

Spanish adaptation and validation of the Brief Negative Symptoms Scale

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BACKGROUND

Negative symptoms are recognized as core features in schizophrenia related to poorer functioning and lower quality of life (Tas et al., 2013) being proposed historically as a separate entity within the schizophrenia subtype's (Kirkpatrick and Buchanan, 1990). However despite the amount of research in the area, treatment strategies have not improved the prognosis, reflecting the need of newer pharmacological development and better clinical instruments. In this regard, after the Consensus Development of Negative Symptoms (2005) organized by the National Institute of Mental Health (NIMH) the Brief Negative Symptoms Scale (BNSS) was developed (Kirkpatrick et al., 2010) focusing in five agreed negative domains: blunted affect, avolition, asociality, avolition and anhedonia (Kirkpatrick et al., 2006). The BNSS is a 13-item brief scale that allows the study of these domains demonstrating strong inter-rater, test-retest and internal consistency properties. The aim of the present study is the adaptation into Spanish and the validation of the scale.

METHODS

Initially, the Spanish adapted version (BNSS-Sp) was developed using the translation-backtranslation method.

We recruited twenty patients with DSM-IV diagnosis of schizophrenia from outpatient units at Parc de Salut Mar Barcelona, Hospital Clínic Barcelona and Universidad de Oviedo. Patients with IQ below 80, neurological disorders or substance dependence except tobacco and cannabis, were excluded. All subjects gave written informed consent.

All subjects were interviewed and assessed with the BNSS-Sp, the PANSS (Positive and Negative Symptoms Scale) and SANS (Scale for the Assessment of Negative Symptoms) by psychiatrists from their corresponding outpatient unit (DB, AM, CG, PGP, LG). To assess test-retest reliability, ten of these patients were re-interviewed one week later. All these interviews were videotaped for later rating. Rating of all patients was carried out independently by seven psychiatrists (DB, AM, CG, PGP, LG, EFE, GS) but test-retest reliability was performed by five psychiatrists (AM, CG, PG-P, LG, EFE).

To determine interrater reliability, intraclass correlation coefficient (ICC) was calculated for the BNSS-Sp total score and for each subscale. Internal consistency was calculated with Cronbach's alpha. To assess test-retest reliability Pearson's correlation for the total BNSS-Sp and subscales were calculated. Concurrent validity was assessed by correlating the total BNSS-Sp with PANSS negative subscale and SANS. Discriminant validity was assessed by correlating the BNSS total score, with the general and positive symptoms scores from the PANSS.

RESULTS

Twenty subjects were included with a mean age (standard deviation) of 37.34 (11.71) year-old and a mean illness duration of 11.6 (10.37) years. 70.0% were male. The test-retest was performed on 10 subjects (5 from Parc de Salut Mar Barcelona and 5 from Universidad de Oviedo), with a mean age of 42.25 (10.03). 50.0% were male.

BNSS-Sp descriptive statistics for the full sample of patients are presented in table 1.

Interrater reliability

The ICC was 0.97 for the total BNSS-Sp score; 0.96 for anhedonia; 0.86 for distress; 0.94 for asociality; 0.93 for avolition; 0.96 for blunted affect; and 0.96 for alogia.

Internal consistency

Cronbach's alpha for the complete scale was 0.97. Additionally, all the items were significantly correlated with the BNSS-Sp total scale score, and values ranged from $r=0.63$ for distress, to $r=0.89$ for spontaneous elaboration.

Test-retest reliability

Pearson's correlation coefficients were: total BNSS-Sp ($r=0.95$, $p<0.001$); anhedonia ($r=0.80$, $p=0.010$); distress ($r=0.61$, $p=0.056$); asociality ($r=0.78$, $p<0.009$); avolition ($r=0.92$, $p<0.001$); blunted affect ($r=0.97$, $p<0.001$); alogia ($r=0.99$, $p<0.001$).

Concurrent validity

The BNSS-Sp total score was correlated with PANSS negative subscale ($r=0.74$, $p<0.001$) and SANS ($r=0.68$, $p<0.001$).

Discriminant validity

Correlations between the BNSS-Sp total score with total, general, and positive subscale scores from the PANSS are presented in table 2.

Table 1. Descriptive statistics for the total BNSS and subscale scores (Greater scores mean greater severity)

	Total Score	Anhedonia	Distress	Asociality	Avolition	Blunted Affect	Alogia
Mean	19.79	5.09	1.08	3.81	4.23	6.42	3.39
Median	15.21	4.43	.86	3.50	3.79	4.93	1.93
Std. Deviation	12.64	4.27	.99	2.26	2.48	4.40	3.19

Table 2. Discriminant validity. Pearson's correlation coefficients between scale scores

	PANSS Positive Subscale	PANSS General Psychopathology Subscale	PANSS Total
BNSS Total	0.156	0.302	0.459*
SANS Total	0.504*	0.696**	0.809***
PANSS Negative Subscale	0.538*	0.742***	0.861***

* $p<0.05$; ** $p<0.01$; *** $p<0.001$.

CONCLUSIONS

This multicenter study demonstrates that the Spanish adaptation of the BNSS (BNSS-Sp) has adequate psychometric properties in terms of reliability (interrater, test-retest and internal consistency properties) and validity (concurrent/discriminant validity).

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