

<http://dx.doi.org/10.1590/0104-07072017001730017>

THE CROSS-CULTURAL ADAPTATION OF RESEARCH INSTRUMENTS, CONDUCTED BY NURSES IN BRAZIL: AN INTEGRATIVE REVIEW

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ABSTRACT

Objective: to identify and analyze the theoretical approaches and stages of the cross-cultural adaptation of research instruments to the Portuguese language, by people working in the field of nursing in Brazil.

Method: an integrative review of articles which described the process of cross-cultural adaptation of instruments used in clinical hospital practice, published between 2005 – 2016. The search was undertaken in MEDLINE®, CINAHL®, Scopus®, Web of Science®, LILACS®, BDENF and SciELO®. A total of 22 articles was analyzed, identifying the stages of the process of adaptation, the methodological approach, the instrument and the clinical specialty.

Results: all the studies used the universalist approach, and 20 of these adopted Beaton as the methodological framework. Among the strong points, emphasis is placed on the adoption of methodological frameworks, implementation and detailing of the procedures adopted in the process, content validation and psychometric evaluation. However, the predominant weakness was the absence of information which is important in the adaptation process.

Conclusion: an overvaluing of psychometric evaluation was evidenced, in detriment to the rigorous accomplishment of the adaptation process. The findings make it possible to elaborate recommendations for cross-cultural adaptation studies, which could support future research into this method.

DESCRIPTORS: Translating. Validation studies. Nursing. Brazil

ADAPTAÇÃO TRANSCULTURAL DE INSTRUMENTOS DE PESQUISA CONDUZIDA PELA ENFERMAGEM DO BRASIL: UMA REVISÃO INTEGRATIVA

RESUMO

Objetivo: identificar e analisar as abordagens teóricas e propostas processuais utilizadas na adaptação transcultural de instrumentos de pesquisa para a língua portuguesa, pela enfermagem brasileira.

Método: revisão integrativa de artigos que descreviam o processo de adaptação transcultural de instrumentos utilizados na prática clínica hospitalar, publicados entre 2005-2016. A busca foi realizada na MEDLINE®, CINAHL®, Scopus®, Web of science®, LILACS®, BDENF e SciELO®. Foram analisados 22 artigos, identificando-se as etapas do processo de adaptação, a abordagem metodológica, o instrumento e especialidade clínica.

Resultados: todos os estudos utilizaram a abordagem universalista e em 20 deles Beaton foi o referencial metodológico adotado. Dentre os pontos fortes, destacam-se a adoção de referenciais metodológicos, cumprimento e detalhamento dos procedimentos adotados no processo, validação de conteúdo e avaliação psicométrica. Entretanto, a fragilidade predominante foi a ausência de informações importantes do processo de adaptação.

Conclusão: evidencia-se uma supervalorização da avaliação psicométrica, em detrimento do cumprimento rigoroso do processo de adaptação. Os achados possibilitam a elaboração de recomendações para estudos de adaptação transcultural, que podem subsidiar futuras pesquisas deste método.

DESCRIPTORES: Tradução. Estudos de validação. Enfermagem. Brasil.

ADAPTACIÓN TRANSCULTURAL DE INSTRUMENTOS DE INVESTIGACIÓN CONDUCTA POR LA ENFERMERÍA DE BRASIL: UNA REVISIÓN INTEGRATIVA

RESUMEN

Objetivo: identificar y analizar los enfoques teóricos y propuestas procesales utilizadas en la adaptación transcultural de instrumentos de investigación para la lengua portuguesa, por la Enfermería brasileña.

Método: revisión integrativa de artículos que describían el proceso de adaptación transcultural de instrumentos utilizados en la práctica clínica hospitalaria, publicados entre 2005-2016. La búsqueda fue realizada en MEDLINE®, CINAHL®, Scopus®, Web of science®, LILACS®, BDNF y SciELO®. Se analizaron 22 artículos, identificándose las etapas del proceso de adaptación, el abordaje metodológico, el instrumento y especialidad clínica.

Resultados: todos los estudios utilizaron el enfoque universalista y en 20 de ellos Beaton fue el referencial metodológico adoptado. Entre los puntos fuertes, se destacan la adopción de referenciales metodológicos, cumplimiento y detalle de los procedimientos adoptados en el proceso, validación de contenido y evaluación psicométrica. Sin embargo, la fragilidad predominante fue la ausencia de informaciones importantes del proceso de adaptación.

Conclusión: se evidencia una sobrevaloración de la evaluación psicométrica, en detrimento del cumplimiento riguroso del proceso de adaptación. Los hallazgos posibilitan la elaboración de recomendaciones para estudios de adaptación transcultural, que pueden subsidiar futuras investigaciones de este método.

DESCRIPTORES: Traducción. Estudios de validación. Enfermería. Brasil.

INTRODUCTION

Generally speaking, the elaboration of research instruments used in epidemiological and clinical studies is a complex process. It requires many resources and the mobilization of various types of abilities, skills and knowledges.¹ In Brazil, the scarcity of formal and objective instruments for collecting data in scientific studies in various areas of knowledge has led to the increasingly-frequent use of international instruments. The selection of an instrument which was elaborated in a language, context and culture different from that where it is to be used, however, is only the first step in a process which is necessary for making it reliable, valid and efficient for use in another context.²

Undertaking the Cross-Cultural Adaptation (CCA) of a research instrument requires the same methodological rigor adopted in elaborating an instrument from scratch, so that reliability and validity may be maintained. The instrument adapted will contribute to the undertaking of robust transcultural studies, for comparison between different contexts, and the production of a body of knowledge which is more dense and significant.² As a result, the rationale for studies of this nature is mainly that the number of multicentric, multinational and multicultural studies has increased.³

In the process of CCA, two components are essential. These can be undertaken in combination or separately. They are: the literal translation of words and sentences, from one language to another, and the adaptation, regarding the language, culture, context and lifestyle of the target-population. The combined use of translation and adaptation is

indicated when the researcher is to make use of a research instrument in a population which differs in terms of culture and language from that for which the original instrument was created.⁴

The theoretical approaches, which serve as a basis for defining the steps or stages to be undertaken during the process of CCA, and which are available in the literature published on the topic are various, there being no consensus on the implementation strategies to be used.⁵ Among these, emphasis is placed on the universalist approach, considered to be the most appropriate, as it proposes an evaluation model for the process of CCA which covers the following equivalencies: conceptual (bibliographic review of the constructs), by item (relevance for capturing each domain), semantic (ability to transfer the concepts' meaning), operational (mode of administration, format of questions and instructions), and measurement and functional (a synthesis of the remaining equivalencies).⁶⁻⁷

Based in the essential aspects of the universalist approach in CCA, guidelines were published for the stages proposed aiming to achieve semantic, idiomatic, cultural and conceptual equivalencies. At the time of writing, this is one of the most used in adaptation studies, in various countries worldwide, including Brazil.³

This integrative review, therefore, was undertaken with the objective to identifying and analyzing the theoretical approaches and the stages proposed used in the CCA of research instruments to Brazilian Portuguese by people working in nursing in Brazil.

As a result, this study intends to contribute to knowledge on: how CCA studies, geared towards

clinical hospital practice, have been conducted by people working in nursing in Brazil; the theoretical approaches and methodological frameworks adopted; and the specialties which are most studied. Moreover, it makes it possible to analyze the stages of the process of adaptation which are adopted, the consistencies and inconsistencies in relation to the frameworks used, and the use of innovative and successful strategies adopted in these studies.

METHOD

This is a review study, which assists in the construction of a body of knowledge of a discipline and contributes to summarizing and analyzing the results of independent studies. Ganong's guidelines were observed,⁸ in a process of six stages: selection of the topic and definition of the research question; definition of the inclusion criteria for studies, and selection of the sample; representation of the studies selected in the form of tables, considering their common characteristics; critical analysis of the results, identifying differences and conflicts; discussion and interpretation of the results; and clear presentation of the evidence found.

In the first stage, the topic of "transcultural adaptation of research instruments by people working in Brazilian nursing" was defined, and the research question was formulated: which theoretical approaches and stages of cross-cultural adaptation proposed, described in the scientific literature, are adopted in the process of CCA of research instruments into the Portuguese language, in the scientific publications conducted in the field of nursing in Brazil?

In the second stage, the inclusion criteria were defined: articles on scientific research conducted in Brazil by professional nurses, which described the process of CCA of instruments used in clinical hospital practice, published in 2005 - 2016, in Brazilian and international periodicals, in Portuguese, English or Spanish. The search for the articles was undertaken in the following databases: MEDLINE®, Cumulative Index to Nursing and Allied Health Literature® (CINAHL), Scopus®, Web of Science®, Latin American and Caribbean Health Sciences Literature® (LILACS), *Base de Dados de Enfermagem* (BDENF) and the SciELO® Collection. The search syntaxes, combining the descriptors, keywords and their variants, are described in Table 1.

Table 1 - Databases and search syntaxes used in the integrative review. Florianópolis-SC, 2017

Databases	Search syntaxes
MEDLINE®	"cross cultural "[All Fields] AND ("nursing"[Subheading] OR "nursing"[All Fields] OR "nursing"[MeSH Terms] OR "nursing"[All Fields] OR "nurses"[MeSH Terms] OR "nurses"[All Fields] OR "nurse"[All Fields]) AND (("brazil"[MeSH Terms] OR "brazil"[All Fields]) OR brazilian[All Fields] OR brazilians[All Fields] OR brasil[All Fields]) AND (English[lang] OR Portuguese[lang] OR Spanish[lang])"
CINAHL®	"cross cultural AND (nursing OR nurse OR nurses) AND (Brazil OR Brazilian OR Brazilians)"
Scopus®	"(TITLE-ABS-KEY ("cross cultural") AND TITLE-ABS-KEY (nursing OR nurse OR nurses) AND TITLE-ABS-KEY (brazil OR brazilian OR brazilians))"
Web of Science®	TS=("cross cultural") AND TS=(nursing OR nurse*) AND TS=(Bra?il OR bra?ilian*)"
LILACS® and BDENF	(tw:(adaptação transcultural)) OR (tw:(adaptação cultural)) AND (tw:(enfermagem)) OR (tw:(enfermeir*)) AND (db:(lilacs)) OR (db:(bdenf)). Filtros: BD: Lilacs e Bdenf; inglês, espanhol e português; ano de publicação: 2005-2016
SciELO®	"Adaptação transcultural" OR "adaptação cultural" OR "cross cultural" OR "adaptación transcultural" AND enfermagem OR enfermeir\$ OR nursing OR nurse\$ OR enfermeria OR enfermer\$" "cross cultural" AND (nursing OR nurse OR nurses) AND (Brazil OR Brazilian OR Brazilians)"

As a result of the searches undertaken between July and August 2016, the following were located: a total of 48 publications in MEDLINE®, 18 publications in CINAHL®, 64 publications in Scopus®, 36 publications in Web of Science®, 17 publications in LILACS®, eight publications in BDENF and 133 in SciELO®, totaling 324 publications. After the elimi-

nation of those which were indexed in more than one databases, 169 were left; the abstracts of these were read, which led to the exclusion of 125 articles. A total of 44 articles was therefore left for reading of the complete text. After being subjected to the inclusion criteria described above, 22 articles were included in the review (Figure 1).

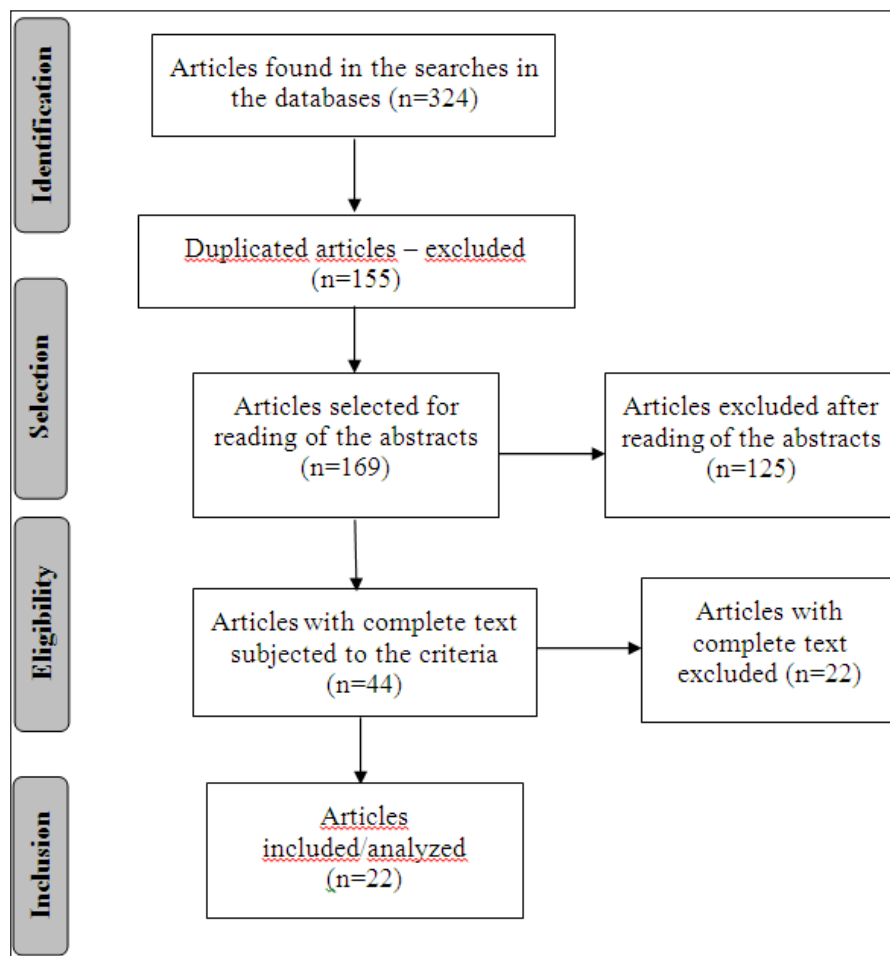


Figure 1- The flow of the process of selection of articles included in the integrative review. Florianópolis-SC, 2017

Once the articles had been selected, in the third stage of the review, the information considered relevant, in accordance with the research question and the review's objective, was collected. The information was taken from the texts of the articles selected and was organized in bibliographic digital files and in a table, which contained: the article's title, authors, year of publication, periodical in which it was published, database in which it is indexed, stages of the process of CCA described, and methodological approach adopted by the article's authors, name of the instrument which was cross-culturally adapted, and the clinical specialty in which the study took place.

The fourth stage of the review was then undertaken. This consisted of the evaluation of the studies, through a meticulous and critical analysis of the files and of the table, and – when necessary – involved in the rereading and reviewing of the article in full. For analysis of the studies, the methodological references cited by the articles' authors, and the concept of the universalist approach, were

used.⁶ The methodological rigor in accomplishing each stage of the CCA, and the meticulous description of the information essential for the reader to judge the study's methodological quality, were analyzed. Through this, it was possible to organize the two main categories of the analysis: the strong points of the methodology, and the methodological weaknesses.

In the fifth stage, the theoretical approaches in which the studies selected are anchored were presented, along with the stages which these studies include in order to accomplish the CCA process. It also presented the instruments which have been subjected to CCA by those working in the field of nursing in Brazil. There was also discussion regarding the studies' most frequent weak points – and the strong points present in these studies.

In the sixth stage, a summary of the most relevant methodological information available was elaborated containing the results, which will be presented below, in the results and discussion.

RESULTS

Most of the articles analyzed (18) were published between the years of 2011 and 2014⁹⁻²⁶ (Table 2) and the most frequently-found specialties were Clinical Medicine^{10,13,17,25,27} and Pediatrics^{9,14,17,20}. The most-used methodological framework for CCA, in 20 articles analyzed, was that with Beaton as either the main author or as a contributing author, published in different years.^{9-12,14-17,19-30}

Regarding the stages of the CCA process, in 14 of the articles analyzed^{11-12,14-16,18-21,24,26-27,29-30} the following sequence was adopted: translation, synthesis of the translations, back-translation, analysis by a committee of specialists, and pretesting of the adapted version.¹ In the other studies^{9-10,13,17,22-23,25,28} this sequence of the process was altered.

In three of the studies analyzed, the authors submitted all the material produced during the CCA to the creators of the original version of the instrument.^{16,21,26}

In four of the articles, however, there was no information on the nationality of the translators^{11,17,20,28} responsible for the stages of translation and/or back-translation of the instrument. In six^{21,23,25,27,29-30} articles analyzed, there was either a partial or total absence of information on the obligatory characteristics or criteria for selecting the translators responsible for the stages of initial translation and back-translation, or the recommendations regarding these criteria were not followed.

Regarding the number of versions produced in the translation and/or back-translation stage, in three studies^{11,13,17} only one version was produced, failing to comply with the recommendations of the

methodological frameworks adopted. In relation to the minimum number of participants in the sample of the pretest of the instrument, in three articles analyzed^{10,28-29} it was possible to observe the use of samples with fewer than 30 to 40 people.

Regarding the methodological approach adopted, in all the studies analyzed,⁹⁻³⁰ one could observe the effort necessary for achieving, at the least, the idiomatic, semantic, cultural and conceptual equivalencies – characterizing this, therefore, as being universalist.

Regarding the description of the procedures adopted in the stages of CCA it was observed that in 20 articles^{9-17,19-21,23-30} the authors were concerned with giving a detailed description of the largest part of the process, evidencing the attention given to the methodological rigor adopted.³ The description of the process of selecting the experts who made up the specialist committees was observed in 18 articles.^{9,11-17,19,22,24-28,30}

In 17 studies^{9-10,12-14,17-19,21-28,30} the evaluation of the psychometric properties of the instruments was undertaken, along with the validation of the qualitative and quantitative content (the expert committee), with a description of the statistical analysis used. Among the statistical tests used in the psychometric evaluation, the Alfa Cronbach test deserves to be highlighted, used in the analysis of the instrument's internal consistency (reliability), given that this was undertaken in 09^{9-10,12,14,18,24-25,28} of the 17 articles (Table 2).

The making available of the version of the instrument which underwent CCA as part of the body or of the appendix of the publication was observed in four articles analyzed.^{16,22,26,29}

Table 2 – Description of the studies included in the integrative review. Florianópolis-SC, 2017

Title and authors	Year	Stages of the process of cross-cultural adaptation*	Detailing of the psychometric evaluation
1. Adaptação transcultural do Pressure Ulcer Scale for Healing (PUSH) para a língua portuguesa ²⁷	2005	1, 2, 3, 4, 5 and psychometric analysis	Inter-observer reliability (simultaneous and independent comparison). Convergent validity, through the simultaneous application of the PUSH in a single group.
2. Adaptação transcultural da "Burns Specific Pain Anxiety Scale - BSPAS" para ser aplicada em pacientes queimados brasileiros ²⁸	2006	1, obtaining of 1 st consensus, 4, 3, obtaining of 2 nd consensus (back-translation), comparison between the original version and that of the 2 nd consensus, semantic analysis and 5	Analysis of the internal consistency (α Cronbach and Pearson product-moment correlation coefficient). Construct validity (Spearman's correlation coefficient)
3. Tradução e adaptação transcultural para a língua portuguesa do In-Hospital Utstein Style ²⁹	2008	1, 2, 3, 4 and 5	No psychometric evaluation

Title and authors	Year	Stages of the process of cross-cultural adaptation*	Detailing of the psychometric evaluation
4. Adaptação cultural e análise da confiabilidade do instrumento Modified Dyspnea Index para a cultura brasileira ³⁰	2010	1, 2, 3, 4, 5 and psychometric evaluation	Reliability - intraobserver equivalency (kappa coefficient) for evaluation of the degree of agreement between two health professionals
5. Tradução para a língua portuguesa e validação da escala de Braden Q para avaliar o risco de úlcera por pressão em crianças ⁹	2011	1, 3, 5, evaluation of the items' internal consistency, and evaluation of intra-observer reproducibility	Analysis of the items' internal consistency (α Cronbach). Reproducibility (Spearman correlation between the items) - application of the scale by two observers, at three distinct points, through the intraclass correlation and Pearson correlation.
6. Cross-cultural adaptation and psychometric properties of the Brazilian-Portuguese version of the Duke Anticoagulation Satisfaction Scale ¹⁰	2011	1, 1 st version of the instrument, 4, 3, final version (English), semantic evaluation, 5 and validation of the Brazilian version (psychometric evaluation)	Construct validity (Pearson linear correlation). Analysis of internal consistency (α Cronbach)
7. Tradução e adaptação cultural do Global Appraisal of Individual Needs - Initial ¹¹	2012	1, 2, 3, 4 and 5	No psychometric evaluation
8. The Pain Disability Questionnaire: a study of reliability and validity ¹²	2012	1, 2, 3, 4, 5 and psychometric evaluation	Analysis of internal consistency (α Cronbach) and stability (test-retest). Practicality (measurement of the time necessary, and facilities needed in order to complete the instrument)
9. Tradução e adaptação transcultural do instrumento "Spiritual Assessment Scale" no Brasil ¹³	2013	1, 3, 4, analysis of the internal consistency, application of the instrument	Analysis of the internal consistency (α Cronbach)
10. Cross-Cultural Translation and Adaptation to Brazilian Portuguese of the Paediatric Pain Profile in Children With Severe Cerebral Palsy ¹⁴	2013	1, 2, 3, 4 and evaluation of clarity and reliability	Analysis of internal consistency (α Cronbach) and stability (test-retest)
11. Tradução e adaptação cultural do Newcastle Satisfaction with Nursing Scales para a cultura brasileira ¹⁵	2013	1, 2, 3, 4 and 5	No psychometric evaluation
12. Tradução e adaptação transcultural do instrumento Edmonton Symptom Assessment System para uso em cuidados paliativos ¹⁶	2013	1, 2, 3, 4 and 5 and submission of the translation to the authors	No psychometric evaluation
13. Morse Fall Scale: tradução e adaptação transcultural para a língua portuguesa ¹⁷	2013	1, 4, 2, study on the clarity and on the evaluation of the agreement between the evaluators/judges, reliability of reproducibility	Evaluation of agreement between evaluators/judges (Kappa Coefficient)
14. Cross-Cultural adaptation and Psychometric Testing of the Brazilian Version of the Self-Care of Heart Failure Index Version ¹⁸	2013	1, 2, 3, 4, 5 and psychometric evaluation	Convergent construct validity and confirmatory factorial analysis and analysis of internal consistency (α Cronbach)
15. Tradução transcultural de instrumentos de qualidade do processo de doação de órgãos ¹⁹	2014	1, 2, 3, 4, 5, analysis of reliability and stability	Analysis of reliability through interobserver equivalency and of the stability (test-retest)
16. Adaptação cultural para o Brasil da escala Pain Assessment in Advanced Dementia - PAINAD ²⁰	2014	1, 2, 3, 4 and 5	No psychometric evaluation
17. Adaptação transcultural e validação clínica da Neonatal Skin Condition Score para o português do Brasil ²¹	2014	1, 2, 3, 4, 5 and psychometric evaluation	Intra/interobserver agreement (adjusted kappa). Intra/interobserver reliability (intraclass correlation coefficient and Bland-Altman method)

Title and authors	Year	Stages of the process of cross-cultural adaptation*	Detailing of the psychometric evaluation
18. Adaptação cultural e validação da reprodutibilidade da versão em português (Brasil) da escala de dor Pain Assessment in Advanced Dementia (PAINAD-Brasil) em pacientes adultos não comunicantes ²²	2015	1, 4, 2, 3 and psychometric evaluation	Construct validity (analysis of the main components with Varimax rotation). Adjustment of the factorial analysis (Kaiser-Meyer-Olkin Test - KMO). Reliability through internal consistency and inter-evaluator agreement (Cohen's kappa coefficient for the ordinal variables).
19. Adaptação cultural, validade de conteúdo e confiabilidade interobservadores do "STAR Skin Tear Classification System" ²³	2015	1, 4, 3, content validity and interobserver reliability	Content validation and interobserver reliability
20. Neonatal Infant Pain Scale: Cross-Cultural Adaptation and Validation in Brazil ²⁴	2015	1, 2, 3, 4, 5 and psychometric evaluation	Validity, reliability, and internal consistency. The Student t-test, kappa, Bland-Altman method and Cronbach α were used
21. Cultural adaptation and analysis of the psychometric properties of the Brazilian version of the Spiritual Distress Scale ²⁵	2015	1, 2, 3, comparative analysis between the back-translated version and the original by five health professionals, 4, 5 and psychometric evaluation	Construct validation (analysis of divergence and factors) and internal consistency and reliability (Cronbach α and kappa)
22. Tradução e adaptação para o português do instrumento avaliação de paciente em hemodiálise - CUDYR-DIAL ²⁶	2016	1, 2, 3, 4, 5 and submission of the material produced to the authors of the original instrument	Analysis of correlation between evaluators in each item, by cross-comparison (weighted kappa coefficient)

*Stages of the process of Cross-cultural Adaptation: 1 - Translation; 2 - Synthesis of the translations; 3 - Back-translation; 4 - Analysis by committee of specialists; 5 - Pretest of the adapted version

DISCUSSION

The data analyzed evidences a considerable number of studies on CCA of foreign instruments conducted by people working in the area of nursing in Brazil, aiming to make it possible to use these instruments in the context of clinical hospital practice in Brazil.

In the analysis of the findings, the existence became clear of strong points which deserve to be emphasized, such as the accomplishment of all the stages stipulated in undertaking a process of CCA, and the use of creative and innovative strategies. However, methodological weak points were observed which could interfere negatively in the quality and reliability of the instruments adapted – for instance, the absence of description of details of the essential stages, and failure to adopt the internationally-accepted recommendations.

In one of the studies analyzed, it was observed that a quality primary methodological framework, recognized internationally in the area of CCA and methodological studies, was not used – as the study was based on a separate study on the application of the cross-cultural adaptation process.¹³

Although in some studies, inversion or changes in the order of undertaking the stages of the CCA stipulated by the frameworks adopted have been observed, in all of the articles analyzed in the present

study, it was observed that all the stages were complied with, in conformity with the methodological proposal recommended by the references.

Among the important aspects to be carefully described in the studies, one finds the profile of the translators (translation and back-translation), the number of translators involved in these stages, their nationalities, and their command of the languages (of the original version and of the adapted version).^{3,31-32}

In the process of CCA of instruments, it is fundamental to appropriately define the number and qualification of the specialist professionals who will make up the committee of experts. In order to choose the composition appropriately, with members who form a committee with the ability to make relevant judgments and take informed decisions, which lead to the equivalency of the instrument, it is necessary to take into account their training, clinical experience, and productions and publications, both in the area and in adaptation methodologies, along with the candidates' professional qualifications. It is, therefore, essential to describe the criteria used in the selection of the members.³³

The guidelines used most as methodological frameworks for CCA studies recommend the forming of multidisciplinary committees of experts, with members who are bilingual and specialists in the area of knowledge relevant to the instrument, who

have received information on the concepts involved.⁴ As examples of suggested members, one finds professionals from the health area, language teachers, specialists in the methodology, and translators who are participating in other stages of the process.³

The evaluation by committee of experts can encompass qualitative and quantitative procedures. The qualitative procedures include the expert's individual and independent evaluation which may be followed by evaluations undertaken in meetings with the group of experts, in which one can either include or not the participation of the researchers.³³

The quantitative procedures relate to the statistical measures used for quantifying the degree of agreement between the experts in the process of evaluating the content. Among the most used, one finds the percentage of agreement between the experts or judges, which is calculated by dividing the number of participants who agreed by the total number of participants, and multiplying the result by 100. Another much-used measure in the area of health is the Content Validity Index, which measures the proportion of judges who agree on specified aspects of the instrument, which has – has its main advantage – the fact that it makes it possible to analyze each item of the instrument individually, and then to analyze the instrument as a whole. In addition to this, one can make use of the Kappa coefficient to assess measurements of inter-rater agreement in the health area.³³

Among the innovative strategies adopted in the process of CCA, in one of the articles analyzed in this review,²⁸ the inclusion of patients was observed in the experts committee and in the semantic analysis of the items, so that their understanding regarding the instrument could be assessed before the pretest. Some authors³⁴⁻³⁵ have suggested the inclusion of lay persons, with similar characteristics to members of the study population, with the objective of ensuring that terms, words and expressions which are not understandable or clear for this public may be corrected at an early stage.

It was also observed in this review that, in a proportion of the articles analyzed, the authors described the inclusion and exclusion criteria for patients selected for the sample for the pretest of the instrument which was in the process of being adapted. What delimits the population of a study is the criteria which qualify and characterize its members (criteria of inclusion or eligibility).³⁶⁻³⁷ Another way of defining the members of a study population is to define the characteristics that these must not have in order to make up a given population (exclusion criteria).³⁶

Continuing on the topic of the pretest of the instrument, the strategy of including other members in the target population, besides the patients, was observed – such as, for example, health professionals, in four articles analyzed in this review.^{9,14,17,20} The authors' rationale for adopting this strategy was that – after the CCA – these extra members would be responsible for applying the instrument in clinical practice and that it was therefore necessary that they should have the necessary credentials in order to give opinions on the instrument's understandability and clarity.

Internationally-recognized authors in the area of CCA of instruments recommend the submission of all the material produced during the adaptation process to the authors of the original instrument.³ However, it was only in two of the articles analyzed in this review^{14,21} that the direct participation of the author of the original instrument was observed during the adaptation process, which would certainly add value and attest the reliability and quality of the final product – the adapted instrument.

According to the recommendations and guidelines of the authors used as a reference in the studies analyzed, the translators must be bilingual, have a thorough command of the language of the original version of the instrument, and have a mother tongue which is similar to that of the country in which the instrument being adapted will be used.^{1,3-4,38}

Regarding the command of the languages and the mother tongue of the translators responsible for the initial translation, it was observed that the recommendations from the methodological frameworks adopted were not complied with, as the translators who undertook the initial translation had English as their mother tongue rather than Portuguese, or, one of the translators of the initial translation had English as his mother tongue. According to the authors taken as references^{1,3-4,38} at least two versions must be produced in the initial translation, and two versions in the back-translation.

Another important methodological aspect is the size of the sample for the pretest which, according to Beaton and collaborators,³ must involve a minimum of 30 to 40 people.

Recommendations for new studies on cross-cultural adaptation

Based on this integrative review, it is proposed that there should be a script based on recommendations and successful experiences. The first step is to select a methodological framework with credibility

in this area of research, and rigorously comply with all the stages proposed.

In the stages of the initial translation and back-translation, one must observe: the number of translators, their background, nationality and command of the languages of the country where the original instrument was elaborated and of the country where the cross-culturally adapted version will be used. The minimum number of versions to be produced is another important aspect.

In the stage of the evaluation by a committee of experts, one must include, among the selection criteria: the number of members, their training, their clinical experience, their productions/publications in the specialty which is the subject of the instrument, their production/publications in the method of CCA, and the experts' command over the languages used in the versions of the instrument. Moreover, the experts must be provided with information about the concepts involved in the instrument, and with the materials produced in previous stages, as well as guidance necessary for carrying out the evaluation.

In order to add value to the content analysis (the experts' evaluation), it is important to associate qualitative strategies (individual opinions) and quantitative ones (statistical measures for measuring the degree of agreement between the experts). After analyzing the experts' evaluations, one must send them the pre-final version of the instrument and request feedback from them regarding the results achieved, bearing in mind that this version must be the product of consensus between them.

In the stage of the instrument's pretest, defining criteria for selection of the sample, and respecting the minimum number for the sample, are basic procedures to be adopted. Sending and submitting all the material produced in the process of CCA to the author(s) of the original instrument shows honesty and clarity adopted in conducting the study.

Finally, emphasis is placed on the importance of making the adapted instrument available, within the text of publications describing CCA studies, bearing in mind the researcher's commitment to society, in undertaking a study of this nature: that is, to offer professionals and researchers an instrument which is reliable and suitable for use, both in practice and in future studies.

CONCLUSION

This review made it possible to identify the panorama regarding CCA studies of research instru-

ments undertaken by people working in the area of nursing in Brazil, geared towards clinical hospital practice. The analysis of the data collected evidences that, at various points, the researchers prioritize the psychometric evaluation of the instruments to the detriment of the pillar which supports a reliable CCA - respect for the methodological rigor.

The implementation and the description of each procedure adopted in the process of adaptation shows the reader the seriousness with which it was conducted. In this type of study, the meticulous accomplishment of each particular characteristic makes all the difference in the final result: the production of a cross-culturally adapted instrument which is reliable and which may be used in practice and in other studies.

This study's findings could support researchers who may use CCA, allowing them to gain a broader understanding of the method, given that this review's results allow them to carry out a critical analysis prior to the process to be undertaken. The undertaking of further review studies is recommended, so as to monitor the trajectory of CCA studies geared toward other levels of healthcare.

ACKNOWLEDGMENTS

The authors express their particular thanks to Maria Gorete Monteguti Savi, the librarian of the Departmental Library of the Health Sciences Center of the UFSC, for her invaluable help in refining the search syntaxes, contributing enormously to the undertaking of this integrative review.

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