Journal of Affective Disorders 205 (2016) 239–244

Contents lists available at ScienceDirect

Journal of Affective Disorders

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

Research paper

Investigating symptom domains of bipolar disorder for Spanish-speakers using the Bipolar Inventory of Symptoms Scale

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ARTICLE INFO

Article history:
Received 6 April 2016
Received in revised form
10 June 2016
Accepted 6 July 2016
Available online 25 July 2016

Keywords:
Bipolar disorder
Spanish
Hispanics
Rating scale
Psychometrics

ABSTRACT

Background: A Spanish language rating scale which assesses the range of bipolar disorder symptoms is needed. There are rating scales commonly used, however they do not address commonly expressed symptoms associated with bipolar disorder and have varied rating systems. There are also few comparisons of symptom severity between Spanish and English speaking patients, due to limitations in available rating scales.

Methods: We conducted psychometric assessment of the Spanish language Bipolar Inventory of Symptoms Scale (BISS) (N=71) for persons with bipolar disorder, which assesses 5 domains: mania, depression, irritability, anxiety and psychosis. The Spanish BISS scores were then compared to the MADRS (Montgomery Asberg Depression Rating Scale) and the YMRS (Young Mania Rating Scale) as well as to BISS scores in an English speaking sample (N=102) with bipolar disorder from the same geographic locations.

Results: Chronbach's alphas for the Spanish BISS ranged from 0.6 to 0.93, with the psychosis domain displaying lower reliability. Correlations with the MADRS and YMRS were good and ranged from 0.70 to 0.88. The BISS differentiated well across mood states in English and Spanish versions, with mood state differentiated well using subscales and domains. For the irritability and anxiety domains, Spanish speaking participants had higher scores than English speakers across mood states. Females showed differences in symptom profiles compared to males.

Limitations: The sample sizes in the Spanish speaking manic group were small. The Spanish BISS, tested here primarily in patients of Mexican ancestry, may require revision in other Spanish language populations.

Conclusions: The Spanish BISS, a Spanish language symptom rating scale for bipolar disorder, demonstrates good reliability and validity. Clinical assessment in anxiety and irritability domains is particularly relevant in a Spanish speaking sample. Consistent with prior research, females report higher depression, irritability and anxiety scores irrespective of language spoken.

1. Introduction

Bipolar disorder (BD) is expressed as a complexity of affective, anxious and sometimes psychotic symptoms. Comprehensive rating scales are needed to capture the varied illness manifestations, so that treatment is personalized and treatment outcome optimized. Epidemiologic data indicate prevalence rates for bipolar disorder do not differ in U.S. Hispanics compared to U.S. whites (Merikangas et al., 2007) or in Latin American countries (Ferrari et al., 2011). Of U.S. Hispanics, 38% reported speaking Spanish better than English (i.e., being Spanish dominant), 38% were bilingual (i.e., describe no difference in language dominance between English or Spanish), and 24% reported English dominance (Pew Research Center, 2011). Several clinician-rated instruments used to assess BD symptoms have been translated into Spanish, particularly the Young Mania Rating Scale (Apiquian et al., 1997; Colom et al., 2002) and the CARS-M (Livianos et al., 2000). In bipolar depression, the MADRS is often used (Lobo et al., 2002). These are psychometrically sound scales limited by a lack of comprehensive coverage of bipolar disorder symptom domains and only assessing one pole of BD (Bowden et al., 2007).

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http://dx.doi.org/10.1016/j.jad.2016.07.014
0165-0327/

The Bipolar Inventory of Symptoms Scale (BISS) is a well-validated clinician-rated scale assessing 5 symptom domains: depression, mania, irritability, anxiety and psychosis (Gonzalez et al., 2008; Singh et al., 2013; Thompson et al., 2010). In this article we describe the BISS translation into Spanish and reliability and validity assessments of the Spanish version. Our goals were to examine the internal consistency, to compare the scores to validated Spanish BD rating scales and to compare our results with an English speaking sample.

2. Methods

2.1. Translation process

We followed the translation and cultural adaptation process described by Matias-Carrelo et al. (2003). Our goal was to develop a Spanish version of the BISS that could be used with Spanish dominant persons of Mexican origin with BD. We also aimed to produce a translation that could have more widespread use among other Latino groups in the U.S. and in some areas of Latin America. We wanted the translation – in sections intended for patient comprehension and response – to be applicable across a wide range of education levels.

The 4/1/05 version of the English BISS was translated to Spanish by a professional translator. The Spanish draft version was then revised and reviewed by a Bilingual Clinician Committee (BCC), consisting of 4 bilingual clinician-research psychiatrists and a psychologist. The members of the committee were: 1) Mexico-born and educated and living in San Antonio at least 20 years, 2) Argentina-born and living in the U.S. for over 15 years, 3) 3 U.S. born and of Mexican origin. The committee first adapted the initial translated version for individuals in the region, while attempting to maintain the meaning from the English BISS. The committee focused almost exclusively on the BISS statements that are directed to the patient. A BCC member then reviewed the San Antonio version and compared it to a revised English version and minor revisions were made. The title page, instruction page and instructions sections for each question and the anchor statements of each statements were reviewed for grammar and fidelity to the English version and the second San Antonio Spanish version was created.

A convenience sample of nine Spanish-dominant community lay persons then reviewed the patient-directed questions in a group setting. Participants were recruited based on their representation of the patient population in regional public mental health clinics. Of nine persons, 8 were born in Mexico and one in Texas. Ages ranged from 23 to 67. Education levels were: 3=primaria (i.e. 6th grade), 3=secundaria (i.e. 9th grade), 1=one year of secretaria (i.e. trade school). The Texas born person completed 8th grade and one person had missing data. This group read all the Spanish BISS items and provided feedback on comprehensibility, meaning, and generalizability. Of note, the group did not provide a more suitable word for binges other than *atracones,* and suggested that “snacks” was a word understood by Hispanics in the U.S. This group also provided valuable input regarding terms that were simpler but had the same meaning (e.g., *normalmente* instead of *usualmente*, *de repente* instead of *abruptamente*).

This revised Spanish version was then back-translated by a Mexican-born bilingual staff member with knowledge of psychiatric clinical terms and with professional experience translating into and from Spanish. Any remaining discrepancies between the English and Spanish versions were reviewed by the back-translator and a BCC member, with an emphasis on ensuring that the phrasing was most similar the intended meaning of the English language wording.

2.2. Assessment overview

The Spanish version of the MINI PLUS (Mini Internacional Neuropsychiatrica Evaluación, Versión en Español 5.0.0) (Sheehan et al., 1998; Sheehan, 2015) was used to establish diagnosis. The Spanish versions of the BISS (Inventario Bipolar Escala de Síntomas, Versión en Español 4/2008), the Young Mania Rating Scale (Escala para la Evaluación de la Mania) and the Montgomery Asberg Depression Rating Scale (Lobo et al., 2002) were given based on a randomized sequence. The Global Assessment of Functioning (GAF) was completed after all measures were completed.

Eight total raters were certified in BISS administration by viewing 2 videos and providing ratings consistent with gold standard ratings: 4 psychiatrists, 2 psychologists and 2 research assistants with bachelor's degrees in psychology.

2.3. Recruitment

Two research groups participated in the Spanish BISS reliability and validity study: a Spanish speaking sample and an English speaking sample.

2.3.1. Spanish speaking sample

Data were collected between April 2008 and June 2014. Patients with a diagnosis of BD were recruited using fliers placed in community and private practice mental health clinics in two major cities in Texas, El Paso and San Antonio. Participants from previous studies who had consented to be contacted for future research were also contacted by letter or a phone call, or approached during their regularly scheduled outpatient clinic visit.

Participants were 18 years and older, with a self-reported diagnosis of BD later confirmed by the MINI and either predominantly Spanish speaking or bilingual and comfortable answering questions asked only in Spanish. Participants were asked how well they read, spoke and wrote in English and Spanish using a Likert scale of very poor, poor, good and very good.

2.3.2. English speaking sample

An extant data set was used for the English speaking sample (Singh et al., 2013). Data were collected from December 2004 to September 2014. Subjects with a diagnosis of BD were recruited at outpatient psychiatric clinics and in an inpatient psychiatric setting in San Antonio, Texas. Patients were approached at their psychiatric visit by clinicians and research staff as well as by viewing fliers posted in the vicinity. The objective for this dataset was to have a similar number of individuals in each primary mood state of BD.

Age and education level were grouped as follows: 18–34, 35–64 and 65 and older; less than high school, high school, some college and college degree and above.

2.4. Statistical analyses

Chi square and analyses of variance were utilized to examine baseline demographic and clinical data. Pearson product moment correlations were utilized to compare the BISS to established symptom rating scales in BD. Reliability of the scales and domains was described with Chronbach's alpha and the total Spanish speaking sample – including those not with bipolar disorder (n=91) – was used. To compare Spanish and English versions of the BISS, ANOVA was used and only the Spanish speaking sample with a bipolar disorder diagnosis was included (n=71).

With an n=71 for the Spanish speaking sample, correlations of 0.31 can be detected to be significant at 0.05 using a two tailed *t*-test, and power of 0.80 (Machin and Campbell, 1987). For a two sample test with a two tail significance level of 0.05 there is power

Please cite this article as: Arnold, J.G., et al., Investigating symptom domains of bipolar disorder for Spanish-speakers using the Bipolar Inventory of Symptoms Scale. Journal of Affective Disorders (2016), http://dx.doi.org/10.1016/j.jad.2016.07.014