New psychometric study of the **Sleep Problem Acceptance Questionnaire** indicates good validity evidences.

Translation and validation of the Sleep Problem Acceptance Questionnaire (SPAQ) with a Brazilian sample

Marwin M. I. B. Carmo, MSc [3]
mmcarmo@ucdavis.edu

Leo Paulos-Guarnieri [1]
guarnieri.leo@usp.br

Maria Laura Nogueira Pires, PhD [2]
laurapires@actigrafia.org

Renatha El Rafihi Ferreira, PhD [1]
rerafihi@usp.br

[1] *Department of Psychiatry, University of São Paulo, Brazil*
[2] *Private practice in sleep psychology*
[3] *Department of Psychology, University of California, Davis*

Introduction

Acceptance is essential as a therapeutic process for dealing with sleep problems. The Sleep Problem Acceptance Questionnaire (SPAQ) is an 8-itens psychometric instrument that measures the acceptance of sleep difficulties. The SPAQ contains the subscales "Activity Engagement" and "Willingness," with four items composing each factor; respondents rate them on a 7-point scale, where 0 means "Disagree," and 6 indicates "Completely agree."

Objective

This study developed a Brazilian-Portuguese of the Sleep Problem Acceptance Questionnaire and examined its factor structure, reliability, and construct validity.

Methods

Data were collected from online surveys by 1352 participants, aged 18 to 59 years, with and without insomnia symptoms. Participants completed self-report questionnaires, including:

1. Hospital Anxiety and Depression Scale (HADS);
2. Insomnia Severity Index (ISI);
3. Dysfunctional Beliefs and Attitudes about Sleep Scale (DBAS-16);
4. Acceptance and Action Questionnaire (AAQ-II).

The SPAQ was translated into Portuguese by three independent translators. The translations were synthesized into a single version by a committee composed of insomnia experts. A pilot study with 15 participants demonstrated that the target population understood the content of the scale.

We ran a Confirmatory Factor Analysis to obtain fit statistics and parameter estimates, using the Diagonally Weighted Least Squares (DWLS) estimator, considering items to be ordered.

Reliability indices for each of the facets were obtained using Cronbach's α and McDonald's ω. We assessed construct validity by examining the latent correlations with variables known to be linked with insomnia.

We also examined whether our scale's psychometric properties were equal across time points, comparing baseline test scores to a second administration taken 14 days later.

Results

The 2-factor model showed a good fit to our sample [$\chi^2(19) = 253.97$, $p < .001$ RMSEA = 0.096 [0.09, 0.106]; CFI = 0.973; RNI = 0.973; TLI = 0.96].

Internal consistency was good for Activity Engagement (α = 0.94 [0.93, 0.94], ω = 0.94 [0.93, 0.94]) and Willingness (α = 0.9 [0.89, 0.91], ω = 0.9 [0.89, 0.91]).

The two subscales were weakly and negatively correlated (r = -0.098). Both factors also showed negative moderate to strong correlations with measures of insomnia severity, anxiety, and depression.

Tests of longitudinal invariance show that the scale measurement properties were maintained across 14 days.

Table 1: Study participants (N = 1352) descriptive statistics.

	N (%)
Sex Male (%)	264 (19.5)
Age [mean (SD)]	38.51 (9.78)
Race (%)	
Asian	47 (3.5)
Black	322 (23.8)
Other/Not informed	13 (1.0)
White	970 (71.7)
Educational Level (%)	
College degree or higher	1053 (77.9)
Primary School	16 (1.2)
Secondary School	283 (20.9)
Occupation (%)	
Employed	1039 (76.8)
Retired	29 (2.1)
Student	166 (12.3)
Unemployed	118 (8.7)
Region (%)	
Central-West	27 (2.0)
North	34 (2.6)
Northeast	103 (7.8)
South	110 (8.3)
Southeast	1044 (79.2)

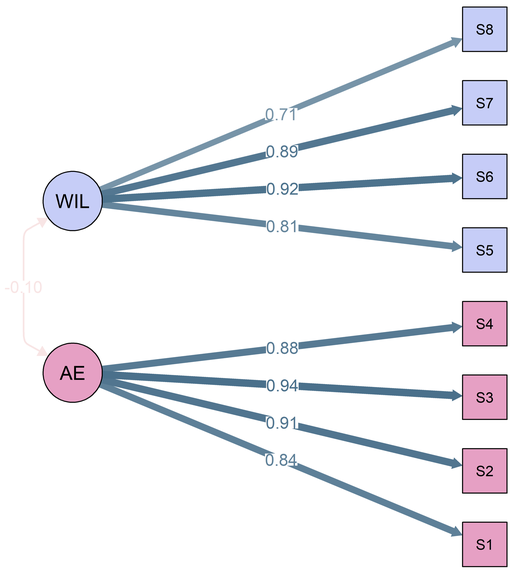
Table 2: Latent correlations and internal consistency levels.

Variable	1	2	3	4	5
1. AE	1.000				
2. WILL	-.098	1.000			
3. ISI	-.159	-.752	1.000		
4. Depression	-.452	-.426	.638	1.000	
5. Anxiety	-.323	-.509	.716	.802	1.000

Table 3: Model fit differences for CFA longitudinal measurement invariance tests.

Model	$\Delta\chi^2$	Δdf	p-value	ΔRMSEA	ΔCFI	ΔAIC	ΔBIC
Configural	331.26	90	<.001	.0566	.9807	60283	60595
Metric	1.51	6.96		.0020	-.0001	10	40
Scalar	17.54	6.01		.0003	.0010	-10	20
Strict	7.54	8.48		.0013	.0006	-10	30

Note. Differences to each preceding constraint level.



Conclusion

These findings suggest that the SPAQ is a valid tool for assessing the acceptance of sleep in a Brazilian-Portuguese-speaking population. However, due to the low correlation between the two subscales, researchers should refrain from interpreting a total sum score and consider these as individual factors.

Items

1. Although things have changed, I am living a normal life despite my sleeping problems. (*Embora as coisas tenham mudado, estou vivendo uma vida normal apesar dos meus problemas de sono.*)
2. I lead a full life even though I have sleeping problems. (*Eu levo uma vida plena apesar de ter problemas de sono.*)
3. My life is going well, even though I have sleeping problems. (*Minha vida está indo bem apesar dos meus problemas de sono.*)
4. Despite the sleeping problems, I am now sticking to a certain course in my life. (*Apesar dos problemas de sono, agora estou seguindo um certo curso na minha vida.*)
5. Keeping my sleeping problems under control takes first priority. (*Manter meus problemas de sono sob controle é minha maior prioridade.*)
6. I need to concentrate on getting rid of my sleeping problems. (*Eu preciso me concentrar em me livrar dos meus problemas de sono.*)
7. It's important to keep on fighting these sleeping problems. (*É importante eu continuar lutando contra meus problemas de sono.*)
8. My thoughts and feelings about my sleeping problems must change before I can take important steps in my life. (*Meus pensamentos e sentimentos sobre meus problemas de sono devem mudar antes de eu dar passos importantes na minha vida.*)

FAPESP

INSTITUTO DE PSIQUIATRIA HCFMUSP