

## Brief Methodological Report

# Cross-Cultural Adaptation and Validation of the Brazilian Version of the Wisconsin Brief Pain Questionnaire

Flávia O. Toledo, PT, MS, Patrícia S. Barros, PT, PhD, Michael Herdman, Phil, PhD, Gemma Vilagut, STAT, MS, Geraldo C. Reis, STAT, Jordi Alonso, MD, PhD, and Cláudia Ferreira da Rosa Sobreira, MD, PhD

*Department of Neurosciences (F.O.T., P.S.B., G.C.R., C.F.d.R.S.), Faculty of Medicine of Ribeirão Preto, University of São Paulo, São Paulo, Brazil; IMIM-Institut de Recerca de l'Hospital del Mar (M.H., G.V., J.A.), Barcelona; and CIBER en Epidemiología y Salud Pública (G.V., J.A.), Barcelona, Spain*

---

## Abstract

**Context.** Chronic pain is a common complaint among patients with muscular disease. The Wisconsin Brief Pain Questionnaire (WBPQ) has been used to quantify pain severity and pain interference with daily functions.

**Objectives.** To translate the WBPQ for use with Brazilian patients and to evaluate the psychometric properties of the adaptation.

**Methods.** We conducted a cross-cultural adaptation of the original English version of the WBPQ for use in Brazil (WBPQ-B) and evaluated the psychometric properties of the adapted version. The original questionnaire was translated, evaluated by an expert panel, pilot tested in 40 patients, and back-translated. Subsequently, the tool was administered, in a cross-sectional study, to 100 adult patients who had muscular disease and were being attended to at our university hospital.

**Results.** We performed a confirmatory factor analysis and assessed the reliability and validity of the questionnaire (Appendix). The two-factor structure (pain intensity and pain interference) was confirmed satisfactorily. Internal consistency for both scales was adequate (Cronbach's alpha = 0.74 and 0.79, respectively), as was the interrater stability (intraclass correlation coefficients = 0.88 and 0.92, respectively). Convergent validity with the 36-Item Short Form Health Survey was supported by confirmation of a priori hypotheses of negative and satisfactory correlations between the WBPQ-B and some of the 36-Item Short Form Health Survey domains. The pain interference scale correlated higher with the mental summary component. Known-group validity analysis showed that the pain intensity items and scale of the WBPQ-B were higher in the groups where patients with exercise intolerance were concentrated.

---

*Address correspondence to:* Cláudia Ferreira da Rosa Sobreira, MD, PhD, Departamento de Neurociências, sala 432, HC 4° andar, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, Rodovia dos Bandeirantes 3900, Campus

Universitário Monte Alegre, Ribeirão Preto, SP 14049-900, Brazil. E-mail: csobreira@fmrp.usp.br

*Accepted for publication:* July 24, 2012.

**Conclusion.** We found the WBPQ-B to be a reliable and valid instrument for pain assessment of Brazilians who have muscular disease. The survey presents similar psychometric properties to the original version. *J Pain Symptom Manage* 2013;46:121–130. © 2013 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

### **Key Words**

*Wisconsin Brief Pain Questionnaire, cross-cultural adaptation, reliability, validation, myalgia, myopathy*

## **Introduction**

Chronic pain is a common complaint in patients with skeletal muscle disease. Various methods traditionally used to assess pain provide reproducible results as measures of pain intensity, but they provide little information about the influence of pain on a patient's functional capacity.<sup>1</sup>

Daut et al.<sup>2</sup> developed the Wisconsin Brief Pain Questionnaire (WBPQ), which is a self-administered survey that can be used to quantify pain severity and pain interference with various components of patients' quality of life.<sup>2</sup> The WBPQ has been administered to patients with different health problems.<sup>3–5</sup> To date, no validated Brazilian version of the WBPQ has been published.

The objectives of this study were to conduct a cross-cultural adaptation of the WBPQ to the Portuguese language spoken in Brazil (WBPQ-B) and assess the measurement model and the reliability and validity of the pain intensity and pain interference scales of the WBPQ-B in patients who have muscular disease.

## **Methods**

### *Cross-Cultural Adaptation of the WBPQ*

The original English version of the WBPQ was adapted to Brazilian Portuguese following internationally recommended guidelines<sup>6–9</sup> (Fig. 1). The administration of the preliminary version in a pilot study had the purpose of identifying problematic items and ensuring that the adapted instrument was comprehensible and acceptable to patients with differing levels of education.

### *Validation Study*

**Design.** This was a single-center, observational, cross-sectional study specifically designed to validate the WBPQ-B.

**Subjects.** Patients attending the outpatient neuromuscular clinic of our University Hospital were invited to participate in this study, which was approved by the Ethics Committee. All patients signed written informed consent. All of them had a myopathy (muscular dystrophy, metabolic myopathy, or myopathy with minimal changes) and pain as a major symptom. One hundred of a total of 107 patients approached agreed to participate in the study.

### *Outcome Measures*

**WBPQ.** The WBPQ has 17 items to assess the pain history, localization, and relationship to the underlying disease, including two scales to assess pain intensity (three items) and pain interference with function (six items). This instrument also assesses treatments or medications for pain relief; however, in this study, we focused on the two scales regarding pain intensity and pain interference with function. The pain intensity items ask about pain at its worst, pain on average in the last month, and pain right now, that is, on completing the questionnaire. The pain intensity items are answered on numeric rating scales, with 0 representing "no pain" and 10 representing "pain as bad as you can imagine." The items assessing pain interference with function are measured on a Likert scale, where 0 represents "not at all," 1 "a little bit," 2 "moderately," 3 "quite a bit," and 4 "extremely." Aspects covered in the pain interference scale include impact on mood, social relationships, walking ability, sleep, work, and enjoyment of life. Scores are obtained by summing the responses to each item and range from 0 to 30 on the pain intensity scale and from 0 to 24 on the pain interference with function scale. When one or more items are missing, the score for that scale is not calculated. Higher scores

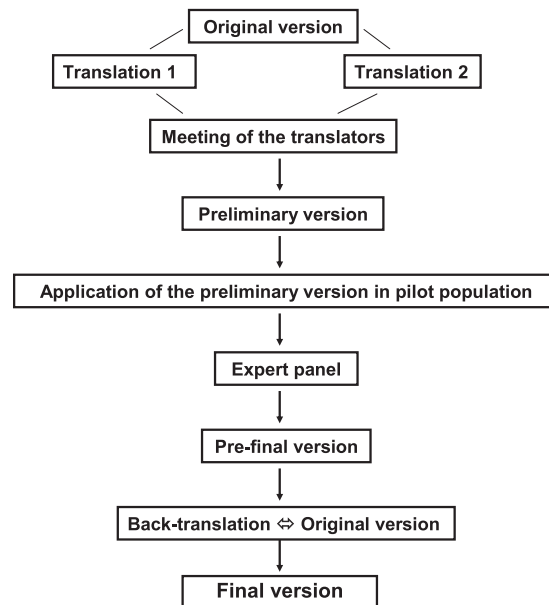


Fig. 1. Process of cross-cultural adaptation of the Wisconsin Brief Pain Questionnaire from English to Brazilian Portuguese. Translations 1 and 2 were independently performed by two native Brazilian translators who were fluent in English. The expert panel, composed of three of the authors who were all fluent in Brazilian Portuguese and English, agreed on the penultimate version after taking into account the results of the pilot testing. Back-translation to English was performed by a bilingual translator whose native tongue was English but who was fluent in Brazilian Portuguese and who had not seen the original version. The back-translated version was compared with the original by two of the current authors who did not make any changes, given total equivalence.

indicate worse pain and greater interference with daily function.<sup>2</sup>

*Medical Outcomes Study 36-Item Short Form Health Survey.* The 36-Item Short Form Health Survey (SF-36) is a questionnaire comprising 36 items organized in eight domains covering physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health. For each domain, scores range from 0 to 100, with higher scores reflecting a better health status and lower scores representing a worse health status.<sup>10,11</sup> The SF-36 provides a physical component summary (PCS) and a mental component summary (MCS), which were calculated as recommended by the developers<sup>12</sup> but using country-specific weights from the Spanish general population.<sup>13,14</sup> We used PCS and MCS score means that were expected for the Spanish general population (mean = 50; SD = 10) as there are no reference values for the general Brazilian population. Because the bodily pain item of the SF-36 might influence the correlation of the PCS with the WBPQ-B items and scales, we recalculated the PCS excluding the bodily pain domain (PCS-BP).

#### *Other Variables*

Data also were collected on patients' demographic and clinical characteristics (diagnosis and time since diagnosis).

#### *Data Collection*

Data were collected during the face-to-face interviews performed by two interviewers who underwent training to ensure standardization in the interview procedure. When possible, the WBPQ-B and the SF-36 were self-administered. Otherwise, the interviewer read and filled out the questionnaires according to the patient's answers. Patients were interviewed while waiting for the routine medical consultation. The interviewers first recorded the patients' sociodemographic and clinical characteristics and subsequently asked the patients to complete the WBPQ-B, followed by the SF-36. To evaluate interrater reliability, 14 patients were independently interviewed by the two interviewers.

#### *Sample Size*

Following standard recommendations, the sample size was set at 100 patients because we

were interested in the scales measuring pain intensity and pain interference, which contain a total of nine items.<sup>15,16</sup>

### Statistical Analyses

Frequency distributions of patients' demographic and clinical characteristics were obtained. The distribution of scores for the WBPQ-B was evaluated by calculating the following: mean, SD, percentage of patients with missing values, percentage of patients with the best possible score (ceiling), and the percentage of patients with the worst possible score (floor).

As a previous study using exploratory analysis had shown that pain intensity and pain interference scales loaded clearly onto two different factors, we assessed the measurement model of the WBPQ-B using confirmatory factor analysis (CFA).<sup>17,18</sup> The robust weighted least squares estimator was applied (WLSMV in *Mplus*, Muthén & Muthén, Los Angeles, CA). Goodness of fit was assessed with the following fit indices: 1) confirmatory fit index; 2) Tucker-Lewis index (both indicating good fit if their values exceed 0.95); 3) root mean square error of approximation, where values below 0.08 indicate adequate fit and values below 0.05 indicate good fit; and 4) weighted root mean square residual, which indicates adequate fit if it is below 1.0.<sup>19–22</sup> Other issues that were taken into account to assess model fit were the degree of significance of the factor loadings and the fact that the residual variances did not take negative values for any of the items.<sup>22,23</sup>

The internal consistency was estimated through calculation of Cronbach's alpha. Values above 0.70 indicate adequate internal consistency for group comparisons. Item-total correlations were tested to determine the contribution of each item to the overall scale. Correlation coefficients above 0.41 were considered satisfactory.<sup>24</sup> Interrater stability was calculated using the intraclass correlation coefficient, both for the overall scores and at the item level.<sup>25,26</sup>

Convergent validity was analyzed by examining correlations between the WBPQ-B items worst pain and average pain separately, as well as WBPQ-B scales and SF-36 domains and summary components (PCS, PCS-BP, and MCS) using Spearman's correlation coefficient. Based on scale content, we expected the correlation coefficients to be negative and we hypothesized

that the WBPQ-B pain intensity scale and items would correlate most highly with the SF-36 domains of bodily pain and physical functioning. We expected the pain interference scale of the WBPQ-B to show moderate correlations over a larger range of domains than the pain intensity scale, given that the interference scale covers more aspects of daily living and well-being. We expected the WBPQ-B pain intensity scale to correlate more highly with the PCS score and the pain interference scale to correlate more highly with the MCS score of the SF-36. The degree of correlation was classified according to the following criteria: correlation coefficient  $\leq 0.20$ , very low; 0.21–0.40, low; 0.41–0.60, moderate; 0.61–0.80, high; and 0.80–1.0, very high.<sup>27</sup>

The known-group validity of the WBPQ-B items worst pain and pain on average, separately, as well as the pain intensity and pain interference scales of the WBPQ-B were analyzed with the Kruskal-Wallis test and the Student-Newman-Keuls post hoc test. We hypothesized that pain intensity and interference with function would be higher in the groups with metabolic myopathy and myopathy with minimal changes because patients with exercise intolerance concentrate in those groups.

Statistical significance was set at  $P < 0.05$ . All analyses were performed using the Statistical Package for the Social Sciences program, v. 11.0 (SPSS Inc., Chicago, IL), with the exception of CFA performed with the program *Mplus* v. 5.

## Results

The pilot population in the cross-cultural adaptation process comprised 40 patients. Male and female participants were equally represented and the overall educational level was low. The majority of the questions of the WBPQ-B were comprehensible to individuals in the pilot population but changes in format were needed in two items (Questions 5 and 13) to make them more comprehensible.

The sample population participating in the validation study comprised 100 adults, aged 21–76 years (mean  $\pm$  SD = 43  $\pm$  10.7 years). The sociodemographic and clinical characteristics are presented in Table 1. The mean  $\pm$  SD time since diagnosis was 84  $\pm$  5 months.

*Table 1*  
**Sociodemographic and Clinical Characteristics of the Sample for the Validity Study of the WBPQ-B**

Variables	<i>n</i> = 100
Gender	
Male	47
Female	53
Marital status	
Married	80
Single	16
Divorced or separated	4
Schooling	
≥12 years	5
Nine to 11 years	30
Eight years	9
One to seven years	52
Illiterate	4
Treatments	
Oral medication	66
Polytherapy	4
Physical therapy	7
No treatment	23
Diagnostic group	
Myopathy with minimal changes	43
Metabolic myopathy	40
Muscular dystrophy	17

WBPQ-B = Brazilian version of the Wisconsin Brief Pain Questionnaire.

The mean  $\pm$  SD time to complete the WBPQ-B questionnaire at the first administration was  $15 \pm 6.7$  minutes and at retest was  $8 \pm 3.9$  minutes. Seventy-four patients (74%) were able to read and complete the WBPQ-B by themselves. Twenty-six patients (26%) needed the help of the interviewer to read and answer the questionnaire because of a cognitive or visual difficulty.

The descriptive statistics for the overall scores and each item of the intensity and interference scales of the WBPQ-B are shown in

Table 2. The proportion of missing responses did not exceed 2%.

The PCS, PCS-BP, and MCS of the SF-36 questionnaire presented means  $\pm$  SDs of  $32.0 \pm 7.9$ ,  $37.6 \pm 6.5$ , and  $36.0 \pm 12.4$ , respectively.

#### *Testing of Psychometric Properties*

**Factorial Structure.** CFA confirmed the presence of two factors: pain intensity and pain interference (Fig. 2), which replicates the results of an earlier study using exploratory factor analysis.<sup>17</sup> The test of model fit provided an excellent fit to the data for the two factors, with all of the goodness-of-fit indices within the standards of adequate fit. All factor loadings were statistically significant and standardized values were above 0.57.

**Reliability.** Internal consistency and interrater stability of the overall and each item score of the pain intensity and pain interference scales of the WBPQ-B are shown in Table 3. The adapted questionnaire presented adequate internal consistency (more than 0.70) on the two scales as measured with Cronbach's alpha and all item-total correlations were more than 0.41. Interrater correlation coefficient values were more than 0.70, indicating a very good stability of the measurements.

**Convergent Validity.** With regard to convergent validity, the a priori hypothesis of the correlation matrix between the WBPQ-B and SF-36 questionnaires was confirmed by the negative values in this analysis and the highest correlation between the pain intensity scale of the WBPQ-B

*Table 2*  
**Descriptive Statistics for Items From the Intensity and Interference Scales of the WBPQ-B (*n* = 100)**

WBPQ-B Items	Mean $\pm$ SD	Range		% Missing	% Floor <sup>a</sup>	% Ceiling <sup>b</sup>
		Theoretical	Observed			
Pain intensity	19.9 $\pm$ 7.2	0–30	3–30	NA	0	4
Pain at its worst	8.0 $\pm$ 1.9	0–10	2–10	0	0	28
Pain on average	6.9 $\pm$ 2.1	0–10	1–10	0	0	13
Pain right now	5.8 $\pm$ 3.1	0–10	0–10	0	11	13
Pain interference	14.0 $\pm$ 5.2	0–24	2–24	NA	0	3
Mood	2.3 $\pm$ 1.3	0–4	0–4	0	7	23
Social relationships	1.9 $\pm$ 1.3	0–4	0–4	2	14	13
Walking ability	2.4 $\pm$ 1.1	0–4	0–4	0	6	17
Sleep	2.0 $\pm$ 1.2	0–4	0–4	0	10	9
Work	2.8 $\pm$ 1.0	0–4	0–4	1	5	23
Enjoyment of life	2.5 $\pm$ 1.3	0–4	0–4	0	8	23

WBPQ-B = Brazilian version of the Wisconsin Brief Pain Questionnaire; NA = not applicable.

<sup>a</sup>Percentage of patients with the lowest possible score.

<sup>b</sup>Percentage of patients with the highest possible score.

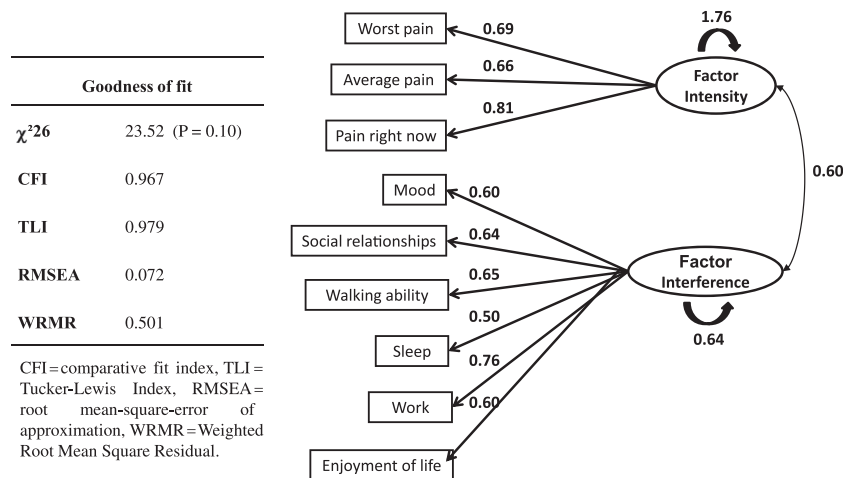


Fig. 2. Results of the confirmatory factor analysis of the Brazilian version of the Wisconsin Brief Pain Questionnaire.

with the bodily pain and physical functioning domains of the SF-36. Correlation analyses using the isolated items pain at its worst and pain on average of the WBPQ-B showed lower degrees of correlation with the domains of the SF-36 compared with the sum of items in the pain intensity scale. Correlations between the SF-36 domains and the pain interference dimension of the WBPQ-B were also as hypothesized: a negative and moderate correlation with vitality, social functioning, and role-emotional, as well as the bodily pain domain of the SF-36 (Table 4).

WBPQ-B scales also showed negative correlation with the summary components of the

SF-36: the pain interference scale correlated higher with the MCS, whereas the pain intensity scale and items showed only low degrees of correlation with the PCS-BP (Table 4).

Known-group validity was tested comparing the scores of pain at its worst, pain on average, and the pain intensity and pain interference scales of the WBPQ-B in three distinct groups of patients with muscular diseases: myopathy with minimal changes, metabolic myopathy, and muscular dystrophy. The mean  $\pm$  SD scores for the items worst pain and pain on average were  $8.1 \pm 1.7$  and  $7.3 \pm 2.0$  for myopathy with minimal changes,  $8.2 \pm 1.7$  and  $7.0 \pm 2.1$  for metabolic myopathy, and  $7.4 \pm 2.6$  and  $5.7 \pm 2.0$  for muscular dystrophy patients. The mean  $\pm$  SD scores for the pain intensity scale were  $18.9 \pm 9.4$ ,  $20.2 \pm 7.2$ , and  $16.9 \pm 6.2$  for the three groups. The mean  $\pm$  SD scores for the pain interference scale were  $12.1 \pm 7.2$ ,  $13.2 \pm 5.9$ , and  $12.4 \pm 6.2$  for the three groups. Pain intensity was not homogeneous across groups ( $P = 0.01$ ) and patients with muscular dystrophy presented with less pain than patients with a metabolic myopathy or patients with myopathy with minimal changes. The pain interference scale was similar for all groups ( $P = 0.66$ ).

Table 3  
Internal Consistency and Interrater Reliability of the WBPQ-B

WBPQ-B Items	Internal Consistency		Interrater Reliability ICC
	Cronbach's Alpha	Item-Total Correlation	
	<i>n</i> = 100		<i>n</i> = 14
Pain intensity	<b>0.74</b>		<b>0.88</b>
Pain at its worst		0.56	0.93
Pain on average		0.60	0.95
Pain right now		0.65	0.82
Pain interference	<b>0.79</b>		<b>0.92</b>
Mood		0.54	0.92
Social relationship		0.58	0.92
Walking ability		0.57	0.90
Sleep		0.45	0.90
Work		0.66	0.91
Enjoyment of life		0.50	0.94

WBPQ-B = Brazilian version of the Wisconsin Brief Pain Questionnaire; ICC = intraclass correlation coefficient. Bold indicates the results for pain intensity and pain interference scales.

### Discussion

The cross-cultural adaptation of the WBPQ to Brazilian Portuguese was achieved with satisfaction and this version showed satisfactory

Table 4  
Correlation of the WBPQ-B and the SF-36 (n = 100)

SF-36	WBPQ-B Items				WBPQ-B Scales			
	Pain at its Worst		Pain on Average		Pain Intensity		Pain Interference	
	R	P	R	P	R	P	R	P
Physical functioning	-0.42	<0.001	-0.18	0.08	-0.44	<0.001	-0.42	<0.001
Role-physical	-0.33	<0.01	-0.29	<0.01	-0.43	<0.001	-0.33	<0.01
Bodily pain	-0.57	<0.001	-0.28	<0.01	-0.54	<0.001	-0.49	<0.001
General health	-0.38	<0.001	-0.37	<0.001	-0.43	<0.001	-0.39	<0.01
Vitality	-0.42	<0.001	-0.25	<0.05	-0.44	<0.001	-0.46	<0.001
Social functioning	-0.30	<0.01	-0.20	<0.05	-0.36	<0.01	-0.45	<0.001
Role-emotional	-0.32	<0.001	-0.24	<0.05	-0.41	<0.001	-0.52	<0.001
Mental health	-0.28	<0.01	-0.11	0.26	-0.30	<0.01	-0.41	<0.001
PCS	<b>-0.43</b>	<0.001	<b>-0.29</b>	<0.01	<b>-0.47</b>	<0.001	<b>-0.28</b>	<0.05
PCS-BP	<b>-0.31</b>	<0.01	<b>-0.23</b>	<0.05	<b>-0.35</b>	<0.001	<b>-0.18</b>	>0.05
MCS	<b>-0.32</b>	<0.01	<b>-0.19</b>	>0.05	<b>-0.37</b>	<0.001	<b>-0.51</b>	<0.001

WBPQ-B = Brazilian version of the Wisconsin Brief Pain Questionnaire; SF-36 = 36-Item Short Form Health Survey; PCS = physical component summary score; MCS = mental component summary score; PCS-BP = physical component summary score-bodily pain domain. Bold indicates the coefficients for the component summaries.

psychometric properties in terms of structural analysis, reliability, and convergent and known-group validity.

CFA performed to assess the structure of the WBPQ-B confirmed the same two factors described in the original instrument: pain intensity and pain interference.<sup>2</sup> Cross-cultural adaptation of the WBPQ has been previously performed only for indigenous South African languages.<sup>17</sup> Those authors also identified two factors: pain intensity and pain interference.

Regarding the reliability of the pain intensity and pain interference dimensions of the WBPQ-B, statistical analysis demonstrated an adequate internal consistency, with values slightly below those found in the cross-cultural adaptation of the WBPQ to a multilingual South African population.<sup>17</sup> In our study, administration of the WBPQ-B by distinct evaluators demonstrated a high degree of stability in our population. Because our patients come from different parts of the country, it was not possible to arrange a short-term return for re-evaluation.

The convergent validity analysis with the SF-36 was supported by moderate correlation with some items. Low correlations with the PCS-BP indicate that pain is the most important physical component in our patients.

We also performed a known-group validity analysis and found that pain intensity items and the scale of the WBPQ-B were higher in the groups with metabolic myopathy and myopathy with minimal changes because patients with

exercise intolerance concentrate in those groups. The patients with muscular disease interviewed in our study presented high scores for pain intensity and interference with daily life. The unexpectedly high pain interference with function observed in patients with muscular dystrophy may be explained by the fact that those patients already have a physical disability imposed by muscle weakness and an additional symptom, such as pain, would have a higher impact on their normal daily activities. It is possible, however, that patients with muscular dystrophy could not adequately distinguish interference of pain or physical disability in their lives because pain intensity was not high in this group.

Although our study presents a broader analysis of the psychometric properties of the WBPQ, sensitivity to change and minimally important difference were not assessed. It also would be important to compare the WBPQ-B with other instruments measuring pain and related events. A revision of this cross-cultural adaptation is advisable before application in different regions of our country.

### Disclosures and Acknowledgments

Flávia O. Toledo, MS, received financial support from CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior). The authors declare no conflicts of interest.

The authors thank Dr. Rosana Spadoti Dantas and Dr. José Geraldo Speciali for their expert advice.

## References

1. Jensen MP, Karoly P, Braver S. The measurement of clinical pain intensity: a comparison of six methods. *Pain* 1986;27:117–126.
2. Daut R, Cleeland CS, Flanery RC. Development of the Wisconsin Brief Pain Questionnaire to assess pain in cancer and other diseases. *Pain* 1983;17:197–210.
3. Larue F, Colleau SM, Fontaine A, Brasseur L. Oncologists and primary care physicians' attitudes toward pain control and morphine prescribing in France. *Cancer* 1995;76:2181–2185.
4. McCormack JP, Li R, Zarowny D, Singer J. Inadequate treatment of pain in ambulatory HIV patients. *Clin J Pain* 1993;9:279–283.
5. Seong J, Koom WS, Park HC. Radiotherapy for painful bone metastases from hepatocellular carcinoma. *Liver Int* 2005;25:261–265.
6. Beaton DE, Bombardier C, Guillemin F. Guidelines for the process of cross-cultural of self-report measures. *Spine* 2000;25:3186–3191.
7. Rajmil L, Serra-Sutton V, Estrada MD, et al. Cross-cultural adaptation of the Spanish version of the Child Health and Illness Profile, Child Edition (CHIP-CE). [in Spanish]. *An Pediatr (Barc)* 2004;60:522–529.
8. Wild D, Grove A, Martin M, et al. Principles of good practice for the translation and cultural adaptation process for patient-reported outcomes (PRO) measures: report of the ISPOR task force for translating adaptation. *Value Health* 2005;2:94–104.
9. Bullinger M, Alonso J, Apolone G, et al. Translating health status questionnaires and evaluating their quality: the International Quality of Life Assessment Project approach. *J Clin Epidemiol* 1998;51:913–923.
10. Ware JE, Sherbourne CD. The MOS 36-item Short Form Health Survey (SF-36): conceptual framework and item selection. *Med Care* 1992;30:473–483.
11. Ware JE, Snow KK, Kosinski M, Gandek B. SF-36 Health Survey manual and interpretation guide. Boston, MA: The Health Institute, New England Medical Center, 1993.
12. Ware JE Jr, Kosinski M, Keller SD. SF-36 physical and mental health summary scales: A user's manual. Boston, MA: Health Assessment Lab, New England Medical Center, 1994.
13. Alonso J, Regidor E, Barrio G, et al. Population reference values of the Spanish version of the Health Questionnaire SF-36. [in Spanish]. *Med Clin (Barc)* 1998;111:410–416.
14. Vilagut G, Valderas JM, Ferrer M, et al. Interpretation of SF-36 and SF-12 questionnaires in Spain: physical and mental components. [in Spanish]. *Med Clin (Barc)* 2008;130:726–735.
15. Sapnas KG. Determining adequate sample size. *J Nurs Scholarsh* 2004;36:4.
16. Silva JA, Ribeiro-Filho NP. Assessment and measurement of pain: research, theory and practice. [in Portuguese]. Ribeirão Preto: Editora FUNPEC, 2006.
17. Mphahlele N, Mitchell D, Kamerman P. Validation of the Wisconsin Brief Pain Questionnaire in a multilingual South African population. *J Pain Symptom Manage* 2008;36:396–412.
18. Muthén LK, Muthén BO. *Mplus* Statistical analysis with latent variables. User's guide, 4th ed. Los Angeles, CA: Muthén & Muthén, 1998–2006.
19. Flora DB, Curran PJ. An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychol Methods* 2004;9:466–491.
20. Browne MW, Cudeck R. Alternative ways of assessing model fit. In: Bollen KA, Long JS, eds. *Testing structural equation models*. Newbury Park, CA: Sage, 1993.
21. Cochran WG. *Sampling techniques*, 3rd ed. New York: Wiley, 1977.
22. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct Equ Model* 1999;6:1–55.
23. Batista-Foguet JM, Coenders G, Alonso J. Confirmatory factor analysis. Its role on the validation of health related questionnaires. [in Spanish]. *Med Clin (Barc)* 2004;122(Suppl. 1):21–27.
24. Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika* 1951;16:297–334.
25. Shrout PE, Fleiss JL. Intraclass correlations: uses in assessing rater reliability. *Psychol Bull* 1979;86:420–428.
26. Scientific Advisory Committee of the Medical Outcomes Trust. *Assessing health status and quality-of-life instruments: attributes and review criteria*. *Qual Life Res* 2002;11:193–205.
27. Ajzen I. *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1998:97–99.

## Appendix

### Questionário Breve da Dor de Wisconsin

Por favor, gostaríamos que lesse e respondesse estas questões. Se você **NÃO** teve dor no último mês, por favor, responda somente as primeiras quatro questões e a última página.

1. Você já sentia essa dor quando recebeu o diagnóstico de sua doença?

1 ( ) Sim 2 ( ) Não

Se você responder sim para questão acima, marque uma das seguintes opções:

1 ( ) A dor foi o motivo para eu ir ao médico

2 ( ) Eu já tinha dor mas não foi o motivo da minha visita ao médico.

2. Você já teve dor alguma vez por causa de sua doença?

1 ( ) Sim 2 ( ) Não 3 ( ) Não sei

3. Você fez cirurgia no último mês?

1 ( ) Sim 2 ( ) Não

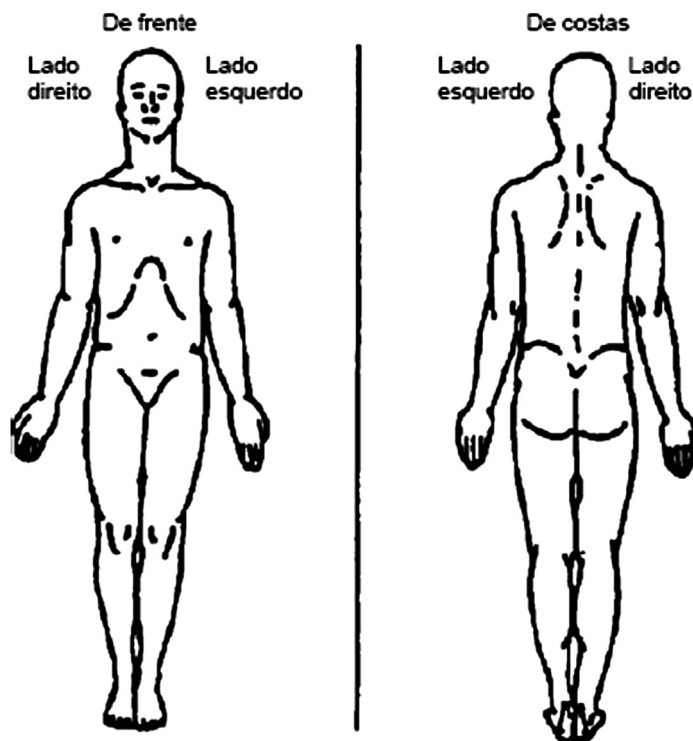
4. Ao longo da vida, a maioria das pessoas sente dores de vez em quando (tais como, dor de cabeça, dor nas juntas e dor de dente). Você sentiu outro tipo de dor diferente dessas dores do dia-a-dia no último mês?

1 ( ) Sim 2 ( ) Não

**Se você respondeu SIM para a questão anterior, por favor, vá para a questão 5 e finalize o questionário.**

**Se você respondeu NÃO, pule para a última página. Obrigada por sua ajuda.**

5. a) Mostre neste desenho onde está localizada sua dor, pintando a área afetada.  
b) Marque na área que você pintou a letra "S" para a dor que está próxima da superfície do seu corpo e a letra "P" para a dor que está profunda.  
c) Marque com um X no desenho o lugar que a dor mais incomoda.



Desenho completado por:

( ) paciente

( ) entrevistador

6. Por favor, mostre a gravidade de sua dor circulando o número que melhor descreve a **pioir dor** que você teve no último mês. (o número 10 indicará uma dor tão grave que impede toda atividade, a pior dor que você pode imaginar)

Nenhuma dor 0 1 2 3 4 5 6 7 8 9 10 A pior dor que você pode imaginar

7. Por favor, mostre a gravidade de sua dor circulando o número que melhor descreve a sua **dor em média**. (o número 10 indicará uma dor tão grave que impede toda atividade, a pior dor que você pode imaginar)

Nenhuma dor 0 1 2 3 4 5 6 7 8 9 10 A pior dor que você pode imaginar

8. Por favor, mostre a gravidade de sua dor circulando o número que melhor descreve **quanta dor você tem agora**. (o número 10 indicará uma dor tão grave que impede toda atividade, a pior dor que você pode imaginar)

Nenhuma dor 0 1 2 3 4 5 6 7 8 9 10 A pior dor que você pode imaginar

9. Qual tratamento ou medicação você está utilizando para sua dor? \_\_\_\_\_

10. Quanto o tratamento ou a medicação aliviou a dor? (por favor, circule uma porcentagem que represente o quanto de alívio que você obteve).

Nenhum alívio 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% Alívio completo

11. Em sua opinião, qual é a causa de sua dor? \_\_\_\_\_

12. Suponha que você esteja contando para alguém como você sente a sua dor. Quais palavras você usaria para descrever sua dor? \_\_\_\_\_

13. Durante a última semana, quanto o seu estado de saúde, incluindo a dor, interferiu em:

**a) Seu humor**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante  
4 ( ) Extremamente (demais)

**b) Sua relação com as outras pessoas**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante  
4 ( ) Extremamente (demais)

**c) Sua capacidade de andar**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante  
4 ( ) Extremamente (demais)

**d) Seu sono**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante

**e) Seu trabalho normal (incluindo tanto o trabalho fora de casa quanto o trabalho doméstico)**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante  
4 ( ) Extremamente (demais)

**g) Seu prazer de viver**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante  
4 ( ) Extremamente (demais)

**Outros (especificar) \_\_\_\_\_**

- 0 ( ) Nada  
1 ( ) Um pouco  
2 ( ) Moderadamente (mais ou menos)  
3 ( ) Bastante  
4 ( ) Extremamente (demais)

14. Estado civil

- ( ) Solteiro (a)  
( ) Casado (a)  
( ) Amasiado (a)  
( ) Divorciado (a)  
( ) Viúvo (a)  
( ) Separado (a)

15. Escolaridade \_\_\_\_\_

16. Profissão \_\_\_\_\_ (se você não está trabalhando, escreva sobre sua profissão anterior)

Profissão do esposo (a): \_\_\_\_\_

17. Há quanto tempo você sabe do seu diagnóstico? \_\_\_\_\_ meses.