness, worry and autonomic arousal. Trait-anxiety is a relatively stable individual difference in anxiety-proneness, and as such is conceptualised as a personality characteristic. Each subscale consists of 20 items. In the STAI-T form, the subjects reports their agreement with each item on a 4-point Likert response scale ranging from almost never (1) to almost always (4). A total score is obtained by adding all the responses, high scores indicating higher levels of trait anxiety. The STAI has been used extensively in research for its excellent psychometrics properties. The psychometric properties of the Argentinean version of STAI have been well established (Leibovich de Figueroa, 1991). In this study only the Trait-anxiety subscale (STAI-T) was used.

Procedure

Informed consent was obtained from all participants as a requirement for their inclusion in the study. Subsequently, subjects completed all the instruments (PSWQ, BDI-II and STAI-T). In order to avoid the sequencing effect instruments were administered in randomized sequences. All statistical analyses were performed using the Statistical Package for the Social Sciences, version 17.0 (SPSS Inc, 2008).

Results

Cross-validation of the factor structure

The 16 items of the PSWQ were subjected to a principal axis factoring; the analysis was applied to the entire clinical sample ($n = 100$). Although the total sample size was small, the Kaiser-Meyer-Olkin index of sampling adequacy was .88, and Bartlett's test of sphericity was significant ($df = 120$, $p < .001$), indicating that the correlation matrix was suitable for factor analysis. Once again, one factor with eigenvalue greater than 1 (9.70) was identified. The one factor explained almost 59% of the variance (58.8%); therefore, it is possible to assert that this result replicated the factor structure found in the community sample. Factor loadings of each item were almost equal to the previous

Table 3
Means (standard deviations) and mean differences on the PSWQ, STAI-T and BDI-II

	GAD (n = 50)	AC (n = 50)	t value
PSWQ	70.15 (6.31)	55.10 (7.92)	5.447***
STAI-T	58.40 (5.03)	58.70 (7.4)	1.901*
BDI-II	17.80 (7.79)	18.70 (8.91)	-1.425*

* *p* < .05. *** *p* < .001
GAD = Generalized Anxiety Disorder patients group. AC = Anxious Control group. CG = Control Group. PSWQ = Penn State Worry Questionnaire. STAI-T = State-Trait. Anxiety Inventory, trait form. BDI-II = Beck Depression Inventory II.

Table 4
Pearson correlation coefficients of the PSWQ with STAI-T and BDI-II

	GAD	AC	CC
STAI-T	.815**	.769*	.681*
BDI-II	.533*	.512*	.321**

* *p* < .05. ** *p* < .01.
GAD = Generalized Anxiety Disorder patients group. AC = Anxious Control group. CG = Control Group; STAI-T = State-Trait Anxiety Inventory, trait form. BDI-II = Beck Depression Inventory II.

pattern matrix (see Table 1). As this evidence points out, the results support the unidimensional factor structure of the Argentinean version of the PSWQ.

Convergent and discriminant validity

Sample descriptive statistics for all measurements and comparative *t*-test analysis are shown in Table 3. Convergent and discriminant validity were tested by computing correlations between the PSWQ, STAI-T and BDI-II scores. Table 4 shows Pearson's correlations for each group. As we expected, the PSWQ score correlated more strongly with the STAI-T than with the BDI-II for all groups, suggesting an adequate convergent validity. The correlations obtained for the CC group were very similar to those reported by others researchers (Meyer, et al., 1990; Yilmaz, et al., 2008), with a higher correlation between PSWQ and STAI-T (r = .681, p < .01) than between PSWQ and BDI-II (r = .321, p < .05). The strongest positive correlation was found between PSWQ and STAI-T scores in the GAD group (r = .81, p < .01).

An important validity requirement for an assessment tool is that it should discriminate between the clinical population for which it is designed and the community population. Therefore, in order to assess the ability of the instrument to discriminate GAD patients from patients with other anxiety disorders, an independent sample *t*-test was used to compare both groups. The analysis revealed a significant statistical difference between GAD and AC patients PSWQ scores (t = 5.447, *df* = 98, p < .001). In turn, the analysis did not show differences between both groups in BDI-II (t = -1.425, *df* = 98, p > .05) and STAI-T scores (t = 1.901, *df* = 98, p > .05).

Receiver operating characteristic analysis

In order to assess the ability of the instrument to discriminate patients with GAD from patients with other anxiety disorders by means of a cut score, a Receiver Operating Characteristic analysis (ROC) (Kraemer, 1992) was carried out. The ROC curve is presented in figure 2. The analysis revealed a strong ROC curve for the PSWQ scores (AUC = .90; p < .001), that was significantly better than chance in discriminating GAD patients from patients with other anxiety disorders. The 95% confidence interval of the AUC ranged from .87 to .95.

Cut scores optimizing sensitivity (*SE*), optimizing specificity (*SP*), and simultaneously optimizing both sensitivity and specificity were derived for values of the PSWQ total score. When optimizing sensitivity, the score

that optimized sensitivity without reducing specificity to less than chance (cut score = 54), 49 of 50 GAD patients (98%) and 13 of 50 patients from the AC group (26%) were correctly classified. Overall, 62% of the total sample was correctly classified ($SP = .26$; $SE = .98$; Positive Predictive Value $PPV = .569$; Negative Predictive Value $NPV = .92$). When optimizing specificity without reducing sensitivity to less than chance (cut score = 71), 29 of 50 GAD patients ($SE = .58$) and 46 of 50 patients from the AC group ($SP = .92$) were correctly classified ($PPV = .878$; $NPV = .68$). Overall, 75% of the sample was correctly classified.

Finally, when both sensitivity and specificity were optimized (cut score = 63), 45 out of 50 GAD patients ($SE = .90$), and 41out of 50 patients from the AC group ($SP = .82$) were correctly classified. Overall, 86% of the total sample was correctly classified ($PPV = .83$; $NPV = .89$).
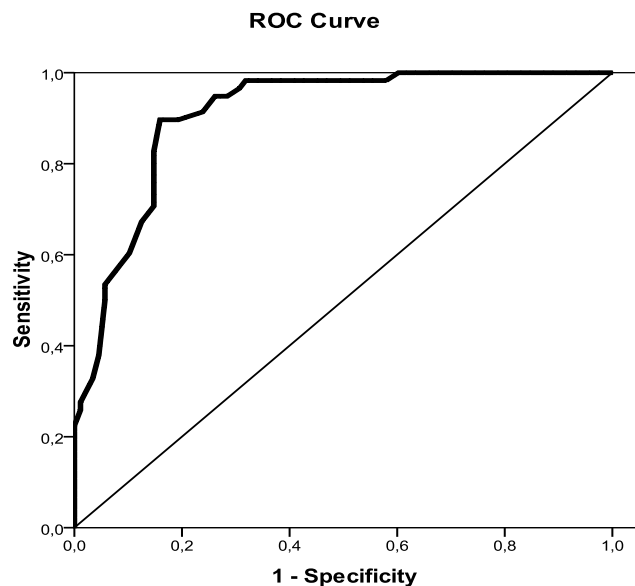

Figure 2. ROC curve for the PSWQ total score of patients from GAD group and AC group.

Discussion

The two factor analysis carried out on different samples (community and clinical samples) replicated a unifactorial solution for the PSWQ. The one factor solution explained 60% of the total variance. Although some studies have examined the factor structure of the 16-item PSWQ and arrived at very similar solutions, others researchers have found a two-factor solution. Nevertheless, there is no agreement among the latter, as they disagree about the

retention of factors. Whereas some researchers have retained a two-factorial solution (Fresco et al., 2002; Olatunji et al., 2007; Sandín-Ferrero, et al., 2009; Yilmaz et al., 2008), others have chosen a unifactorial solution based on the examination of a screen plot and the strong internal consistency of the 16-item PSWQ (Brown et al., 1992; Gana et al., 2002; van Rijsoort et al., 1999). However, our data about factorial structure and internal consistency of the 16-item PSWQ are consistent with the widespread acceptance of the unifactorial solution of the PSWQ (Meyer et al., 1990; Brown, 2003; Brown et al., 1992; Ladouceur et al., 1992).

In turn, even though five negative statements were included in the original PSWQ with the aim of reducing the effects of agreement, it is possible that they may confuse some subjects regarding the answers. The PSWQ was designed to assess the disposition of an individual to worry, not their disposition not worry, that is why the negative items must be reversed scored. Thus, a strong agreement with a positive statement obtains the same score as a strong disagreement with a negative statement, and vice versa.

The fact that the factor ´Absence of Worry´ reported in others studies was typically composed of items that were reverse scored suggests that it could be due to the existence of a perseverative bias towards a certain response category or to a confounding effect of the negative statements. Data from several studies seems to support the hypothesis that this second factor could represent more a method effects phenomenon than a substantive factor (Hazlett-Stevens et al., 2004; Lim et al., 2008; Meloni & Gana, 2001; Zhong et al., 2009).

Since the community and clinical subjects employed in our study were fairly educated, 61% with some degree of university level, it is possible to maintain that they do not have any particular problems understanding the negative and double negative statements. Nevertheless, it would be of interest to analyse effects of negative and double negative statements on the answers of a less educated sample.

Recently, some authors have developed abbreviated versions of PSWQ and have evaluated their applicability to different populations (Crittendon & Hopko, 2006; Nuevo, Mackintosh, Gatz, Montorio, & Wetherell, 2007; Pestle et al., 2008). In these versions some of the five reverse-scored items from the original PSWQ are usually deleted or positively worded to avoid the method before-mentioned.

However, the Argentinean version of PSWQ showed a good internal consistency ($\alpha = .94$) and an appropriate test-retest correlation for a 4-week interval ($r = .86$). These results are consistent with a number of studies carried out across different populations (Beck, Stanley, & Zebb, 1995; Gosselin, Dugas, Ladouceur, & Freeston, 2001; Meyer, Miller, Metzger, & Borkovec, 1990; Molina & Borkovec, 1994; Nuevo et al., 2002; Sandín-Ferrero, et al., 2009), suggesting a good reliability for the instrument.

In the community sample, women scored significantly

higher than men (t = -5.56; df = 398; p < .001), a finding consistent with the literature on the topic (Molina & Borkovec, 1994; Pallesen et al., 2006; Robichaud, Dugas, & Conway, 2003; Startup & Erickson, 2006; Yılmaz, Gençöz, & Wells, 2008). The correlation between the PSWQ and the STAI-T scores was higher than the correlation between the PSWQ and the BDI-II, suggesting adequate convergent and discriminant validity of the instrument. In addition, results from parametric independent sample t-test revealed significant differences between clinical groups, thus, GAD patients scored significantly higher on PSWQ than AC (t = 5.447, gl = 98, p < .001) and CC participants giving additional support to the discriminant validity of the questionnaire.

When a ROC analysis was performed, the measure has demonstrated strong sensitivity and specificity in discriminating individuals with GAD from patients with other anxiety disorders; this finding was in accordance with other studies (Behar et al., 2003; Fresco, et al., 2003; Gonzalez et al., 2007; Nuevo et al., 2002; Webb et al., 2009).

The most main limitation of this study is the small size of the samples, particularly GAD and AC samples. Thus, corroboration of current findings must await replication in a larger clinical sample.

Nevertheless, the present study indicate that the Argentinean version of PSWQ has adequate psychometric properties and suggest that the questionnaire may be useful for assessing pathological worry and as an initial screening tool for the identification of possible GAD patients.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th Ed.). Washington, DC: Author.

Barlow, D. H. (1988). *Anxiety and its disorders: the nature and treatment of anxiety and panic*. New York, NY: Guildford Press.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *BDI-II, beck depression inventory: Manual* (2nd ed.). San Antonio, TX: Psychological Corporation.

Beck, A. T, Steer, R. A., & Brown, G. K. (2006). *Inventario de depresión de Beck: BDI-II* [The Beck Depression Inventory-II] (2nd ed.). Buenos Aires: Paidós.

Beck, J. G., Stanley, M. A., & Zebb, B. J. (1995). Psychometric properties of the Penn State Worry Questionnaire. *Journal of Clinical Geropsychology, 1*, 33-42.

Behar, E., Alcaine, O., Zuellig, A. R., & Borkovec, T. D. (2003). Screening for generalized anxiety disorder using the Penn State Worry Questionnaire: A receiver operating characteristics analysis. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 25-43. doi:10.1016/S0005-7916(03)00004-1

Borkovec, T. D. (1994). The nature, functions and origins of worry. In G. C. L. Davey, & F. Tallis (Eds.), *Worrying: Perspectives on theory, assessment and treatment* (pp.5-33). Chichester, UK: Wiley.

Borkovec, T. D., Alcaine, O., & Behar, E. (2004). Avoidance theory of worry and generalized anxiety disorder. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77-108). New York, NY: Guilford Press.

Borkovec, T. D., Shadick, R. N., & Hopkins, M. (1991). The nature of normal and pathological worry. In R. M. Rapee, & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety-depression* (pp. 29-51). New York, NY: Guildford Press.

Brislin, R., Lonner, W., & Thorndike, R. (1973). *Cross-cultural research methods*. New York, NY: Wiley.

Brown, T. A. (2003). Confirmatory factor analysis of the Penn State Worry Questionnaire: Multiple factors or method effects? *Behaviour Research and Therapy, 41*, 1411-426. doi:10.1016/S0005-7967(03)00059-7

Brown, T. A., Antony, M. M., & Barlow, D. H. (1992). Psychometric properties of the Penn State Worry Questionnaire in a clinical anxiety disorders sample. *Behaviour Research and Therapy, 30*, 33-37.doi:10.1016/0005-7967(92)90093-V

Carter, M., Sbrocco, T., Miller, O., Suchday, S., Lewis, E., & Freedman, R. (2005). Factor structure, reliability, and validity of the Penn State Worry Questionnaire: differences between African-American and White-American college students. *Journal of Anxiety Disorders, 19*(8), 827-843. doi:10.1016/j.janxdis.2004.11.001

Chelminski, I., & Zimmerman, M. (2003). Pathological worry in depressed and anxious patients. *Journal of Anxiety Disorders, 17*(5), 533-46. doi:10.1016/S0887-6185(02)00246-3

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Covin, R., Ouimet, A., Seeds, P., & Dozois, D. (2008). A meta-analysis of CBT for pathological worry among clients with GAD. *Journal of Anxiety Disorders, 22*(1), 108-116. doi:10.1016/j.janxdis.2007.01.002

Crittendon, J., & Hopko, D. R. (2006). Assessing worry in older and younger adults: Psychometric properties of an Abbreviated Penn State Worry Questionnaire (PSWQ-A). *Journal of Anxiety Disorders, 20*, 1036-1054. doi:10.1016/j.janxdis.2005.11.006

Davey, G. C. (1994). Pathological worrying as exacerbated problem solving. In G. C. L. Davey, & F. Tallis (Eds), *Worrying: Perspectives on theory, assessment and treatment*. Chichester, UK: Wiley.

Davey, G. C., Hampton, J., Farrell, J., & Davidson, S. (1992). Some characteristics of worrying: Evidence for Worrying and anxiety as separate constructs. *Personality and Individual Differences, 13*, 133-147. doi:10.1016/0191-8869(92)90036-O

Davey, G. C., & Wells, A. (Eds.) (2006). *Worry and its psychological disorders*. Chichester, UK: Wiley. doi:10.1002/9780470713143

Dugas, M. J., & Ladouceur, R. (1998). Analysis and treatment of generalized anxiety disorder. In V. E. Caballo (Ed.),

International handbook of cognitive-behavioral treatments of psychological disorders (pp. 197-225). Oxford, UK: Pergamon Press.

First, M. B., Spitzer, R. L., Williams, J. B., & Gibbon, M. (1995). *Structured Clinical Interview for DSM-IV (SCID-I): User's Guide and Interview, Research Version*. New York, Biometrics Research Department, New York State Psychiatric Institute.

Fresco, D. M., Heimberg, R. G., Mennin, D. S., & Turk, C. L. (2002). Confirmatory factor analysis of the Penn State Worry Questionnaire. *Behaviour Research and Therapy, 40,* 313-323. doi:10.1016/S0005-7967(00)00113-3

Fresco, D. M., Mennin, D. S., Heimberg, R. G., & Turk, C. L. (2003). Using the Penn State Worry Questionnaire to identify individuals with generalized anxiety disorder: a receiver operating characteristic analysis. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 283-291. doi:10.1016/j.jbtep.2003.09.001

Gana, K., Martin, B., Canouet, M. D., Trouillet, R., & Meloni, F. (2002). Factorial structure of a French version of the Penn State Worry Questionnaire. *European Journal of Psychological Assessment, 18*, 158-164. doi:10.1027//1015-5759.18.2.158

González, A., Mata, S., Lavie, R., & Resler, G. (2007). Validación del cuestionario de preocupaciones de la universidad estatal de pensilvania (PSWQ) [Validation of the Penn State Worry Questionnaire]. *Revista de la Facultad de Medicina Universidad Central de Venezuela, 30*(1), 38-42.

Gosselin, P., Dugas, M., Ladouceur,R., & Freeston, M. (2001). Evaluation of worry: validation of a French translation of the Penn State Worry Questionnaire. *L'Encéphale 27*(5), 475-484.

Haslett-Stevens, H., Ullman, J., & Craske, M. (2004). Factor structure of the Penn State Worry Questionnaire: examination of a method factor. *Psychological Assessment, 11*(4), 361-370. doi:10.1177/1073191104269872

Hirai, M., Stanley, M., & Novy, D. (2006). Generalized Anxiety Disorder in Hispanics: Symptom Characteristics and Prediction of Severity. *Journal of Psychopathology and Behavioral Assessment, 28*(1), 49-56. doi:10.1007/s10862-006-4541-2

Hopko, D., Stanley, M., Reas, D., Wetherell, J., Beck, J., Novy, D., & Averill, P. (2003). Assessing worry in older adults: confirmatory factor analysis of the Penn State Worry Questionnaire and psychometric properties of an abbreviated model. *Psychological Assessment, 15*(2), 173-183. doi:10.1037/1040-3590.15.2.173

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 30*, 179-185. doi:10.1007/BF02289447

Kraemer, H. C. (1992). *Evaluating medical tests*. Newbury Park, CA: Sage Publications.

Ladouceur, R., Freeston, M. H., Rheaume, J., Letarte, H., & Dumont, J. (1992). Translation and validation of a French version of the Penn State Worry Questionnaire. *Canadian Psychology, 33*, 241.

Leibovich de Figueroa, N. B. (1991). Ansiedad: algunas concepciones teóricas y su evaluación. In M. M. Casullo,

N. Leibovich de Figueroa, & M. Aszkenazi (Eds.), *Teoría y técnicas de evaluación psicológica* [Theory and techniques of psychologycal assessment] (pp. 121-154). Buenos Aires: Psicoteca.

Lim, Y. J., Kim, Y. H., Lee, E. H., & Kwon, S. (2008). The Penn State Worry Questionnaire: psychometric properties of the Korean version. *Depression and Anxiety, 25*(10), 97-103. doi:10.1002/da.20356

Meloni, F., & Gana, K. (2001). Wording effects in the Italian version of the Penn State Worry Questionnaire. *Clinical Psychology and Psychotherapy, 8*, 282-287. doi:10.1002/cpp.294

Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy, 28*, 487-495. doi:10.1016/0005-7967(90)90135-6

Molina, S., & Borkovec, T. D. (1994). The Penn State Worry Questionnaire: psychometric properties and associated characteristics. In G. C. L. Davey, & F. Tallis (Eds.), *Worrying: Perspectives on theory, assessment and treatment* (pp.265-283). Chichester, UK: Wiley.

Molina, S., Borkovec, T. D., Peasley, C., & Person, D. (1998). Content analysis of worrisome streams of consciousness anxious and dysphoric participants. *Cognitive Therapy and Research, 22*, 109-123. doi:10.1023/A:1018772104808

Novy, D., Stanley, M., Averill, P., & Daza, P. (2001). Psychometric comparability of English- and Spanish-language measures of anxiety and related affective symptoms. *Psychological Assessment, 13*(3), 347-355. doi:10.1037//1040-3590.13.3.347

Nuevo, R., Mackintosh, M., Gatz, M., Montorio, I., & Wetherell, J. (2007). A test of the measurement invariance of a brief version of the Penn State Worry Questionnaire between American and Spanish older adults. *International Psychogeriatrics, 19*(1), 89-101. doi:10.1017/S1041610206003450

Nuevo, R., Montorio, I., & Ruiz, M. (2002). Aplicabilidad del Inventario de Preocupación de Pensilvania (PSWQ) a población de edad avanzada [Applicability of the Penn State Worry Questionnaire in an older adult population]. *Ansiedad y Estrés, 8*(2-3), 157-172.

Olatunji, B., Schottenbauer, M., Rodriguez, B., Glass, C., & Arnkoff, D. (2007). The structure of worry: relations between positive/negative personality characteristics and the Penn State Worry Questionnaire. *Journal of Anxiety Disorders, 21*(4), 540-553. doi:10.1016/j.janxdis.2006.08.005

Pallesen S., Nordhus, I., Carlstedt, B., Thayer, J., & Johnsen, T. (2006). A Norwegian adaptation of the Penn State Worry Questionnaire: factor structure, reliability, validity and norms. *Scandinavian Journal of Psychology, 47*(4), 281-91. doi:10.1111/j.1467-9450.2006.00518.x

Pestle, S., Chorpita, B., & Schiffman, J. (2008).Psychometric properties of the Penn State Worry Questionnaire for children in a large clinical sample. *Journal of Clinical Child and Adolescent Psychology, 37*(2), 465-471. doi:10.1080/15374410801955896

Portman, M. (2009). *Generalized anxiety disorder across the lifespan: An integrative approach.* New York, NY: Springer. doi:10.1007/978-0-387-89243-6

Robichaud, M., Dugas, M. J., & Conway, M. (2003). Gender differences in worry and associated cognitive–behavioral variables. *Journal of Anxiety Disorders, 17*, 501-516. doi:10.1016/S0887-6185(02)00237-2

Salzer, S., Stiller, C., Tacke-Pook, A., Jacobi, C., & Leibing, E. (2009). Screening for Generalized Anxiety Disorder in inpatient psychosomatic rehabilitation: pathological worry and the impact of depressive symptoms. *GMS Psycho-Social-Medicine, 6*, 1-7. doi:10.3205/psm000058

Sandín-Ferrero, B., Chorot-Raso, P., Valiente-García, R., & Lostao-Unzu, L. (2009). Validación española del cuestionario de preocupación PSWQ: estructura factorial y propiedades psicométricas [Spanish validation of the PSWQ: factor structure and psychometric properties]. *Revista de Psicopatología y Psicología Clínica, 14*(2), 107-122.

Sassaroli, S., Bertelli, S., Decoppi, M., Crosina, M., Milos, G., & Ruggiero, G. (2005). Worry and eating disorders: a psychopathological association. *Eating Behaviors, 6*(4), 301-307. doi:10.1016/j.eatbeh.2005.05.001

Sibrava , N. J. , & Borkovec , T. D. (2006) . The cognitive avoidance theory of worry. In G. C. L. Davey & A. Wells (Eds.), *Worry and its psychological disorders: Theory, assessment and treatment* (pp. 239-256). Chichester, UK : Wiley. doi:10.1002/9780470713143

Spielberger, C., Gorsuch, R., & Lushene, R., (1994). *Cuestionario de ansiedad estado-rasgo, STAI* [The trait-state anxiety questionnaire, STAI] (4th ed). Madrid: TEA.

SPSS-PC, Version 17 (2008) [Computer software] Chicago, IL: SPSS Inc.

Starcevic, V., Berle, D., Milicevic, D., Hannan, A., Lamplugh, C., & Eslick, G. (2007). Pathological worry, anxiety disorders and the impact of co-occurrence with depressive and other anxiety disorders. *Journal of Anxiety Disorders, 21*(8), 1016-1027. doi:10.1016/j.janxdis.2006.10.015

Startup, H. M., & Erickson, T. M. (2006). The Penn State Worry Questionnaire (PSWQ). In G.C.L. Davey, & A. Wells (Eds), *Worry and its psychological disorders: Theory, assessment and treatment* (pp. 101–119). Chichester, UK: Wiley. doi:10.1002/9780470713143

Stöber, J. (1995). Besorgnis: Ein Vergleich dreier Invetare zur Erfassung allgemeiner Sorgen [Worrying: A comparison of three questionnaires concerning everyday worries]. *Zeitschrift für Differentielle und Diagnsostische Psychologie, 16*, 50-63.

Tallis, F., Eysenck, M., & Mathews, A. (1992). A questionnaire for the measurement of nonpathological worry. *Personality and Individual Difference*s, *13*, 161-168. doi:10.1016/0191-8869(92)90038-Q

van Rijsoort, S., Emmelkamp, P., & Vervaeke, G. (1999). The Penn State Worry Questionnaire and the Worry Domains Questionnaire: Structure, reliability and validity. *Clinical Psychology and Psychotherap*y, *6*, 297-307. doi:10.1002/(SICI)1099-0879(199910)6:4<297::AID-CPP206>3.0.CO;2-E

Vetere, G., & Rodríguez Biglieri, R. (2006). La Terapia Cognitiva y su validación para el Trastorno de Ansiedad Generalizada [The cognitive therapy and its validation for the generalized anxiety disorder]. *Revista Argentina de Clínica Psicológica, 15*(1)*, 49-53.

Vetere, G., & Rodríguez Biglieri, R. (2005). Validación empírica de modelos teóricos y tratamientos cognitivo-conductuales para trastorno de ansiedad generalizada [Empirical validation of the theoretical models and cognitive behavioral treatments for generalized anxiety disorder]. *Vertex, Revista Argentina de Psiquiatría*, *61*, 170-175.

Webb, S., Diefenbach, G., Wagener, P., Novy, D., Kunik, M., Rhoades, H., & Stanley, M. (2008). Comparison of self-report measures for identifying late-life generalized anxiety in primary care. *Journal of Geriatric Psychiatry and Neurology, 21*(4), 223-231. doi:10.1177/0891988708324936

Yilmaz, A., Gençöz, T., & Wells, A. (2008). Psychometric Characteristics of the Penn State Worry Questionnaire and Metacognitions Questionnaire-30 and Metacognitive Predictors of Worry and Obsessive–Compulsive Symptoms in a Turkish Simple. *Clinical Psychology and Psychotherapy*, *15*, 424-439. doi:10.1002/cpp.589

Young, F. W. (2003). ViSta: *The Visual Statistics System.* [computer software] [on-line] Retrieved from: URL: http://forrest.psych.unc.edu/research/index.html

Zhong, J., Wang, C., Li, J., & Liu, J. (2009). Penn state worry questionnaire: structure and psychometric properties of the Chinese version. *Journal of Zhejiang University - Science B, 10*(3), 211-218. doi:10.1631/jzus.B0820189