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Adaptation of a Brazilian Version of the North/Northeast Region for the Brief Pain Inventory

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Abstract

Purpose: The adaptation of BPI-B into North/Northeast of Brazil. The purpose of this study was the translation and adaptation of the BPI to Portuguese language, as spoken in Brazil, aiming at its posterior usage to measure both intensity and interference of pain in cancer patients' life. **Methods:** The BPI-B was developed from the original BPI, using back-translation and committee review. The Back Translation was compared to the original BPI, as a result, the North/Northeast Brazilian version proved to have the same goals, and is similar to other current versions, observing its psychometrics properties. The inventory presented a final sample of 475 patients, whose average age was 54.37 years old (DP = 14.56), most female (58.9%). One hundred ninety-six patients in elementary school took part. It had its objective to group multiple indicators that responded to validation, precision and parsimony criteria. The patients answered the BPI at the very moment they were diagnosed as cancer cases. All of them were above 18 years old and they were also undergoing treatment at Cancer Ambulatory in a Hospital in Ceará, Brazil. The retest was carried, after about a month of the first application. In order to verify the reliability of inventory adaptation, the exploratory factorial analysis was used as the oblique rotation axis. **Results:** Exploratory factor analysis confirmed two underlying dimensions, pain severity, and pain interference, with Cronbach's α 0.833 and 0.733, respectively. **Conclusion:** A proposition of a north/northeast Brazilian version of BPI turned out to be adequate, gathering evidences of adaptation and internal consistency similar to already validated versions.

Keywords

Pain Evaluation. Brief Pain Inventory. Cancer Pain. Pain Intensity. Pain Interference, Reliability

1. Introduction

In the year of 1990, the World Health Organization (WHO) [1] has decreed that the pain associated with neoplasm is a worldwide medical emergency, however, Melo and Pinto-Filho (2009) [2], ensured that, even during these past 15 years, despite the improvement in cancer pain, it wasn't enough to stop this fact from being considered a serious public health problem.

According to IASP (2009) [3] and the National Cancer Institute-INCA (2009) [4], cancer is one of the most challenging diseases of this century, due to the absence of a cure and effective treatment, as well as the stunning effect that causes pain to the patients. It is defined as a group of diseases that is characterized by the loss of control of cellular division and ability to invade other bodily structures (metastasis).

According to epidemiological data bases, six millions of new cases of cancer arise in the world per year, in an average proportion of 98% in adults [5]. In Brazil, estimates for 2009 and 2010 were around 466,730 (0.25%) new cases of cancer, considering especially the impact of the environmental, social and economic factors [4].

According to IASP (2009) [3], each type of oncologic pain can be evaluated and reevaluated by means of treatment and disease progress; however, many developing countries have a small number of professionals working with oncological pain, and they can't give necessary attention to this illness that brings so much suffering to the world population.

Brazil is following the standards of WHO and launched its National Policy Attention Oncology (PNAO) in December 2005, with the aim of promoting integrated actions of the Government and society, by developing a new policy that recognizes cancer as a public health problem and produces actions to control this illness [4].

Philip *et al.* (1998) [6] and Cleeland *et al.* (2000) [7] suggested that the evaluation issues were identified as the greatest barriers for the control and improvement of symptoms of patients' pain. Therefore, you have to use a tool that can evaluate symptoms that are more frequent, ones that afflict most patients, the intensity of these symptoms should also be short, easy to understand and it must have applicability for doctors and patients in any environment.

A Brief Inventory of Pain (BPI) was originally developed in 1983, at the university of Wisconsin, EUA, having as its fundamental purpose to contribute to the improvement of the practical diagnosis, as it was verified that the *Inventory for pain*, McGill (MPQ), had brought a great lack of understanding towards the

patients, who could not complete the inventory quickly by several factors, such as: unknown descriptors of their culture; low schooling; and, above all, for being an exhaustive questionnaire [8]. For this reason, it had been developing the BPI as a tool of easy application and understanding [8].

According to Cleeland (2009) [9], BPI is a tool whose purpose is to take a short while to be answered, be easily understood by participants, besides the fact that it can be administered by the own literate participants or supplemented verbally to ones who are illiterate, being of easy translation for patients who do not speak English, besides its capacity to capture both the intensity and the interference of pain on the patient's life arises.

According to Twycross *et al*. (1996) [10], Stenseth *et al*. (2007) [11] and Shin *et al*. (2007) [12], the BPI is currently the most utilized tool to assess oncologic pain because it is easy to understand and it is validated in several languages-becoming an universal language-besides being recommend by OMS (2009) and Expert Working Group of the European Association of Palliative Care, for which has being considered one of the best methods to relief oncologic pain.

According to Cleeland (2009) [9], the studies of Melzack in 1968 were the ones that led to three evaluation dimensions of cancer pain: discrimination of sensation, cognitive and emotional affection; however, currently, two dimensions are considered: sensation-intensity or severity and reaction-interference of the pain in daily functions of the patient's life. Within this last dimension, the formation of two subdivisions occurred: affectivity-relationship with other people, satisfaction with life and humor; and the other is the category of activity-walking, general activity, work. Sleep is in both subdivisions.

According to Caraceni *et al*. (1996) [13], Wang *et al*. (1996) [14] and Wells (2000) [15], the importance of the *BPI* lies in the fact that it is a questionnaire designed to measure the intensity of pain and its interference in oncologic patients' life. In these two researches, high values for the alpha coefficients could be verified. The advantage of this survey is that it works in three large dimensions: relief, quality and perception caused by pain.

Even if it is a newly developed tool, the BPI has already been translated to various populations, such as England [8], Vietnam [16], France [17], Latin America) [18], Philippines [19] [20], China [14], Italy [13], Japan [21], Germany [22], Thailand [14] [23], India [24], Greece [25], Norway [26], Spain [27], Malaysia [28], Russia [29], Europe [30], Australia [31], and Taiwan [32].

For Saxena *et al*. (1999) [24], the BPI version from English to Hindi was fairly similar in their psychometric properties; the Cronbach's alpha was 0.91 and 0.89 for interference and intensity of subscales, serving as support for reliability and validation of the BPI-H version.

Validation of G-BPI (*Brief Pain Inventory* for the Greeks) was held so that it could satisfy both health professionals and cancer patients who agreed with the notion of the tools used to assess pain were inadequate [25]. This adjustment has resulted in a Cronbach's alpha of 0.849 for the interference of pain on the patient's life and 0.887 to pain intensity, noting the reliability and validity of the

tool.

Beck and Falkson (2001) [33], made a survey in South Africa, using BPI, with the objective to verify the prevalence and the standardization of the treatment of cancer pain, because there hasn't been found a tool that could adapt the relief of pain, which is currently a world health problem.

These researchers found that the BPI obtained the following results: appearance of two dependent variables (intensity and interference of pain). In pain intensity, the items of the BPI had the following averages: the worst pain (5.68), the lowest (2.97), the average pain (4.18) and pain at that moment (3.21). The second variable verified three items that have higher averages, those were: normal work (5.27), satisfaction with life (4.83) and general activities (4.73). With these results, the researchers Beck and Falkson (2001) [33], using the BPI, attained their goals and validated a tool that is so important for measuring the oncological patient's pain.

According to Uki *et al*. (1998) [21], the Japanese version of the *Brief Pain Inventory* (BPI-J) had the purpose of improving clinical evaluation, facilitating a better judgment and Japanese studies on epidemiology of pain in Japan. The BPI was chosen to be evaluated in this country, because it had already been employed in multicenter studies of cancer pain in American, English, French and Spanish versions, obtaining similar results.

In order to be validated the BPI-J had found the following results in the study commented above: two dependent variables-intensity and pain-interference in oncologic patients' life. At first, the following averages were verified: worst pain (4.89), average (3.82), the pain at the moment (2.88) and the lowest (1.93). In another dependent variable, the following averages were found: humor (4.31), satisfaction with life (3.95), general activities (3.73), sleep (3.62), ability to walk (3.34), relationships with other people (3.19) and work (2.97). With these results, the researchers Uki *et al*. (1998) [21], were able to validate this instrument for measurement of cancer pain in Japan, making comparisons with those of other countries.

Holtan *et al*. (2007) [34], used the BPI in Norway, with the purpose of improving the quality of life in oncologic patients. It was soon verified through health reports that severe pains interfered violently in the lives of these patients, having the effect of increasing symptoms of oncologic pain and decreasing the effects of the followed treatments.

Cleeland and collaborators [7] [9] [16] [19], verified whether BPI would be independent of the cultural and ethical influences of four countries: France, United States, Philippines and China. The consistency of the two dependent variables found in the study (intensity interference of pain) can be seen as an evidence of the consistency of the cultural crossroads of patients with oncologic pain, which assess similarly regardless of the country, and thus, are defined, as being a tool that found a consensus about the multidimensionality.

Through the study of researchers Aisyaturridha *et al*. (2006) [28], one of the major problems of Malaysia is that, both for patients and for health profession-

als, the pain is often poorly managed. The measurement of pain is essential for the benefit of pain management, which involves studies on effective evaluation of various treatments and education programs. Also, according to Aisyaturridha *et al*. (2006) [28], the validation of the BPI was important, so that it can be used in assessing oncologic pain clinically and can also be employed as a driver for the study of epidemiology and cancer pain management for a better viewing of the validation process and trustworthiness of the BPI in other countries.

Considering the importance of the BPI to measure cancer pain, and checking this tool's success in other countries, it has been suggested by Professor Dr. Mark Jensen of the University of Washington, that an adaptation of this tool here in Brazil was realized, aiming for a multicenter instrument in a future that is arising.

2. Method

2.1. Participants

This study had as an objective to measure the pain of patients of the Pain Ambulatory of Cancer Institute of Ceará (ICC), hospitalized or not, that had pain complaints for a month or more. The final sample was 475 patients, with 196 men and 279 women, aged between 18 and 91 years old. A hundred ninety six of the patients with cancer pain attended both the application and replication of the questionnaire. The sample was of 110 (56.1%) women and 86 (43.9%) men. The average age (± the standard deviation) was 55.44 ± 14.94 and 61.98 ± 13.56 respectively (reaching 18 - 95 years). 65.8% of the patients were of basic education, 19.9% were illiterate, 11.7% had a high school certificate and 2.6%, finally, had college certificate. The larger part of the patients 149 (76%) lives in non-capital cities and 47 (24%) live in the country's capital cities.

The larger part of the participants was between 41 and 60 years. It wasn't of significance, however, the representation of patients with ages of 80 and higher (**Table 1**). The description of the potential of the chosen bias had the same weight for the whole analysis.

2.2. Material

The brief Pain Inventory, composed by 11 items distributed in two factors: intensity and interference. The last factor was subdivided in emotion and routine. The participants must have claimed to be in pain at that moment. Afterwards, there were four questions related to pain intensity and seven others regarding pain interference in the patients' life. Their answers were given in two scales, one varying from 0 (no pain) to 10 (worst pain imaginable) and the other scale varied from 0 (it doesn't interfere) to 10 (totally interferes).

A month after the first application, we realized the retesting, *i.e.*, 196 patients who had already took part in the first application (86 men and 110 women) answered the instrument a second time, aiming to prove its reliability.

The study involves men and women over 18 years old, which are having

Table 1. Sample demographic characteristics.

	n (%)
Gender	
Male	86 (43.9)
Female	110 (56.1)
Age groups (years)	
18 - 40	19 (9.7)
41 - 60	92 (46.9)
61 - 80	71 (36.2)
≥81	14 (7.1)
Education	
Illiterate	39 (19.9)
Primary school	129 (65.8)
Secondary school	23 (11.7)
University	5 (2.6)
Residence	
Metropolis	47 (24)
Not metropolis	149 (76)
Total	196 (100)

Source: SPSS.

chronic pain defined as pain for more than three months, what may be attributed to a malignant tumor. All of the patients had a cancer diagnosis, although no restrictions about the kind of neoplasia were made. This selection was widely evaluated as it had variations on kind and intensity of pain amongst the different kinds of cancer.

The exclusion criteria were patients with any concomitant illness likely to misperceive the assessment of pain, any serious or unstable medical or psychological condition that could compromise the participation in the study, any painful syndromes of unknown origin, or any reason inhibiting an accurate understanding of the questionnaire.

2.3. Procedure of Translation

The first step of the translation involved the invitation of three Brazilian professionals who speak English fluently, which were responsible for the translation of the original American version of the BPI to the Brazilian language. A committee of bilingually fluent Brazilian pain experts evaluated and approved the translation of the items. The items were then translated back into English by a bilingual translator who had not seen the original English version.

After the individual production of translation, the translators reached a com-

mon agreement with the pilot version. The *back-translation* was compared with the BPI, noting that the original Brazilian version had the same objectives, namely the Brazilian version of the *Brief Pain Inventory* (*BPI-B*) was similar to other existing versions of the tool, within its psychometric properties.

2.4. Content Reliability

With the intention of examining the content's reliability of the adapted instruments, a representative capacity trial of the inventory was held, by experts. Five doctors were contacted, having experience on pain, for the following procedure: presenting the BPI, the professional had to assign a value on a scale ranging from 0 to 10 for each item on the inventory [35].

The contacted professionals set time and date on their private offices, where they welcomed the researcher. They were given more detailed info about the research and obtained a signed consent for participation.

2.5. Data Analysis

Adopting this study's objective, beyond the descriptive statistic (average, standard deviation), we performed, by means of the *SPSS* 17, the following analysis: main component and internal consistence analysis (Cronbach's Alfa). By the way, it was necessary to indicate that the correlation matrix between the identification measure items was factorable, calculating the *KMO* index and the *Barlett's Sphericity Test*. The number of components to extract was adjusted on the parallel analysis. Finally, we applied the retest with the utilization of Pearson's correlation to prove, by means of correlations if the structure of the BPI's items was reliable.

The Ethics Committee of the Cancer Institute of Ceará, Brazil, approved the research and all patients gave their written informed consent before inclusion into this article.

3. Results

Table 2 presented the following results: the KMO test shows significance, so, indicates the shared variance by the 11 variables. In relation to Bartlett's Test, results were also significant, that is to say, the items are not completely independent. Finally, Cronbach's Alfa indicated that the instrument has a valid collect, and, so, will be able to utilize Factorial Analysis.

The statistical description for each item of the scale of intensity and pain interference is presented on Table 3. Patients evaluated a high score of interference on the items related to normal work and general activities, follow by ability to walk, mood, sleep, satisfaction with life and relationship with other people.

For evaluation of the colinearity of the BPI-B, the correlation matrix of the study was calculated. The results of colinearity are presented on Table 4. For Field (2009) [36], colinearity, which is an assumption for factorial analysis technique, only occurs when the correlations are of significance, but not too high,

Table 2. Verification of testing for the use of factory analysis.

Statistically	Estimates
Alpha de conbracht	0.855
KMO	0.784
Bartley	1299,940

Source: SPSS.

Table 3. Descriptive statistics for BPI-B items.

Scale	Item	Mean	SD
Severity items	Pain worst	**5.74**	3.12
	Pain least	2.72	3.30
	Pain average	**4.78**	3.14
	Pain now	3.55	3.47
Interference items	General activity	**8.10**	3.11
	Mood	3.90	3.68
	Walking ability	**5.23**	3.04
	Work	**8.37**	2.92
	Relations with others	2.40	3.54
	Sleep	3.39	4.11
	Enjoyment of life	3.21	3.82

Note: values in bold are significant. Source: SPSS.

Table 4. Correlation matrix for the Brief Pain Inventory (BPI).

	Pain worst	Pain least	Pain average	Pain Now	General activity	Mood	Walking ability	Work	Relations with others	Sleep	Enjoyment of life
Pain worst	1.000										
Pain least	0.763	1.000									
Pain average	0.853	0.726	1.000								
Pain Now	0.674	0.631	0.673	1.000							
General activity	0.174	0.220	0.183	0.180	1.000						
Mood	0.275	0.306	0.320	0.181	0.264	1.000					
Walking ability	0.270	0.216	0.244	0.253	0.420	0.358	1.000				
Work	0.177	0.199	0.180	0.228	0.898	0.286	0.376	1.000			
Relations with others	0.282	0.289	0.345	0.123	0.193	0.537	0.166	0.197	1.000		
Sleep	0.376	0.403	0.415	0.374	0.269	0.315	0.285	0.272	0.333	1.000	
Enjoyment of life	0.292	0.275	0.331	0.238	0.234	0.699	0.226	0.256	0.602	0.358	1.000

Determinant = 0.001. Source: SPSS.

standing lower than a 0.90. This way, it can be perceived that a colinearity of the study's data occurred.

According to Field (2009) [36], evaluation of the construct's indicators inten-

sity and interference started from the exploratory factorial analysis, by means of the main component analysis method, which is indicative for when it's intended to obtain factors that contain the higher degree of variance explanation.

For this purpose, the criteria of the autovalues (*Eingevalues)* and the Scree plot was realized. This way, factors identified on Table 5 had autovalues (*Eingevalues)* higher than 1.0, standing with the proposition of three factors, grouping the items based on rotated solution by oblique criteria, with the purpose of reducing the correlation between the factors and maximize the explanation of the identified factors.

As can be seen on Table 5, those three components responded for 72.27% of total variability, where the first component matches 41.51% of the explained variance, grouping the variables, *lesser pain in* 24 h, *worst pain in* 24 h, *average pain and current pain*, its internal consistence (Cronbach's Alfa was 0.91). Second factor indicates 58.77% of explained variance by means of the variables, *general activity*, *normal work and ability to walk*, with internal consistence of 0.79. Last factor indicates a 72.27 variance, explained by means of the variables, *satisfaction with life*, *mood and relationship with other people*, the internal consistence was 0.83.

On Table 6, the correlation of components matrix can be found, which confirmed the existence of three components of intensity and interference of BPI and the commonality that indicates which components must be included on the instrument being validated by exploratory factorial analysis. According to Field (2009) [36], only the element sleep must be extracted from the instrument, as it presents a value lower than 0.5.

Another test realized was the calculation of the Cronbach's Alfa, with the intent

Table 5. Initial statistics: total variance explained.

Items	Initial eigenvalues			Variance explained			Variance explained after rotation
	Total	% Var.	Cumulative %	Total	%Var.	Cumulative%	Total
1	4.566	41.510	41.510	4.566	41.510	41.510	3.880
2	1.899	17.268	58.778	1.899	17.268	58.778	2.801
3	1.485	13.496	72.274	1.485	13.496	72.274	3.007
4	0.741	6.732	79.006				
5	0.679	6.169	85.175				
6	0.486	4.422	89.597				
7	0.376	3.414	93.011				
8	0.288	2.623	95.634				
9	0.249	2.267	97.900				
10	0.139	1.262	99.162				
11	0.092	0.838	100.000				

Extraction method: Principal component analysis. Source: SPSS.

Table 6. Factory analysis for the BPR-B (extract tree factors).

	Components			Communalities
	1	2	3	
Pain least	0.870			0.758
Pain worst	0.921			0.933
Pain average	0.911			0.833
Pain Now	0.863			0.716
Walking ability		0.617		0.553
Work		0.937		0.962
General activity		0.978		0.978
Relations with others			0.825	0.686
Mood			0.875	0.742
Enjoyment of life			0.885	0.783
Sleep			−0.471	0.388

Source: SPSS.

of verifying the consistence of the scales. In this construct, a value of 0.855 was obtained for the 11 items of intensity and interference of the inventory, being regarded as satisfactory.

For the reliability evaluation of the BPI-B, the Alfa coefficient of intensity (4 items) and pain interference (7 items) was calculated separately. The results of the Alfa coefficient are presented on Table 7. The Alfa coefficients were 0.91 for the intensity scale and 0.779 for the pain interference scale. Alfa coefficient ranges from 0 to 1, with high values (similar to those found here) indicating small errors of measure. On Table 7, the Alfa values of the two scales are compared on all items. This suggests that each item contributes similarly to the comprehension of the instrument, with the exception of sleep, as his Alfa was low (0.418), being removed from the analysis. The results of the Alfa values were compared with the ones of other countries. The reliability of the coefficient of other countries is presented on Table 8.

On Table 9, the retest of the construct intensity and interference of the study can be observed. These analysis were realized with the objective of demonstrating the factors intensity with lesser pain, higher pain, average pain and current pain; pain interference, divided between: emotion related to mood, satisfaction with life, relationship with other people; and the routine factor, related to: ability to walk, general activity and normal work. To that end, bivariate analysis was realized, aiming to identify if there is any relation between the three factors found on the exploratory factorial analysis with its variables.

According to Field (2009) [36], this analysis considered the relation direction-positive or negative and its strength between the variables, by means of the correlation coefficient. The statistical test realized was Pearson's R, which demonstrates the probability of the relationship occurring as a result of sample error, given that the null hypothesis is true.

Table 7. Coefficient alphas for the BPI-B.

	Alpha if item deleted
Interference alpha	0.779
General activity	0.935
Mood	0.785
Walking ability	0.543
Work	0.919
Relations with others	0.681
Sleep	**0.418**
Enjoyment of life	0.768
Severity alpha	0.833
Pain worst	0.851
Pain least	0.775
Pain average	0.838
Pain Now	0.724

Note: the value in bold is not significant. Source: SPSS.

Table 8. Coefficient alpha and factors loading comparison (USA, France, China, Philippines).

	USA	France	China	Philippines
Sample size	1106	324	200	267
Severity	0.87	0.86	0.86	0.80
Pain worst	0.68	0.64	0.74	0.74
Pain least	0.87	0.82	0.81	0.83
Pain average	0.87	0.80	0.91	0.75
Pain Nowl	0.78	0.82	0.76	0.77
Interference	0.91	0.90	0.91	0.86
General activity	0.80	0.79	0.91	0.86
Mood	0.79	0.85	0.71	0.71
Walking ability	0.71	0.63	0.82	0.72
Work	0.80	0.73	0.86	0.79
Relations with others	0.76	0.81	0.81	0.66
Sleep	0.68	0.56	0.62	0.60
Enjoyment of life	0.83	0.73	0.75	0.73

Note: data drawn from Caraceni *et al.* (1996) [13].

Table 9. Correlation (r Pearson).

Test	Severity T1	Emotion T1	Routine T1
Severity T2	0.24**		
Emotion T2	0.06	0.40**	
Routine T2	0.11	0.12	0.30**

**. The correlation has a significance level of 0.01 (bilateral). Source: SPSS.

Comparing the results obtained on the first application of the instrument and the retest (with the same participants), by means of realization of the Pearson's R correlation, to test the hypothesis about de relations between the variables intensity and interference, where the last one is divided in two (routine and emotion), it was possible to observe a correlation of significance, however, low. Corroborating with the result found, Field (2009) [36] secures that Pearson's R correlation only occurs when the significance rejects the hypothesis that there is no significance, so the $P < 0.5$. This way, significance level found was lower than 0.05, as a cut point for inclusion of the three factors on confirmatory factorial analysis.

4. Discussion

The purpose of this study was to verify whether the BPI fulfilled three specified implicit criteria-validity, precision and parsimony. The BPI presented two objectives that were related with the functional evaluation of the limits of the effects caused by cancer pain, taking part into multinational trials and comparing the results found with those of other studies, aiming to make it into a multicentric instrument. In function of the results, we estimate that it has been satisfactory.

The exploratory factorial analysis utilized in the study is similar to the statistical techniques found in other versions, with the intent of validating the BPI-B. The number of identified dimensions on previous psychometric tests was of two or three. Some studies have identified two factors: pain intensity and pain interference [14] [21] [22] [23] [25] [28] [29]. In counterpart the studies of Saxena *et al*., (1999) [24] in India; Klepstad *et al*. (2002) [26] in Norway and Chaudakshetrin (2009) [32] in Thailand, identified three factors: pain intensity, pain interference on routine and pain interference on emotion. These same factors were confirmed in this study. The difference of the factor model may have been caused by the conceptual alteration of the item on the translation period. The multidimensional scale, however, eliminates the effects of a general answer about standardization of the pain index with other countries, by means of similitude distinction of physical and psychological dimensions in different languages [7] [9] [16].

We noticed that the items about interference, routine-physique- and psychological emotion can reflect the pain of the patient with advanced cancer diagnosis. The interference of the symptoms on routine-physical is caused probably by the limitation of the physical capacity. The influence of the emotional pain symptoms-psychological can be related with de combination of physical suffering and the interpretation of these patients related to the context of the disease's pain management. Corroborating this idea, Saxena *et al*. (1999) [24] and Da Silva *et al*. (2010) [37], affirm that the perception of pain is something subjective and is tied to physiological, cultural and situational questions.

The BPI showed internal consistence on both intensity factor ($\alpha = 0.91$), and the two interference factors: routine ($\alpha = 0.80$) and emotion ($\alpha = 0.74$). These values of Cronbach's Alfa are adequate [38] and similar to other inventories al-

ready validated.

As can be verified, the psychometric parameters of the BPI are considered satisfactory, as the factorial structure found was coherent with what is expected and the precision relation obtained a satisfactory Cronbach's Alfa. A limitation of this study, however, must be shown. The low representativeness of sleep resulted in its removal from the factors of exploratory factorial analysis. Corroborating with this extraction, Japan justified, stating that it had been caused by the drugs that the patients took; making so that they didn't had any pain interference on their sleep habit [21].

In relation to chosen time for the realization of the retest (a month between the application and retest), it may be responsible for the inventories' presented correlation, that, however of significance, was low [38]. It is known that the interval of time between the applications can interfere on the correlation coefficient [39]. Therefore, we believe to have met the objectives of the study. It was decided, nevertheless, to realize a confirmatory factorial analysis on the second study with the intent of securing the factors that were found.

5. Final Considerations

With improvement in other studies, it's concluded that the BPI-B is a reliable instrument for evaluation and measurement of cancer pain on Brazilian patients of regions north/northeast.

Within the study in focus, the utilization of the CFA shows that reliability of three factors model is suggested by other studies that made the validation of the BPI [24] [26].

The BPI is a construct that is really able to measure the cancer pain of patients, since it showed the internal consistence of Cronbach's Alfa of intensity, emotion interference and pain interference in routine with high items. These values were identified as similar when related to other studies [24] [26]. These values exceeded 0.7, which is an acceptable standard for scale's stability.

It's important to highlight that the demand to implement new studies with probabilistic samples of patients that belongs to healthcare plans, don't make use of pharmacological treatments and on an advanced stage of the disease is well known. This is of fundamental importance, as it will allow us not only to generalize the previous descript results, and will confirm or not the psychometric parameters observed in this context.

Despite this, new studies are equally important. It would fit, as an example, to count with samples that answered the BPI-B on two groups of patients, determining, like this, it's stability in relation to the kind of healthcare plan (test-retest). On a similar fashion, the predictive validity of this action must be known, checking how much it can predict the utilization of different kinds of healthcare plans for pain measuring.

Finally, it can be stressed that the BPI-B can be utilized due to its reliability as an instrument to evaluate the pain in cancer patients in Brazil. It's expected that this instrument can help health researchers and professionals to evaluate the

painful stimulus, by means of selecting proper interventions and verify the evaluation of its effects. Therefore, this inventory is capable of improving the treatment and the quality of life of patients with cancer pain.

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