Psychological Assessment

Psicologia: Teoria e Prática, 24(2), ePTPPA14166. São Paulo, SP, 2022.
ISSN 1516-3687 (print), ISSN 1980-6906 (electronic version). Evaluation system: double blind review.
Universidade Presbiteriana Mackenzie.
https://doi.org/10.5935/1980-6906/ePTPPA14166.en

Cultural adaptation and psychometric characteristics of the *Weight Bias Internalization Scale* (WBIS)

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Received: November 17th, 2020.
Accepted: August 31st, 2021.

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Financial support: Research funded by the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico [CNPq]).

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Abstract

This study aimed to carry out the cultural adaptation and present initial evidence about the psychometric characteristics of the *Weight Bias Internalization Scale* in the Brazilian context, through three steps: translation, semantic validation, and pretest. The results indicated that the synthesis of the translations, performed by two independent translators, was considered unsatisfactory and it was necessary to obtain a new consensus version with an Expert Committee. This last one was back-translated and used in semantic validation with 18 people, confirming the proper understanding of the items after alterations in two of them. In the pretest, with 54 people, Cronbach's alpha was considered adequate (0.833), with floor and ceiling effects observed in nine and four items, respectively. Pearson's correlation coefficient showed the presence of strong and moderate correlations. The measurement of weight bias internalization represents an important tool to support more effective therapeutic strategies with a view to comprehensive and humanized care.

Keywords: obesity, social stigma, validation study, psychometrics, cultural adaptation

ADAPTAÇÃO CULTURAL E CARACTERÍSTICAS PSICOMÉTRICAS DA *WEIGHT BIAS INTERNALIZATION SCALE* (WBIS)

Resumo

Este estudo teve como objetivos realizar a adaptação cultural e apresentar evidências iniciais sobre as características psicométricas da *Weight Bias Internalization Scale* (WBIS) para o contexto brasileiro, por meio de três etapas: tradução, validação semântica e pré-teste. Como resultados, a síntese das traduções, realizada por dois tradutores independentes, foi considerada insatisfatória, sendo necessária a obtenção de uma nova versão consensual com um comitê de especialistas. Esta última foi retrotraduzida e utilizada na validação semântica com 18 pessoas, confirmando a compreensão adequada dos itens após alteração em dois deles. No pré-teste, com 54 pessoas, o alfa de Cronbach foi considerado adequado (0,833), sendo observados efeitos *floor* e *ceiling* em nove e quatro itens, respectivamente. O coeficiente de correlação de Pearson mostrou a presença de correlações fortes e moderadas. A mensuração do estigma internalizado do peso representa uma importante ferramenta para subsidiar estratégias terapêuticas mais eficazes, com vistas ao cuidado integral e humanizado.

Palavras-chave: obesidade, estigma social, estudo de validação, psicometria, adaptação cultural

ADAPTACIÓN CULTURAL DE LA *WEIGHT BIAS INTERNALIZATION SCALE* (WBIS)

Resumen

Este estudio tuvo como objetivo realizar la adaptación cultural y presentar evidencia inicial sobre las características psicométricas de la *Escala de Interiorización de Prejuicios sobre Obesidad (Weight Bias Internalization Scale* – WBIS) para el contexto brasileño, a través de tres etapas: traducción, validación semántica y *pretest*. La síntesis de las traducciones se consideró insatisfactoria y se obtuvo una nueva versión consensuada con un Comité de Expertos. Esta versión fue retrotraducida y utilizada en la vali-

dación semántica con 18 personas, lo que confirma la comprensión adecuada después de modificaciones en dos ítems. En el *pretest*, con 54 personas, el alfa de Cronbach se consideró adecuado (0,833), con efectos de *floor* y *ceiling* observados en nueve y cuatro ítems, respectivamente. El coeficiente de correlación de Pearson mostró la presencia de correlaciones fuertes y moderadas. La medición de la interiorización de los prejuicios sobre la obesidad representa una herramienta importante para apoyar estrategias terapéuticas más efectivas, con atención integral y humanizada.

Palabras clave: obesidad, estigma social, estudio de validación, psicometría, adaptación cultural

The term stigma was created by the Greeks to address the body marks of enslaved, criminals, or traitors, who were marked with cuts or fire for being considered inferior or having done something bad. Currently, marks – or attributes – may still be seen as a misfortune in some cultures, generating stereotypes that can cause discrimination and marginalization of those that present certain characteristics. The observation of attributes considered undesirable according to prejudice formed from social norms defines individuals as defective and inadequate, constituting a relationship of attribute and stereotype for a disqualified social identity (Goffman, 1988).

Stigma is present in several social, cultural, and health contexts, and being overweight can be stigmatized, with the justification that it compromises the quality of life of people with this health condition (Eisenberg et al., 2019). The increase in morbidity and mortality from other chronic diseases and conditions due to excess adipose tissue can result in physical and psychological harm that may be primarily caused by weight stigma, not necessarily the excess weight itself, regardless of the body mass index (BMI) (Wharton et al., 2020).

Weight stigma can also be explained by the existence of stereotypes based on the belief that excess weight is controllable and reversible and that it derives from the lack of will, inability of individuals to control themselves or adhere to healthy lifestyle habits, such as a balanced diet and practice of physical activity (Eisenberg et al., 2019). The victim's social life is accompanied by shame, anxiety, stress, depression, low self-esteem, and dissatisfaction with their body image (Wu & Berry, 2018).

Weight gain increases the risk of stigmatization and the effects of weight stigma contribute to weight gain, constituting a cycle that compromises physical and mental health (Wharton et al., 2020). Weight bias internalization occurs when observing and agreeing with the stereotypes related to the social identity of an overweight person, which attributes negative characteristics to oneself or even self-depreciation (Durso & Latner, 2008).

Weight bias internalization can mediate the relationship between stigmatization and eating disorder behaviors, such as increased food consumption, emotional eating, bulimic behaviors (Wu & Berry, 2018), and low motivation for healthy eating habits and weight loss (Vartanian et al., 2018). It may also be associated with anxiety, depression, body dissatisfaction, and low self-esteem (Wu & Berry, 2018); avoidance of the practice or low levels of physical activity (Vartanian et al., 2018); absence from the health service; increased risk of metabolic diseases; and lower quality of life (Eisenberg et al., 2019).

In addition, the psychosocial consequences related to overweight configure an axis that needs greater attention from professionals in general, with the measurement of internalized weight bias being a fundamental resource to support the therapeutic approach to obesity. Given the lack of a validated instrument in Brazil, this study aimed to carry out the cultural adaptation and assessment of the psychometric characteristics of the *Weight Bias*

Internalization Scale (WBIS), namely: the analysis of Cronbach's alpha, floor and ceiling effects, and the Pearson's correlation coefficient.

The WBIS is a scale that aims to assess the internalization of weight bias among overweight and obese individuals, that is, it measures the internalization of negative characteristics that these people attribute to themselves. The items encompass different aspects, such as the acceptance or rejection of excess weight, desire for change, effect of the perception of excess weight on mood, perception of personal value, social interaction, and the recognition of social injustice related to weight.

The version of the WBIS administered to participants in the original study (n = 198) consisted of 19 items, with a Cronbach's alpha value of 0.85. The evaluation of the item-total correlation defined the exclusion of items with a correlation equal to or less than 0.40. A total of 13 items were maintained, which configured an internal consistency of 0.90, and were submitted to exploratory factor analysis, obtaining two factors. When carrying out the confirmatory factor analysis, two items were excluded due to a low or moderate factor (< 0.50), resulting in a scale of 11 items represented by a single factor and an internal consistency of 0.90 (Durso & Latner, 2008).

The results revealed that individuals with a higher level of internalized bias had a higher frequency of compulsive food consumption, depression, anxiety, stress, low self-esteem, and greater concern with body image. The 11 items are scored on a seven-point Likert-type scale, which assesses the agreement with the statements. The WBIS score ranges from 11 to 77 points, indicating no internalization up to a serious internalization of the weight bias, with items 1 and 9 being evaluated with a reverse score (Durso & Latner, 2008).

It is internationally recognized for its originality, consistent psychometric aspects, and wide use in various studies (Hilbert et al., 2014). Among adults, its psychometric properties have been evaluated in different contexts and countries, such as Italy, Germany, Spain, United States, and Iran (Roberto et al., 2012; Hilbert et al., 2014; Sarrías-Gómez & Baile, 2015; Innamorati et al., 2017; Lin et al., 2020).

Method

Participants

In step 1, professors of the health and human sciences area took part in the translation process, the synthesis of translations, and comprised the expert committee. They were selected based on their knowledge of the construct, target language, and concepts of cultural adaptation and validation of measurement instruments. Two professors of the health area performed the translation and synthesis of the translations. The expert committee was composed of five members: a psychologist; a nutritionist; and a nurse, the last two being professors with extensive knowledge in the area of cultural adaptation and validation of

measurement instruments; a translator from a specialized company, who had extensive knowledge in the target language; and a member of the target population to assist in the intelligibility of the items of the scale.

In steps 2 and 3, participants and former participants of a food education program and a physical activity program of a university in Ribeirão Preto, in the state of São Paulo, were included. Men and women aged between 18 and 59 years and with a BMI of 25kg/m^2 or greater, obtained through anthropometric measurements, were selected. Both programs had a room with an electronic platform digital scale and a fixed stadiometer. When considering the previously mentioned requirements, the participants needed to classify themselves as "slightly overweight", "overweight" or "excessively overweight" in the self-identification of weight verified by a sociodemographic characterization questionnaire. People who considered themselves to be of "normal weight", "slightly underweight", "underweight" or "excessively underweight" were excluded from the study, according to the criteria adopted in the original study (Durso & Latner, 2008). Step 2 participants, which was the step of the semantic validation of the WBIS, did not participate in step 3, which was the process of evaluating the scale's psychometric characteristics.

Procedures

The cultural adaptation and validation of the WBIS followed the methodological framework proposed by Beaton et al. (2000) and Ferrer et al. (1996). Accordingly, this involved the translation (translation 1 and translation 2), synthesis of translations, evaluation by the expert committee, back translation, comparison of the original version with the back-translated version (step 1), semantic validation (step 2), and pretest (step 3).

The study began with the authorization of the cultural adaptation and validation of the WBIS for use in Brazil by the authors of the original scale, via e-mail. Initially, the translations of the WBIS from English to Portuguese were carried out independently by two professors, fluent in both languages, one from the medical field and the other from the nutrition field. The main researcher and the translators compared the translations to obtain a single version, the 1st Portuguese Consensual Version (PCV1). However, the resulting version was considered divergent from the translated versions, which led to its disregard, and a new PCV1 was obtained with the assistance of the Expert Committee.

The expert committee meeting took place through rounds of verification of the opinions of each member for each question and, later, for the response options, with an agreement of 80% or greater being necessary for each item, as well as the committee member representing the target population having to approve the final decision in each round. At this time, the experts analyzed the semantic, idiomatic, conceptual, and cultural equivalences of the WBIS based on the original version and translations (Beaton et al., 2000). The 1st Portuguese Consensual Version obtained with the expert committee (PCV1-EC) was back-translated by

another professional translator from another specialized company. This version was sent to the authors of the scale for comparison with the original version, generating the 2nd Portuguese Consensual Version (PCV2).

Subsequently, the semantic validation of the WBIS took place in accordance with what was established by the DISABKIDS Group (DisabKids Group, 2002, 2004), which advocates the assessment of acceptance, relevance, and understanding of the items, in order to adapt, when necessary, the writing of the items for clarity (DisabKids Group, 2004). For this, 18 men and women with different levels of education were selected. As recommended by this group, the total number of participants should be based on the distribution of people by subsets of the scale, with a minimum of three respondents per subset (DisabKids Group, 2002). With authorization from the representative of the DISABKIDS Group in Brazil, the General Impression Form and the Specific Form (DisabKids Group, 2002) were used. The 18 participants answered the PCV2, the sociodemographic characterization questionnaire, the Brazil Economic Classification Criteria (Associação Brasileira de Empresas de Pesquisa [Abep], 2016), and the General Impression Form. Next, nine participants responded to items 1 to 5 of the Specific Form, and the other nine responded to items 6 to 11 (DisabKids Group, 2004). The changes indicated in this step culminated in obtaining the adapted version.

In the pretest, 54 individuals were selected to assess the reliability, responsiveness, and convergent construct validity of the WBIS. According to Terwee et al. (2007), it takes a minimum of 50 people to assess the psychometric properties during the field study simulation. Item responsiveness was assessed through the analysis of floor and ceiling effects, which refers to the distribution of, at least, 15% of responses in the lowest or highest score of the measure. The occurrence of this effect is indicative of low responsiveness, that is, a low capacity to capture changes over time. Reliability was assessed through the Cronbach's alpha value, which is widely used to verify the internal consistency of items, and the recommendation of a value between 0.70 and 0.95 indicating satisfactory internal consistency was adopted (Terwee et al., 2007). The item-total correlation and Cronbach's alpha value were also verified when the item is excluded.

Convergent validity was assessed using the multitrait-multimethod (MTMM) analysis procedure, available in the Multitrait Analysis Program (MAP), which determines the statistical significance of the correlation values. The criteria proposed by Ajzen and Fishbein (1980) were used to assess the correlations, with correlation values below 0.30 considered to be of little value in practice, even if statistically significant; values less than 0.30 to be weak correlations; values between 0.30 and 0.50, moderate correlations; and values above 0.50, strong correlations. The level of statistical significance adopted in this study was $p < 0.05$. The respondents completed the sociodemographic characterization questionnaire, the Brazil Economic Classification Criteria (Abep, 2016), and the adapted version of the WBIS. This study was submitted to and approved by the Research Ethics Committee of the Ribeirão Preto School

of Nursing of the University of São Paulo (Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo [EERP-USP]) under process No. 130307/2017-3. The participants consented to voluntarily participate in this study.

Results

After disregarding PCV1, the Expert Committee's assessment resulted in a consensual version for each item. The PCV1-EC was back-translated and sent by e-mail to the authors of the scale for evaluation, who considered it satisfactory, only with considerations in relation to item 7: "I judge my value as a person mainly by my body weight". The main author of the scale reported that the words "major" and "mainly" have slightly different meanings, as "major" refers to one of the most important aspects among others, while "mainly" indicates that it is the most important aspect in relation to the others. Accordingly, a consensus was reached: "My weight is one of the main ways to judge my worth as a person", which was approved by the authors, with the PCV2 resulting from this process used in the semantic validation.

For the semantic validation, six people were selected from each level of schooling (elementary, high school, and higher education). The characterization of the participants showed the presence of both sexes, mostly women (83.3%), with a mean age of 44.4 years (*SD* = 11.84). The presence of overweight individuals with grade III obesity was observed, with 44.4% considering themselves overweight. The mean BMI was 32.84kg/m^2 (*SD* = 4.02), ranging from 25.59 to 40.59kg/m^2, and the mean WBIS score was 35.4 points (*SD* = 13.33), ranging from 12 to 70 points. The economic classification demonstrated the presence of individuals from class A to C2, according to the criterion adopted by the instrument used (Abep, 2016).

The answers to the General Impression Form indicated the PCV2 as good (66.7%), easy to understand (61.2%), with no difficulty in using the answer categories (61.2%), and with items considered very relevant for the assessment of the internalized weight bias (72.3%). Most of the participants did not want to change (77.7%) nor add anything to the scale (83.3%). The reports that accompanied the responses indicated broad involvement of respondents with issues related to body and food, sometimes suggesting more questions related to emotional factors ("What makes you eat so much?" and "What causes you to not be motivated to lose weight?"), etiological factors ("Understanding why we are fat" and "Why there are people who do not feel the urge to eat"), as well as aspects that collude with the explicit stigma ("Because, in general, the perception is negative and affects interpersonal relationships"). Binge eating or inadequate eating habits are behaviors associated with stigmatization, which may be an etiological factor for obesity (Wu & Berry, 2018), however, they are not aspects assessed by the scale.

In turn, the semantic validation with the Specific Form indicated that the PCV2 could be designated as relevant for the overweight condition, with considerations from all participants regarding items 1, 3, 5, and 9. The highest proportion of irrelevance was obtained for item 7, by only four people (22.2%), of whom three (16.6%) had primary education, and

one (5.5%) had higher education. Items 1, 2, 3, 4, 5, 6, 9, and 11 were judged to be easily understandable by all participants. The answer options were conceptualized as clear by all participants for items 2, 4, and 9.

The analysis of the interpretation of the items showed discrepancies in the interpretation of the meaning of items 4 and 7. In item 4 – "I wish I could drastically change my weight" –, there were differences in the answers regarding their meaning, due to the expansion of possibilities for the construction: "To lose weight quickly"; "To lose a lot of weight"; "To totally change one's lifestyle and lose weight"; "To change weight drastically to impact someone"; "To lose a lot of weight to reach a goal"; "To be another weight to be more beautiful".

According to the lead author of the WBIS, the expected meaning of the item could cover all the interpretations provided, as "drastically change" involves losing a lot of weight, losing weight quickly, as well as using various methods to achieve this; and that the words "radically", "totally", and "completely" could guarantee the expected meaning. Therefore, the word "drastically" was replaced by the word "radically", as it was considered better known among people with the levels of education assessed.

In item 7 – "My weight is one of the most important ways to judge my worth as a person" –, there were a significant number of misinterpretations (33.3%), equally divided between people from the three levels of education, as reported by the people with elementary education. Here are the reports obtained:

- People with elementary education: "The person should not be judged by weight" and "There are people who see the weight and not the person's heart and character. And what's inside is more valuable".
- People with high school education: "In the places I go, my weight is already a form of judgment" and "Whether people can judge me as a person according to my weight and my ability".
- People with higher education: "Society's judgment on physical appearance occurs. The physical is a construct of social values and this judges the value of people" and "In society, being overweight devalues the person".

Reports of meanings were observed according to the view "of the other", and not the view "of oneself", according to the appropriate meaning for the item, revealing a need for alteration.

The highest proportion of incorrect interpretation of the meaning of the item by people with higher education was in item 7, with two participants (11.1%). Among the participants with high school education, errors of interpretation were in item 7 (11.1%) and in item 8 (11.1%), while for individuals with elementary education, this occurred in item 8 (11.1%).

All participants presented the correct description of the meaning of each answer option. Therefore, the meaning reports provided by the participants were not incorporated due to the similarity with the original sentence, with just slight modifications of words or phrases. The responses obtained from the general and specific forms indicated that, in addition to the changes made in items 4 and 7, there was no need to modify the other items or the response categories. Thus, the adapted version was obtained (Table 1).

Table 1

Adapted version of the WBIS. Ribeirão Preto, SP, Brazil, 2018.

	Por favor, indique o quanto você concorda com cada item
Item 1	Como uma pessoa que está acima do peso, sinto que sou tão competente quanto qualquer outra pessoa.
Item 2	Eu sou menos atraente do que a maioria das pessoas por causa do meu peso.
Item 3	Sinto-me ansioso(a) por estar acima do peso, devido ao que as pessoas podem pensar de mim.
Item 4	Eu gostaria de poder mudar radicalmente meu peso.
Item 5	Quando eu penso muito sobre estar acima do peso, me sinto deprimido(a).
Item 6	Eu me odeio por estar acima do peso.
Item 7	O meu peso é uma das formas mais importantes para eu julgar meu valor como pessoa.
Item 8	Eu não sinto que mereço ter uma vida realmente satisfatória enquanto eu estiver acima do peso.
Item 9	Eu estou bem com o meu peso atual.
Item 10	Por estar acima do peso, eu não me sinto como eu mesmo(a).
Item 11	Por causa do meu peso, eu não entendo como alguém atraente gostaria de namorar comigo.

Note. Answer Categories: "Discordo totalmente" (Totally disagree), "Discordo moderadamente" (Moderately disagree), "Discordo levemente" (Slightly disagree), "Não concordo nem discordo" (Neither agree nor disagree), "Concordo levemente" (Slightly agree), "Concordo moderadamente" (Moderately agree), "Concordo totalmente" (Totally agree).

In the pretest (n = 54), men (13%) and women (87%) were included, with a mean age of 44.83 years (SD = 10.01) and a predominance of people with high school education (46.3%). The BMI classification ranged from overweight to grade III obesity and most considered themselves overweight (51.9%). The mean BMI was 32.6kg/m² (SD = 4.96), ranging from 25.76kg/m² to 43.54kg/m². The mean WBIS score was 33.85 points (SD = 13.36), ranging from 11 to 68 points. The economic classification showed the presence of individuals from class A to C2.

The assessment of Cronbach's alpha indicated a value of 0.833, comparable to that obtained in the original study when measured with a larger sample (n = 198, Cronbach's alpha

= 0.90). The evaluation of the item-total correlation showed strong (from 0.523 to 0.665) and moderate correlations (from 0.487 to 0.490), with most correlations of strong magnitude and only one weak correlation (0.092) for item 1 with the total (Ajzen & Fishbein, 1980). The analysis of Cronbach's alpha with the item excluded to verify the relevance of each item in maintaining the instrument's internal consistency showed an increase in Cronbach's alpha when item 1 was excluded from the analysis (Cronbach's alpha = 0.854).

The verification of the instrument's responsiveness through the assessment of floor and ceiling effects showed that most items (1, 2, 3, 5, 6, 7, 8, 10, and 11) presented floor effects, with a variation of 22.22% to 77.78% of the responses, while items 3, 4, 5, and 9 presented ceiling effects, ranging from 16.67% to 46.30% of the responses, as shown in Table 2.

Table 2

Distribution (n; %) of the scores and floor and ceiling effects of the adapted version of the WBIS

Item	Answer categories						
	1	2	3	4	5	6	7
1	24 (44.44)	9 (16.67)	6 (11.11)	1 (1.85)	3 (5.56)	7 (12.96)	4 (7.41)
2	23 (42.59)	5 (9.26)	4 (7.41)	3 (5.56)	5 (9.26)	7 (12.96)	7 (12.96)
3	26 (48.15)	5 (9.26)	1 (1.85)	4 (7.41)	5 (9.26)	3 (5.56)	10 (18.52)
4	5 (9.26)	1 (1.85)	2 (3.70)	4 (7.41)	6 (11.11)	11 (20.37)	25 (46.3)
5	12 (22.22)	4 (7.41)	6 (11.11)	3 (5.56)	10 (18.52)	10 (18.52)	9 (16.67)
6	42 (77.78)	2 (3.7)	2 (3.70)	1 (1.85)	2 (3.70)	1 (1.85)	4 (7.41)
7	41 (75.93)	4 (7.41)	2 (3.70)	1 (1.85)	2 (3.70)	0 (0)	4 (7.41)
8	42 (77.78)	4 (7.41)	1 (1.85)	0 (0)	3 (5.56)	0 (0)	4 (7.41)
9	4 (7.41)	4 (7.41)	7 (12.96)	3 (5.56)	12 (22.22)	8 (14.81)	16 (29.63)
10	27 (50)	5 (9.26)	3 (5.56)	3 (5.56)	7 (12.96)	1 (1.85)	8 (14.81)
11	36 (66.67)	3 (5.56)	2 (3.7)	3 (5.56)	2 (3.7)	2 (3.7)	6 (11.11)

Note. Answer categories: 1. "Totally disagree", 2. "Moderately disagree", 3. "Slightly disagree", 4. "Neither agree nor disagree", 5. "Slightly agree", 6. "Moderately agree", and 7. "Totally agree". Gray cells indicate floor effect in Answer category 1 and ceiling effect in Answer category 7.

In addition, the analysis of the Pearson's correlation coefficient values between the items, using the MTMM analysis procedure, showed the presence of correlations of strong ($r > 0.50$) to moderate ($0.30 \leq r \leq 0.50$) magnitudes, indicating relevant results for convergent validity, as presented in Table 3.

Table 3

Pearson's correlation coefficient and p-value *of the adapted version of the WBIS*

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
Item 1	1.000	-0.076	-0.042	0.052	-0.153	0.048	0.062	0.334	0.076	0.186	0.118
		(0.583)	(0.765)	(0.711)	(0.270)	(0.729)	(0.655)	(0.014)	(0.586)	(0.179)	(0.394)
Item 2		1.000	0.444	0.359	0.531	0.572	0.120	0.223	0.403	0.361	0.548
			(0.001)	(0.008)	(< 0.001)	(< 0.001)	(0.387)	(0.104)	(0.003)	(0.007)	(< 0.001)
Item 3			1.000	0.363	0.369	0.320	0.356	0.231	0.372	0.287	0.522
				(0.007)	(0.006)	(0.018)	(0.008)	(0.093)	(0.006)	(0.036)	(< 0.001)
Item 4				1.000	0.622	0.263	0.253	0.153	0.401	0.256	0.293
					(< 0.001)	(0.055)	(0.065)	(0.269)	(0.003)	(0.062)	(0.032)
Item 5					1.000	0.461	0.401	0.362	0.434	0.348	0.368
						(< 0.001)	(0.003)	(0.007)	(0.001)	(0.010)	(0.006)
Item 6						1.000	0.498	0.662	0.284	0.489	0.415
							(< 0.001)	(< 0.001)	0.038	(< 0.001)	(0.002)
Item 7							1.000	0.609	0.138	0.223	0.372
								(< 0.001)	(0.321)	(0.105)	(0.006)
Item 8								1.000	0.266	0.496	0.254
									(0.052)	(< 0.001)	(0.063)
Item 9									1.000	0.106	0.289
										(0.444)	(0.034)
Item 10										1.000	0.500
											(<0.001)
Item 11											1.000

Note. Values in parentheses: statistical significance value of each correlation; statistical significance: $p < 0.05$.

Discussion

At the beginning of the cultural adaptation process, the translators were selected based on the proposed methodological rigor, in order to avoid linguistic, cultural, and theoretical or practical biases (Beaton et al., 2000). According to Beaton et al. (2000), different profiles of translators are important to ensure different perspectives on the instrument, with one translator having knowledge about the concepts investigated from a clinical perspective and another providing vocabulary closer to that commonly used by the target population (Epstein et al., 2015). Therefore, the choice of translators for the current study was an extremely important aspect to obtain quality translations.

Despite being an important step in the process, the synthesis of the translations is rarely reported in methodological studies of cultural adaptation in the international scenario (Epstein et al, 2015). However, Brazilian studies in the area have used this step, prior to submission to the expert committee (Andrade, 2016) and back translation (Alexandre & Coluci, 2011). The committee is essential to guarantee the validity of the content according to the equivalence between the synthesis of the translations and the original instrument (Andrade, 2016). It can be composed of researchers, translators, healthcare providers, methodologists, and members of the population, aiming to maintain the clarity and relevance of the items (Epstein et al., 2015). The wording of the items must adequately express the concept assessed (Alexandre & Coluci, 2011).

The expert committee's assessment in this study was an imperative resource for the analysis of the translations and decision-making in the creation of the PCV1-EC. The participation of a member of the target population as a member of the committee was important for the final decision on each item and the implementation of this step. The PCV1-EC provided a version consistent with the translations and the original version of the WBIS, especially regarding conceptual, idiomatic, semantic, and cultural equivalences, according to the language used by people with different levels of education.

The back translation of the WBIS took place after the expert committee review, following the recommendations of Ferrer et al. (1996), identifying possible errors or difficulties in comprehension prior to the back translation, as well as evaluating the acceptance, relevance, and understanding of the instrument by specialists in the field. There is no agreement regarding the number and attributes of the back translators, as well as the moment of the study in which it is applied, however, it is a procedure capable of promoting communication between the researchers and the authors of the original instrument, reinforcing the methodological process (Epstein et al., 2015).

Subsequently, the instruments for semantic validation developed by the DISABKIDS Group enabled the assessment of the comprehensibility, clarity, and relevance, in addition to proposals for modifying the items from the perspective of the participants (DisabKids Group, 2004). In the present study, this step showed a high proportion of correct interpretations, with questions and answer categories considered easily understandable and relevant. Only items 4 and 7 underwent minor changes to guarantee the expected meaning. Among the 18 participants, two (11.1%) had some difficulty answering the cognitive interview. In particular, one participant with high school education had difficulty using the answer categories in seven items (3, 5, 6, 7, 8, 10, and 11), however, she later reported that the difficulty was not due to the comprehension of the item, but rather in choosing the most appropriate answer option. One participant with high school education was unable to comprehend the meaning of item 10, which was understood after the researcher explained it. Regarding difficulties, items 8 and 10 presented the highest proportions, with 11.1% of the answers in each item, however,

item 7 corresponds to the highest percentage of incorrect interpretations (33.3%), which justified its alteration.

The rigorous performance of the steps of this study ensured that the items were adequate to the target language of the population, without adding or excluding items or changing the response options, since this article is configured as an initial analysis of psychometric characteristics of the scale. Performing the pretest enabled the assessment of the reliability, responsiveness, and the convergent construct validity of the adapted version of the WBIS. Regarding the reliability of the scale, the results demonstrated that the adapted WBIS presented an adequate Cronbach's alpha value, revealing good internal consistency (Terwee et al. 2007). According to Terwee et al. (2007), a positive assessment for internal consistency occurs when Cronbach's alpha values are between 0.70 and 0.95, with the highest values in instruments with a greater number of items. However, values of 0.90 or greater may indicate the presence of redundant items, which assess the same content but are formulated in different ways, which does not determine the homogeneity of the items (Streiner, 2003).

One must consider that Cronbach's alpha is limited by a relationship with the number of items in the instrument and the sample size, which may underestimate the index in small samples and/or instruments with few items, or overestimate the index in large samples and/or instruments with many items (Tavakol & Dennick, 2011).

It should be noted that the stability of the scale was not assessed through the test-retest procedure due to the changing nature of the construct in question (Crandall, 1994). Stigmatization is a dynamic process with influences beyond the historical-cultural context, causing immediate effects on the relationship between stigmatizers and stigmatized in a given social environment (Durso & Latner, 2008). The dynamics that accompany this construct could influence the results, interfering with the accuracy of the test-retest evaluation. Furthermore, although stability is a relevant property of the instrument, internal consistency is a widely used method to indicate a reliable test (Tavakol & Dennick, 2011).

Regarding the presence of floor and ceiling effects, there was an occurrence of both, with a higher frequency of the former. There is a consensus that a responsive instrument is capable of detecting changes, which may be clinical changes, due to therapy or even changes in the construct over time. The distribution of responses in poles on the scale reflects the decrease in the ability to capture changes (Terwee et al., 2007). Therefore, it would be interesting to evaluate this indicator in future studies.

Regarding the convergent construct validity, verified with the evaluation of Pearson's correlation coefficient, correlations of strong and moderate magnitudes were obtained according to the recommended criteria. However, to contemplate the construct validity, it is necessary to evaluate other psychometric characteristics, with the performance of confirmatory factor analysis being essential for this (Pasquali, 2005).

Concerning the limitations of this study, it is essential to emphasize the greater number of female participants and those from higher social classes, which may have affected the results obtained. Furthermore, the cultural adaptation of instruments is not only related to differences between countries and/or languages, as regional and local cultural diversity may lack language adaptation (Reichenheim & Moraes, 2007). Cultural adaptation is not limited to space, as language changes can occur over time in the same population, reinforcing the need for new adaptations (Beaton et al., 2000).

It is necessary to consider that the assessment of convergent validity, reliability, and responsiveness must be complemented with other analyses and psychometric assessment procedures for the validation and use of the WBIS in the Brazilian context. A future performance of confirmatory factor analysis would demonstrate whether all the items measure the same construct effectively. Cronbach's alpha analysis should also be performed with a larger and more representative sample of the population, in order to observe the correlation between the items, with closer numbers of men and women through a field study. Therefore, further studies are needed to assess the instrument's psychometric properties.

Based on its validity, the WBIS can be used at an epidemiological level, considering the need to compare the manifestation of the construct in different cultures, in addition to the possibility of application in the fields of clinical research – particularly, among healthcare providers –, since it is a concept that cannot be directly observed, but can be measured.

The application of this scale by healthcare providers can also favor a broader view of subjective issues that are fundamental for comprehensive and humanized care, which, sometimes, is not addressed by the simplified and restricted approach to the patient's individuality. In this way, it will be possible to provide support for the evaluation of more effective therapeutic strategies that cover aspects of the internalization of weight bias. This instrument can also help in monitoring the manifestation of the psychosocial aspects of obesity in individuals affected by this condition.

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