

CROSS-CULTURAL ADAPTATION OF THE CANCER BEHAVIOR INVENTORY - BRIEF VERSION FOR BRAZIL

ADAPTAÇÃO TRANSCULTURAL DO CANCER BEHAVIOR INVENTORY - BRIEF VERSION PARA O BRASIL

ADAPTACIÓN TRANSCULTURAL DEL CANCER BEHAVIOR INVENTORY - VERSIÓN BREVE PARA BRASIL

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ABSTRACT

Objective: to perform the cross-cultural adaptation of the Cancer Behavior Inventory - Brief Version for Brazil. **Method:** methodological study, carried out in accordance with the guidelines for studies of reliability and agreement of reports. The cross-cultural adaptation of the instrument included the stages of Translation, Synthesis, Back-translation, Review by the expert committee and Pre-test. **Results:** the stages of translation, back-translation and evaluation by the expert committee presented a few changes, mainly related to the replacement of terms by synonyms, suppression of words and grammatical adjustments. However, item 5 stood out for having an agreement of less than 80% in all equivalences, which indicates the need for modifications. The content validity index and Kappa for this item were lower than the recommended values (0.20 and 0.37, respectively), highlighting the importance of additional revisions to ensure the accuracy and adequacy of the instrument. The adapted version of the instrument was subjected to a pre-test, in which new modifications were made. **Conclusion:** the instrument was carefully adapted to Brazilian culture, resulting in a culturally sensitive, linguistically accurate version that preserves the integrity of the original instrument.

Keywords: Self Efficacy; Neoplasms; Medical Oncology; Nursing Methodology Research.

RESUMO

Objetivo: realizar a adaptação transcultural do Cancer Behavior Inventory - Brief Version para o Brasil. **Método:** estudo metodológico, realizado de acordo com as diretrizes para estudos de confiabilidade e concordância de relatórios. A adaptação transcultural do instrumento englobou as etapas de Tradução, Síntese, Retrotradução, Revisão pelo comitê de juízes e Pré-teste. **Resultados:** as etapas de tradução, retrotradução e avaliação pelo comitê de juízes apresentaram poucas alterações, relacionadas principalmente à substituição de termos por sinônimos, supressão de palavras e ajustes gramaticais. No entanto, o item 5 destacou-se por ter uma concordância inferior a 80% em todas as equivalências, o que indica a necessidade de modificações. O índice de validade de conteúdo e o Kappa para este item foram inferiores aos valores recomendados (0,20 e 0,37, respectivamente), evidenciando a importância de revisões adicionais para garantir a precisão e adequação do instrumento. A versão adaptada do instrumento foi submetida a um pré-teste, no qual foram realizadas novas modificações. **Conclusão:** o instrumento foi adaptado à cultura brasileira de forma criteriosa, resultando em uma versão culturalmente sensível, linguisticamente precisa e que preserva a integridade do instrumento original.

Palavras-chave: Autoeficácia; Neoplasias; Oncologia; Pesquisa Metodológica em Enfermagem.

RESUMEN

Objetivo: realizar la adaptación transcultural del Cancer Behavior Inventory - Brief Version para Brasil. **Método:** estudio metodológico, llevado a cabo de acuerdo con las directrices para estudios de fiabilidad y concordancia de informes. La adaptación transcultural del instrumento incluyó las etapas de Traducción, Síntesis, Retrotraducción, Revisión por el comité de expertos y Pre-prueba. **Resultados:** las etapas de traducción, retrotraducción y evaluación por el comité de expertos presentaron pocas modificaciones, relacionadas principalmente con la sustitución de términos por sinónimos, supresión de palabras y ajustes gramaticales. Sin embargo, el ítem 5 se destacó por tener una concordancia inferior al 80% en todas las equivalencias, lo que indica la necesidad de modificaciones. El índice de validez de contenido y el Kappa para este ítem fueron inferiores a los valores recomendados (0,20 y 0,37, respectivamente), resaltando la importancia de revisiones adicionales para asegurar la precisión y adecuación del instrumento. La versión adaptada del instrumento fue sometida a una pre-prueba, en la cual se realizaron nuevas modificaciones. **Conclusión:** el instrumento se adaptó a la cultura brasileña de manera cuidadosa, resultando en una versión culturalmente sensible, lingüísticamente precisa y que preserva la integridad del instrumento original.

Palabras clave: Autoeficacia; Neoplasias; Oncología Médica; Investigación Metodológica en Enfermería.

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INTRODUCTION

Cancer has been a growing concern over the years, due to its high global incidence, reflecting a worrying trend for society. In Brazil, it is estimated that 704 thousand new cases of cancer will occur in the three-year period from 2023 to 2025, with a higher incidence in men and in the South and Southeast regions of the country, which account for approximately 70% of cases⁽¹⁾.

Advances in science and technology have contributed significantly to the early diagnosis of cancer. However, some barriers still limit access to the oncology network for most of the population, especially in rural areas and regions far from large urban centers. The main challenges in accessing oncology care include inadequate infrastructure, the scarcity of specialized services, and socioeconomic and environmental inequalities⁽²⁻³⁾.

Moreover, cancer treatment is a factor that can cause suffering for patients, directly affecting their quality of life. They have to deal with the side effects of the therapies used, acute or chronic pain with varying levels of intensity, changes in appearance and bodily functions, emotional and psychological impacts, and harm to family, social, and professional relationships⁽³⁾.

The complexity of this scenario has triggered transformations in oncological care over the last few decades, reflecting a fundamental change in the way healthcare professionals understand and treat cancer. Previously, the patient was seen as a passive recipient of care, with minimal participation in decisions about their treatment. However, this limited view did not adequately meet the demands of each individual, requiring a broader, more patient-centered approach⁽⁴⁻⁶⁾.

Therefore, the modifications that have occurred since the current care model have allowed the incorporation of new elements for monitoring cancer patients, covering a variety of factors that can influence the patient's health, quality of life and well-being, including psychosocial, emotional and spiritual aspects. One of these elements is self-efficacy, a fundamental psychological concept that has received increasing attention in the health field, especially in the context of patients with chronic diseases, such as cancer^(5,6).

The concept of self-efficacy refers to the belief that an individual has in his or her own ability to successfully perform a certain action to achieve a desired goal. Self-efficacy beliefs are essential for the effective management of adversities related to long-term cancer treatment, encouraging patients to persist in coping with the disease, to seek better results and to adopt adaptive strategies that promote well-being and quality of life^(3,7-10).

The evaluation of self-efficacy in oncology can support the development of an personalized therapeutic plan adapted to the specific needs of each patient, identifying coping skills, focusing on areas of greatest weakness and empowering the patient to make decisions about their own care. Although self-efficacy is an essential tool for oncological care, its assessment can be challenging due to the lack of instruments culturally adapted for the Brazilian population⁽¹⁰⁻¹¹⁾.

Therefore, cross-cultural adaptation of a sensitive assessment instrument and consideration of the singularities related to cancer treatment are important stages to ensure that healthcare professionals can meet the unique needs of patients and help them face the challenges of the disease with confidence. Accurate measurement of self-efficacy in cancer patients is critical to developing effective support interventions⁽¹⁰⁾.

In this sense, the objective of the study was to adapt the instrument on Cancer Behavior Inventory - Brief Version (CBI-B) for Brazil.

METHOD

This is a methodological study carried out in accordance with the guidelines for reporting reliability and agreement studies (Guidelines for Reporting Reliability and Agreement Studies – GRRAS)⁽¹²⁾. The proposal was to adapt the CBI-B⁽⁹⁾, a psychological assessment instrument developed to measure the coping strategies used by cancer patients. This brief version allows to reduce the time required for its application, making the instrument more practical for use in clinical and research environments.

The CBI-B was adapted for use in five countries: Saudi Arabia⁽¹³⁾, Turkey⁽¹⁴⁾, Italy⁽¹⁵⁾, Portugal⁽¹⁶⁾ and China⁽¹⁷⁾. These versions maintained their conceptual integrity and consistently measured the self-efficacy of cancer patients, indicating the robustness of the instrument and its relevance in distinct cultural and linguistic contexts⁽¹³⁻¹⁷⁾.

The instrument consists of 14 items, grouped into four factors that represent a specific dimension of behavior related to coping with cancer: 1 - Maintaining Independence and Positive Attitude; 2 - Participating in Medical Care; 3 - Coping and Stress Management; and 4 – Managing Affect. The subjects are distributed on a nine-point Likert scale, in which participants select the option that best describes their confidence in performing specific behaviors related to coping with cancer. The total score results from the sum of all items, and the higher the value, the higher the level of self-efficacy⁽⁹⁾.

The cross-cultural adaptation of the CBI-B followed the model proposed by Beaton et al.⁽¹⁸⁾, with five

interrelated stages: 1 - Translation; 2 - Synthesis; 3 - Back-translation; 4 - Review by the expert committee; and 5 - Pre-test (Figure 1).

In the first stage, the translation process of the CBI-B from English to Brazilian Portuguese was carried out by two independent translators who were fluent in both languages. These translators had expertise in the areas of health and Nursing, in addition to being accredited by high-impact journals. This approach aimed to minimize possible linguistic, cultural and scientific biases, ensuring an accurate translation that was faithful to the original context. The results of this process were the T1 and T2 versions of the instrument, which served as a basis for the subsequent stages of cross-cultural adaptation⁽¹⁸⁾.

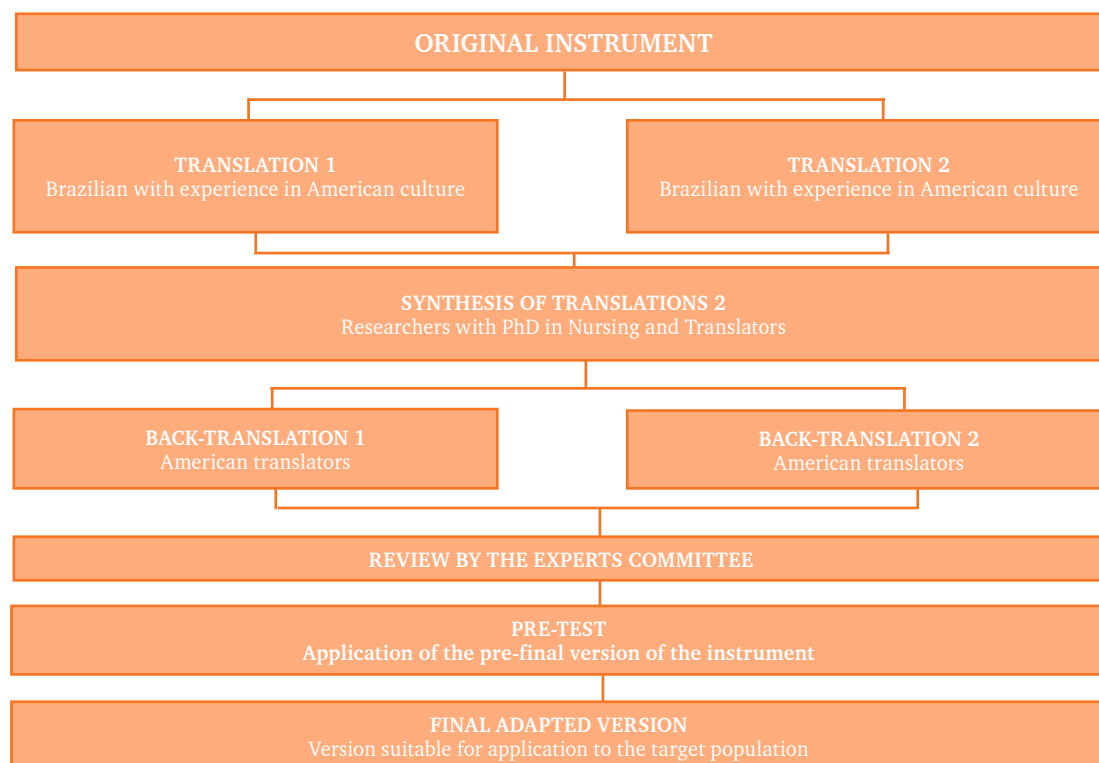
In the next stage, versions T1 and T2 were synthesized into a single version (T-12) by a group composed of three researchers with PhD in Nursing, who had extensive experience in cross-cultural adaptation and instrument validation. In addition to the researchers, the translators who participated in the previous stage also contributed to this synthesis. The use of the collaborative approach allowed the translations to be consolidated, considering different perspectives and expertise in the area, resulting in a cohesive version that is representative of the Brazilian cultural and linguistic context⁽¹⁸⁾.

In the back-translation stage, the synthesized version of the instrument (T-12) was sent to two American translators, who had lived in Brazil for more than 10 years and were unaware of the study objectives. These professionals translated the Portuguese versions (T1 and T2) into English, obtaining versions BT1 and BT2. The objective of this stage was to verify the similarity between the items of the original English version and the back-translated versions, ensuring semantic and conceptual equivalence between the languages⁽¹⁸⁾.

In the fourth stage, the T-12 version of the instrument was submitted for analysis by an expert committee composed of five professors with PhD in Nursing, with expertise in cross-cultural adaptation and validation of instruments and/or experience in providing care to cancer patients. All professionals received an electronic invitation that presented the reason for their selection, the relevance of the CBI-B for the Nursing field, the Free and Informed Consent Form, instructions for the reviewing process, the instrument for characterizing the reviewers and the materials for evaluating equivalences and content validity⁽¹⁸⁾.

A 30-day deadline was established for the return of materials, allowing the reviewers to carefully review the version of the instrument and provide a relevant opinion

Figure 1 - Stages for the cross-cultural adaptation of the CBI-B into Brazilian Portuguese.



factors, in which verbs were replaced by nouns. In factor 2, previously called "Participating in Medical Care", it was suggested that the term "Medical Care" be replaced by "Health Care", seeking to reflect the scope and complexity of oncological care provided by a multidisciplinary team.

In factor 4, defined as "Affect Control", the term "Affect" was replaced by "Emotional", as it was considered more appropriate to cover the set of items assessed in this factor. This change aims to broadly cover the emotional and psychological aspects related to coping with cancer, encompassing a wider variety of emotions and feelings experienced by patients during the treatment process.

It was suggested that the verb tense be changed in the wording of the items, opting for the nominal form of the verb in the infinitive, instead of conjugated verb forms, such as the gerund or the present indicative. This change made the items clearer and more objective, in addition to facilitating the understanding of the respondents, since the nominal form of the verb highlights the action itself, without adding temporal or personal nuances that could interfere with its interpretation.

In item 1, the inclusion of an explanation of the term "independência" ["independence"] was necessary due to the difficulties in understanding presented in the pre-test. Among the participants in this stage, some individuals interpreted the term as not needing physical or financial help, instead of understanding it as the ability to make decisions about treatment autonomously. Therefore, it was decided to include an explicit definition to ensure a more accurate and sensitive assessment of self-efficacy in relation to this specific aspect of cancer treatment^(18,21).

Replacing the term "senso de humor" ["sense of humor"] with "bom humor" ["good humor"] in item 3 represented a careful linguistic choice to increase the clarity and accessibility of the measurement instrument. While "senso de humor" ["sense of humor"] can be interpreted in different and more subjective ways, "bom humor" ["good humor"] is a more direct and widely recognized expression, easily understood by most people. This linguistic adaptation not only made the item more understandable, but also facilitated the identification of the behavior in question, providing a more accurate assessment of the cancer patient's self-efficacy in maintaining a positive mood during treatment.

The need for major modifications to item 5 during the adaptation process highlights the importance of a clear and precise understanding of the instrument's items. The lack of clarity regarding the meaning of the term "negação" ["denial"] among the reviewers highlighted the complexity of cross-cultural adaptation and the need for a

careful approach. To ensure adequate understanding, further investigation was conducted, including analysis of the broad version of the scale (CBI-L)⁽²²⁾, to contextualize the term within the conceptual framework of cancer patient self-efficacy.

The decision to change the item to "afastar pensamentos negativos" ["distract from negative thoughts"], similar to what occurred in the Arabic version,⁽¹³⁾ reflected an approach sensitive to patients' needs and experiences, seeking to maintain the essence of the original item while making it more understandable and culturally relevant. The successful adaptation of item 5 showed how a rigorous and careful process can result in significant improvements in the quality and usefulness of the instrument adapted to a culture different from the original^(9,18).

Originally defined as "Mantenho atividades de trabalho" ["Maintain work activity"], item 6 of the instrument was too restrictive to capture the nuances of the daily lives of patients undergoing cancer treatment. Therefore, it was decided to expand the description of this item to "Manter atividades da rotina (trabalho, estudos, casa, lazer e vida social)" ["Maintain routine activities (work, studies, home, leisure and social life)"], similar to the adaptations for the Arabic⁽¹³⁾ and Turkish⁽¹⁴⁾ languages. This change sought to encompass the various areas of an individual's life that may be affected by cancer treatment, going beyond the simple professional aspect and incorporating educational, domestic, leisure and social aspects^(9-10,21,23).

In item 7, the terms "relaxado" ["relaxed"], "assustadores" ["scary"] and "perturbem" ["disturb"] were replaced, respectively, by "calmo(a)" ["calm"], "negativos" ["negative"] and "aborreçam" ["annoy"]. The choice of these terms aimed at making the language of the instrument more understandable and culturally appropriate for the target population, more accurately reflecting the feelings and experiences underwent by the participants. In addition, such changes can favor the accuracy and reliability of the responses obtained during the application of the instrument, thus ensuring a more accurate assessment of cancer-related behavior^(10,18).

The exclusion of the term "ativamente" ["actively"] from item 8 "(Participar nas decisões sobre o tratamento)" ["(Participate in treatment decisions)"] was a decision based on the concern that patients might interpret their participation in a binary way, that is, as being active or non-existent. This approach aims to avoid underestimating the levels of self-efficacy of these individuals, allowing a broader and more accurate recognition of their contribution to the treatment process^(3,8,11,24).

on its adequacy, clarity and relevance to the research context. The reviewers' assessment was conducted through methodological triangulation⁽¹⁸⁾. Qualitative methods were used for a detailed analysis of the semantic, idiomatic, cultural and conceptual equivalences of the instrument, considering the comprehension and adequacy of the items in relation to the Brazilian context. Furthermore, quantitative methods were used to measure the percentage of agreement, the content validity index (CVI) and the Kappa coefficient⁽¹⁸⁾.

At the end of the evaluation stages by the reviewers, the proposed modification suggestions were carefully reviewed and incorporated into the 'Pre-final Adapted Version' of the CBI-B. These changes sought to ensure that the instrument was culturally sensitive and linguistically understandable for Brazilian participants, thus promoting the validity and reliability of the results obtained through its application⁽¹⁸⁾.

The final stage of the cross-cultural adaptation process took place in October 2021, when the 'Pre-final adapted version' of the instrument was applied to 30 patients undergoing cancer treatment. These participants were randomly selected from among the members of a support group attending the state's referral hospital for cancer treatment⁽¹⁸⁾.

During the pre-test, participants were asked to read the instrument aloud, followed by a discussion about their understanding of each item. From this process, common doubts were identified, mainly related to the instrument's evaluation scale and the interpretation of subjects 1 and 10. As a result, the instrument was modified based on these observations, undergoing a new review by the expert committee before being reapplied. At the end of this stage, the adapted version of the CBI-B was obtained for use in the study population.

Permission to conduct the cross-cultural adaptation of the CBI-B was formally requested through an electronic message detailing the purposes of the study, ensuring the integrity of copyright and fidelity to the original concepts at all stages of the process. The author of the instrument granted the requested authorization. The study was approved by the Research Ethics Committee.

RESULTS

During the translation stage of the CBI-B, two independent versions in Brazilian Portuguese (T1 and T2) were generated and presented minor variations when compared. The synthesized version (T-12) was carefully revised to ensure clarity and comprehensibility of the words used, aiming at the precise adaptation of the

instrument to the cultural and linguistic context of the target population. The back-translated versions (BT1 and BT2) showed high consistency with the original English version of the CBI-B, with minimal variations being observed, mainly in relation to the use of synonyms and differences in verb conjugation (Figure 2).

During the assessment of the equivalences of the synthesized version, minor modifications were suggested to improve the understanding and cultural adequacy of the items. Only subject 5 needed to be reformulated due to an agreement rate of less than 80% in all dimensions evaluated: semantic (60%), idiomatic (60%), cultural (40%) and conceptual (60%). The content assessment revealed that only subject 5 presented Content Validity Index CVI values of 0.20 and Kappa of 0.37, below the recommended values (≥ 0.80 and ≥ 0.75 , respectively), indicating the need to modify this subject (Table 1).

The modifications proposed by the expert committee for the adaptation of the instrument were implemented, including the replacement of terms, the suppression of words, adjustments in the grammatical order, and the inclusion of elements such as articles, prepositions and vocabulary. The title of the instrument was changed to reflect the identification of the country, resulting in the designation of the Brazilian version as Cancer Behavior Inventory - Brief Version (CBI-B/BR).

During the application of the 'Pre-final adapted version' of the CBI-B/BR to 30 people with different levels of education, it was observed that the first 10 participants had doubts regarding the interpretation of the item evaluation scale. As a response, the following explanatory instruction was included: 'On a scale of 1 (not at all) to 9 (completely), how confident do you feel in...'. In addition, items 1, 5, 10 and 11 were identified as sources of difficulty in understanding, requiring minor changes.

After the modifications were made, the revised version of the CBI-B/BR was administered again to the same 10 participants, who reported no longer having any difficulties in understanding it. Subsequently, this modified version was submitted to the remaining 20 participants, all of whom demonstrated an adequate understanding of the instrument (Figure 3).

DISCUSSION

The adaptation of the Brazilian version of the CBI-B was based on a methodological framework widely recognized for its scientific relevance in different areas of knowledge, such as health, psychology, education and social sciences. This model presents a systematic approach, based on a solid theoretical foundation, which results in

Figure 2 – Summary of translations and back-translated versions. João Pessoa, PB, Brazil, 2021.

	Synthesis (T-12)	BT1 Version	BT2 Version
1.	Mantenho independência	Maintain independence	Maintain independence
2.	Mantenho uma atitude positiva	Maintain a positive attitude	Maintain a positive attitude
3.	Mantenho senso de humor	Maintain a sense of humor	Maintain a sense of humor
4.	Expresso sentimentos negativos sobre o câncer	Express negative feelings about the cancer	Express negative feelings about cancer
5.	Uso a negação	Use denial	Use denial
6.	Mantenho a atividade de trabalho	Maintain work activity	Maintain work activity
7.	Permaneço relaxado durante todos os tratamentos e não permito que pensamentos assustadores me perturbem	Remain relaxed during all treatments and not allow scary thoughts to upset me	Remain relaxed during all treatments and not allow scary thoughts to upset me
8.	Participo ativamente nas decisões sobre o tratamento	Actively participate in treatment decisions	Actively participate in treatment decisions
9.	Faço perguntas aos médicos	Ask the doctors questions	Ask doctors questions
10.	Busco conforto	Seek comfort	Seek comfort
11.	Compartilho sentimentos de preocupação	Share feelings of concern	Share feelings of concern
12.	Controlar as náuseas e os vômitos	Manage to deal with nausea and vomiting	Manage to deal with nausea and vomiting
13.	Eu me adapto as mudanças físicas	Adapt to physical changes	Adapt to physical changes
14.	Permaneço relaxado enquanto espero pelo menos 1 h pela minha consulta	Remain relaxed while waiting at least 1 hour for my appointment	Remain relaxed while waiting at least 1 hour for my appointment

Table 1 - Content Validity Index and Kappa Coefficient of the summary version of the Cancer Behavior Inventory - Brief Version. João Pessoa, PB, Brazil, 2021.

Item	Clarity of language		Practical relevance		Theoretical relevance		Theoretical dimension	
	CVI	Kappa	CVI	Kappa	CVI	Kappa	CVI	Kappa
1	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
2	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
3	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
4	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
5	0.20*	0.37*	0.80	0.76	0.80	0.76	0.80	0.76
6	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
7	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9	0.80	0.76	0.80	0.76	0.80	0.76	0.80	0.76
10	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
13	0.80	0.76	1.00	1.00	1.00	1.00	1.00	1.00
14	0.80	0.76	0.80	0.76	0.80	0.76	0.80	0.76

* Values lower than recommended.

Figure 3 – Adapted version of the Cancer Behavior Inventory – Brief Form (CBI-B/BR). João Pessoa, PB, Brazil, 2021.

	Adapted Version
1.	Maintain independence (being able to perform activities be able to perform actions and make your own decisions, without help or influence from other people)
2.	Maintain a positive attitude
3.	Maintain a good humor
4.	Express negative feelings about cancer
5.	Distract from negative thoughts
6.	Maintain routine activities (work, studies, home, leisure and social life)
7.	Remain calm during all treatments and do not allow negative thoughts to annoy me
8.	Participate in treatment decisions
9.	Ask healthcare professionals questions about treatment
10.	Seek social support (family, friends, community and professionals)
11.	Share my concerns with others
12.	Manage to deal with nausea and vomiting
13.	Able to adapt to physical changes caused by treatment
14.	Remain calm while waiting for my appointment

a final instrument that maintains the characteristics of the original version, ensuring its validity and reliability in practical application⁽¹⁸⁻²⁰⁾.

The process of cross-cultural adaptation is essential when using an instrument developed in another country. Semantic, idiomatic, cultural and conceptual differences between places can significantly influence the understanding and interpretation of the instrument's items. Thus, the construction of a new version must be culturally sensitive and preserve the conceptual elements of the original structure to ensure effective results in its application in clinical care and scientific research⁽¹³⁻¹⁸⁾.

In the first stage, the initial translations presented minor discrepancies related to the choice of different synonyms. The selection of two Brazilian translators, highly proficient in English and familiar with the culture of the country of origin of the instrument, was crucial to minimize semantic deviations linked to linguistic and contextual nuances. Furthermore, both had post-graduate degrees in areas relevant to research, such as Nursing, Oncology and Literature, enabling the choice of the most appropriate terms to reflect the similarities and differences in habits, customs and social and healthcare

practices between American and Brazilian cultures. This collaborative approach enriched the translation process and increased the accuracy and relevance of the adapted version of the CBI-B^(18,21).

In the next stage, the translated versions were combined into a single document, after a careful analysis of the terminological choices and linguistic nuances of each translation. In addition, we sought to identify discrepancies and divergences, as well as similarities and points of convergence. Each choice of terminology was evaluated considering the cultural context and target audience of the instrument, ensuring that the final version was understandable and relevant for measuring self-efficacy in cancer patients^(10,18,22).

The third stage revealed a high similarity between the consolidated and back-translated versions, confirming the maintenance of the conceptual structure of the CBI-B. Back-translation is crucial in the process of cross-cultural adaptation of instruments, as it ensures semantic equivalence between both versions. In addition, it allows the quality of the initial translation to be assessed, potential problems to be identified, the fidelity of the adaptation to be ensured, and confidence in the results obtained in different cultural and linguistic contexts to be reinforced^(18,20-21).

The evaluation carried out by the expert committee showed a high level of agreement in relation to most items. However, item 5 needed to be reformulated, as it obtained a percentage of agreement lower than recommended, together with inadequate CVI and Kappa values⁽²⁰⁾. The reviewers' suggestions were directed at improving the item without modifying the theoretical dimension of the concept analyzed. Thus, even with the need for reformulation, the essence and proximity to the original instrument were preserved^(9,18).

The inclusion of the acronym "BR" in the title of the instrument was a strategy adopted to highlight and identify the Brazilian version, also being used in the adaptations for Saudi Arabia (CBI-BA),⁽¹³⁾ Italy (CBI-B/I),⁽¹⁵⁾ Portugal (CBI-B/P)⁽¹⁶⁾ and China (CBI-B/C)⁽¹⁷⁾. This approach is often used in multicenter or collaborative studies that involve the use of different versions of the same instrument, as it standardizes the nomenclature and contributes to better organization of researchers^(9-10,18,21).

During the adaptation process, three factors were modified to ensure the accuracy and relevance of the assessment of self-efficacy in cancer treatment. In factor 1, originally entitled "Maintaining Independence and Positive Attitude", it was proposed to change to "Maintenance", following the same linguistic structure used in the other

Item 9 was changed from “Faço perguntas aos médicos” [“I ask questions to doctors”] to “fazer perguntas aos profissionais de saúde sobre o tratamento” [“Ask health-care professionals questions about treatment”]. The changes to this item sought to address the complexity of oncology care, which is not limited to exclusive interaction with doctors, but encompasses several professionals who are crucial to comprehensive patient care. Furthermore, delimiting the context of the questions can favor the measurement of self-efficacy throughout the cancer treatment trajectory, given that the questions can range from doubts about therapeutic procedures, side effects, treatment options, palliative care, among other aspects^(1-2,10).

The modification of item 10 from “Busco conforto” [“I seek comfort”] to “Buscar apoio social (família, amigos, comunidade e profissionais)” [“Seek social support (family, friends, community and professionals)”] was based on the need for a broader understanding of the concept of “consolação” [“consolation”], as occurred in the Arabic⁽¹³⁾ and Turkish⁽¹⁴⁾ versions of the CBI-B. In the context of cancer treatment, this concept can be understood as the search for emotional, social and practical support during challenging moments in the patient’s journey. This support can be offered by different individuals and manifest itself in different ways, including monitoring during treatment, emotional assistance, help with daily tasks, providing information about the therapy used and/or offering practical resources^(4,25).

In item 11, the original definition of “Compartilho sentimentos de preocupação” [“I share feelings of concern”] was changed to “Compartilhar minhas preocupações com outros” [“Share my concerns with others”] to ensure a clearer understanding of the action being evaluated. The patient’s ability to share concerns with others is essential to measure their level of self-efficacy in cancer treatment, as it reflects the willingness to seek emotional support, the ability to communicate effectively, the promotion of self-care and the making of informed decisions about their treatment^(23,25).

The inclusion of the terms “conseguir” [“be able”] and “provocadas pelo tratamento” [“caused by treatment”] in item 13 was necessary to clarify and ensure accurate understanding, especially among participants with lower levels of education. By defining that the physical changes were a direct consequence of cancer treatment, patients were able to easily associate them with the side effects of the therapies used, allowing an objective assessment of their ability to adapt to these stressful events^(3,4,7).

Item 14 was changed from “Permaneço relaxado enquanto espero pelo menos 1 h pela minha consulta”

[“I remain relaxed while waiting at least 1 hour for my appointment”] to “Permanecer calmo(a) enquanto espero pela minha consulta” [“Remain calm while waiting for my appointment”], since the term “relaxed” is not widely used in everyday language in Brazil, while “calm” is more common and understandable for most people. Furthermore, the expression “pelo menos 1 hora” [“at least 1 hour”] was excluded because it is not necessary to define a specific time for waiting for an appointment. In many cases, patients may wait for a significant period before being seen, so defining a minimum time could lead to inaccurate responses that underestimate or overestimate their level of self-efficacy^(9-10,18).

Given these changes, it is important to adapt the writing of the CBI-B items, since the meaning and interpretation of the listed self-efficacy behaviors differed between the United States and Brazil. An accurate assessment of the concept measured by an instrument depends not only on its structure, but also on the way the items are written. Therefore, it is essential to adapt the content of the instrument to the cultural reality of the target country, ensuring that the items are understandable and relevant to the Brazilian population⁽¹⁸⁾.

The language adaptation process is essential to ensure equal understanding of the items, regardless of the participants’ level of education. The use of terms and expressions that are familiar and accessible to different population groups is crucial to avoid biases in the interpretation and responses of participants, thus ensuring the validity and reliability of the data obtained through the adapted instrument^(9,13-18).

Cross-cultural adaptation of instruments is an essential practice in scientific research, especially in fields such as psychology, medicine and public health. This approach allows instruments previously developed and validated in a given language to be used in different countries and populations, facilitating the comparison of results and the exchange of information among researchers around the world^(18,20).

To produce a valid and reliable version of the instrument, it is essential to follow a well-established methodological approach. The main objective of this process is to obtain equivalence between the source and target languages, ensuring that the instrument assesses the same subjective construct consistently across different countries. This is essential to ensure the validity of the data collected and the correct interpretation of the results in cross-cultural studies⁽¹³⁻¹⁹⁾.

In this sense, when carrying out a cross-cultural adaptation, researchers must be aware of the cultural

and linguistic differences between the groups of interest, which requires sensitivity to identify and address nuances in the interpretation of specific concepts and terms in different cultural contexts. Once the adaptation is completed, the instrument can be used to assess psychological, behavioral or health variables in a wide range of cultural contexts, thus contributing to the advancement of scientific knowledge globally⁽¹⁸⁻¹⁹⁾.

The results of this research have limitations related to the translation synthesis stage, since only nurses were selected to consolidate the translated versions, without including other professionals from the multidisciplinary team. However, these researchers effectively contributed to the quality of the adapted version of the instrument.

CONCLUSION

The cross-cultural adaptation of the CBI-B was conducted using a robust and well-structured method, ensuring that the adapted version was culturally sensitive, linguistically accurate, and clinically relevant for the Brazilian population. The CBI-B/BR achieved adequate semantic, idiomatic, cultural, and conceptual equivalences, demonstrating that the items were translated accurately and comprehensibly into the cultural context of Brazil, while maintaining the integrity of the constructs underlying the original instrument developed in the United States.

The content assessment showed satisfactory values in relation to the clarity of the language, practical relevance and theoretical relevance of the items. The modifications suggested by the expert committee and the pre-test participants were fundamental for the improvement of the instrument, contributing to reducing comprehension biases and standardizing the written language, making the questionnaire more accessible and understandable for individuals with different levels of education.

Therefore, the use of the CBI-B/BR offers significant advantages for assessing self-efficacy in patients undergoing cancer treatment. The standardization of the instrument and its ease of use allow for consistent assessment by identifying specific support needs that must be addressed during health care. Furthermore, the existence of adaptations in different countries favors multicenter and cross-cultural studies to compare differences and similarities in the perception of self-efficacy among different populations.

In Nursing, the use of the CBI-B/BR has broad and relevant implications. In clinical practice, nurses can assess patients' self-efficacy regarding cancer treatment and develop an individualized care plan, facilitating the

identification of areas that require additional support and enabling educational and supportive interventions to develop coping skills and promote self-care.

In Nursing research, this adapted instrument can be used to investigate the factors that influence patients' ability to cope with and deal with cancer treatment. By applying the CBI-B/BR, researchers can explore not only patients' levels of self-efficacy but also identify the psychosocial, cultural, and contextual determinants that influence these levels.

The CBI-B/BR can also be used as a learning tool in Nursing, based on the discussion of concepts related to self-efficacy, coping with cancer and patient-centered care. In addition, students can practice applying the instrument in simulated or clinical scenarios, which could favor the improvement of therapeutic communication skills and the construction of the perception of cultural sensitivity in the face of the diversity of patients' needs.

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