Psychometric properties of the Spanish self-report version of the Panic Disorder Severity Scale

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Abstract

Objective: The goal of the study was to assess the psychometric properties and the factor structure of the Spanish self-report version of the Panic Disorder Severity Scale (PDSS-SR).

Method: One hundred and twenty four patients meeting DSM-IV criteria for panic disorder were assessed with the Spanish PDSS-SR, the Anxiety Sensitivity Index-3 (ASI-3), the Sheehan Disability Inventory (SDI) and the Beck Depression Inventory-II (BDI-II). Cronbach's alpha was used to evaluate internal consistency. Pearson correlations were used to evaluate test-retest reliability, convergent and divergent validity. Sensitivity to change data was obtained for 91 patients that had completed a cognitive behavioural therapy. The factor structure was analysed using a confirmatory factor analysis (CFA).

Results: The Spanish PDSS-SR showed excellent internal consistency, good test-retest reliability and adequate convergent validity. Regarding divergent validity, the correlation with the BDI-II was larger than expected. The Spanish PDSS-SR was sensitive to change. Our CFA suggested a two-factor model for the scale.

Conclusions: The Spanish PDSS-SR has similar psychometric properties as the previous versions of the PDSS-SR and it can become a useful instrument to assess panic symptoms in clinical and research settings in Spanish-speaking countries.
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1. Introduction

Panic disorder (PD) is a well-defined syndrome characterized by recurrent panic attacks and concern about future attacks and their implications. It leads to significant distress and functional limitation, tends to become chronic [1] and is often associated with psychiatric comorbidities [2]. Panic disorder is highly prevalent [2,3] and entails high economic costs to society [4].

Several instruments have been developed to assess PD and its associated features. The ideal instrument to assess PD would be an easy-to administer scale evaluating overall severity, the distinct phenomena that constitute the syndrome (panic attacks, anticipatory anxiety, and agoraphobic avoidance) [5], as well as the interference associated with the disorder in different life domains. The *Panic Disorder Severity Scale* (PDSS) [6] seems to fulfil most of such criteria.

The PDSS was initially developed as a clinician-administered interview with seven questions that refer to frequency of panic attacks, associated distress, anticipatory anxiety, agoraphobic avoidance, interoceptive avoidance, and social and work impairment. The PDSS has been widely used in research and clinical settings and its psychometric properties have been relatively well investigated [6–11]. There are, however, some discrepancies about the factor structure of the scale. While some studies [7,9] suggest a one-factor model, others [6,8,10,11] present data that fit a two-factor solution, with one factor related to panic frequency and associated distress

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and another factor related to behavioural/cognitive changes secondary to panic. This is important given that some neurobiological data support the existence of different neural systems involved in the different features of PD [5].

However, a limitation of the PDSS is that it has to be administered by a trained clinician. This motivated the development of a self-report version of the instrument (PDSS-SR) [12]. The PDSS-SR assesses the same contents as the PDSS and is also scored on a 5-point ordinal scale (0–4); the total score also ranges between 0 and 28. The main modification with respect to the PDSS is the time frame (from past month for the PDSS to past week for the PDSS-SR). This was made to reduce possible recall bias and to use the instrument to monitor symptoms on a weekly basis [12].

To the best of our knowledge, only two studies have investigated the psychometric properties of the original English version of the PDSS-SR [12,13], but one of them [13] used a modified version of the instrument that excluded the items assessing social and work interference. These studies have generally shown that the PDSS-SR has excellent internal consistency and test-retest reliability, adequate convergent and divergent validity, and good sensitivity to change [12,13].

Only one study has assessed a non-English version of the PDSS-SR. Lee et al. [14] reported on a Korean version of the instrument and found psychometric properties similar to those obtained for the original English PDSS-SR. The factor structure of the PDSS-SR has only been assed with this Korean version of the scale, and the results supported a unidimensional structure. Table 1 offers a summary of previous results on the psychometric properties and the factor structure of the PDSS-SR.

Taking into account that there is only one cross-cultural evaluation of the PDSS-SR, and considering that the factor structure of the scale (for both the clinician-administered and the self-report version) remains unclear, the aim of this study was to assess the psychometric properties and the factor structure of the Spanish version of the PDSS-SR.

2. Method

2.1. Sample

One hundred and twenty-four patients meeting DSM-IV criteria for PD [15] were included in the study (110 with agoraphobia and 14 without agoraphobia). Patients were referred for treatment at three different mental health centres from Barcelona, Spain. The sample included 40 men (32.3%), and the mean age was 37.1 years (range 18–69, $SD = 10.14$). The corresponding ethical committees approved the study and all participants provided voluntary and informed written consent. Diagnosis was established by experienced clinicians using the validated Spanish version [16] of the *Mini International Neuropsychiatric Interview* (MINI) [17]. Exclusion criteria consisted of the presence or history of any organic mental disorder, bipolar disorder or psychosis; substance abuse or dependence in the last 3 months; intellectual disability or language barriers. Other comorbid disorders were allowed as long as they were not a primary source of distress.

2.2. Measures

The MINI (Spanish version 5.0.0) is a brief and structured interview to evaluate the presence of Axis I disorders according to DSM-IV criteria [17], and it is a widely used instrument in clinical and research settings. The Spanish version of the MINI has shown to have sound psychometric properties [18].

Table 1
Summary of previous studies on the psychometric properties of the PDSS-SR.

Authors/year	Sample	Internal consistency (Cronbach's alpha)	Test-retest reliability	Convergent and divergent validity (Pearson correlations)	Sensitivity to change (*t*-test)	Exploratory factor analysis
Houck et al., 2002	N = 108 (psychiatric outpatients)	0.92	ICC = 0.83		Significant decrease on the total score between pre and post CBT (N = 27)	
Lee et al., 2009	N = 148 (panic disorder)	0.88	$r_s = 0.94$	ASI-R: 0.58 APPQ-agora: 0.54 APPQ-intero: 0.55 BAI: 0.67 STAI-T: 0.46 BDI: 0.52	Significant decrease on the total score between pre and post paroxetine treatment (N = 33)	One-factor model
Wuyek et al., 2011	N = 52 (panic disorder)	0.80		ACQ: 0.43 ASI: 0.29 IIRS: 0.34 MI-Alone: 0.29 MI-Acc: 0.27		

ICC = intraclass correlation coefficient, r_s = spearman correlation, CBT = cognitive behavioural therapy, ASI-R = Anxiety Sensitivity Index-Revised, APPQ-agora = agoraphobia factor of the Albany Panic and Phobia Questionnaire, APPQ-intero = interoceptive fear factor of the Albany Panic and Phobia Questionnaire, BAI = Beck Anxiety Inventory, STAI-T = Spielberg State-Trait Anxiety Inventory-Trait Version, BDI = Beck Depression Inventory, ACQ = Agoraphobic Cognitions Questionnaire, ASI = Anxiety Sensitivity Index, IIRS = Illness Intrusiveness Ratings Scale, MI-Alone = Mobility Inventory for Agoraphobia-Alone, MI-Acc = Mobility Inventory for Agoraphobia-Accompanied.