Cross-cultural adaptation of an instrument to measure the family-centered care

Adaptação transcultural de instrumentos de medida do cuidado centrado na família

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Abstract

Objective: To assess the cross-cultural adaptation to Brazilian Portuguese of two instruments for the measurement of family-centered care, one for parents and one for healthcare professionals.

Methods: Methodological study of cross-cultural adaptation following the phases of translation, back-translation, analysis by experts, pre-test, test-retest and psychometric analysis after the application of the instrument to 100 parents of hospitalized children and 100 professionals from pediatric units of a teaching hospital.

Results: The evaluation of experts in both instruments showed a Kappa of 0.85 and 0.93 respectively. At pretest, participants suggested no changes. Test-retest reliability was good for both stability indexes. Factor analysis explained 43.9% of the total variance in the parents instrument and 43.4% in the staff instrument. Cronbach's alpha coefficient was 0.723 for the parents instrument and 0.781 for the staff instrument.

Conclusion: The instruments adapted to the Brazilian culture presented reliability, stability and good internal consistency, with potential to be used in the pediatric clinical practice.

Resumo

Objetivo: Realizar a adaptação transcultural para a língua portuguesa brasileira de dois instrumentos de medida do cuidado centrado na família, um para pais e outro para profissionais da equipe de saúde.

Métodos: Estudo metodológico de adaptação transcultural seguindo as etapas de tradução, retrotradução, análise de especialistas, pré-teste, teste-reteste e análise psicométrica após aplicação do instrumento com 100 pais de crianças hospitalizadas e 100 profissionais de unidades pediátricas de um hospital universitário.

Resultados: A avaliação por especialistas de ambos os instrumentos apresentaram *Kappa* de 0,85 e 0,93 respectivamente. No pré-teste, os participantes não sugeriram alterações. No teste-reteste houve bons índices de estabilidade em ambos. A análise fatorial explicou 43,9% da variância total no instrumento pais e 43,4% no instrumento equipe. O coeficiente *Alpha de Cronbach* foi 0,723 no instrumento pais e 0,781 no instrumento equipe.

Conclusão: Os instrumentos adaptados para a cultura brasileira apresentaram confiabilidade, estabilidade e boa consistência interna com potencial para ser utilizado na pratica clinica pediátrica.

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Introduction

Family-centered care (FCC) has been promoted as an ideal model for the care of children and their parents in the hospital,[1-4] and in different healthcare contexts. It is based on the premise that the family is central to, and a constant in the lives of infants, children, adolescents, adults and the elderly, since the family, however defined by them, is their primary source of strength and support.

Recent studies[5-9] have questioned the effectiveness and effects of the implementation of this model of care, and reinforce the importance of producing evidence to support its application in practice. In this sense, it is necessary to use reliable instruments which have been tested and which can measure how health professionals caring for patients and families realize the application of this model in health units. This will allow to identify barriers and to propose strategies for the implementation of FCC in various pediatric contexts.

A set of questionnaires in English, the Shields & Tanner Questionnaires,[10] was developed to measure and compare the perspectives of parents and health professionals on FCC in different pediatric contexts. The instruments are structured and self-administered for both parents and health professionals and the questions are matched so that direct comparisons can be made between responses from the two groups. In each questionnaire, the first part includes sociodemographic questions and the second part presents 20 questions grouped into three domains: respect, collaboration and support. The respect domain includes items about recognizing the rights of the family in the hospital. The second domain, collaboration, reflects the recognition of the parental role in the partnership for the child's care. The third domain, support, consists of items related to how healthcare professionals support the family. The measurement uses Likert scales with four alternatives to each question: never, sometimes, often and always.

The questionnaires were named Perceptions of Family-Centered Care-Parent (PFCC-P) and Perceptions of Family-Centered Care-Staff (PFCC-S).[11]

These tools are useful to test the perceptions of health professionals, who are engaged in assisting patients and families, across several disciplines; for professors, researchers and managers to guide a practice based on the foundations proposed by the FCC, and to assess barriers to its implementation, and measure the effect of interventions to promote its use.

The objective of this study was to develop the cross-cultural adaptation of measurement instruments of the perception of parents and health professionals on FCC to the Brazilian Portuguese language.

Methods

This was a methodological study, in which the authors adopted steps internationally recommended for cross-cultural adaptation of measurement instruments, considering the rigorous process of testing and re-testing it requires, including[12,13] (Figure 1): (1) translation of the original English version of the instrument to Brazilian Portuguese by two bilingual translators; (2) back-translation of the instrument content to the original language; (3) review by the expert panel who analyzed the proposed version as for equivalences: semantic, idiomatic, cultural, conceptual, and items; (4) consensus and level of agreement among the experts in the comparisons of the versions of translation, back-translation and the original instrument; (5) pre-test applied to a group of individuals from the target population to assess comprehension of the instrument items; (6) test-retest applied to a group of individuals from the target population, in the interval of one week, to obtain agreement on stability; and (7) evaluation of the psychometric properties through reliability and validity tests.[14,15]

Phases of pre-test, reliability and validity were conducted in a teaching hospital in the southern region of São Paulo, Brazil.

For equivalences of items, conceptual, cultural, idiomatic and semantic, an expert panel was formed with seven individuals, including two researchers

on the theme of family, three healthcare specialists in pediatrics, one of the translators who participated in the back-translation phase and a family representative of hospitalized children.

The sample for pre-test and test-retest reliability of the instruments consisted of 20 subjects - ten parents of children who were hospitalized in two pediatric wards, one surgical and another medical, and ten health professionals working in these wards.

The final sample for the clinical application phase consisted of 200 subjects, in accordance with the recommendations for validation studies, which suggest at least five subjects multiplied by the number of variables in the instrument;[12] namely 100 healthcare professionals and 100 parents of children who were hospitalized in Surgical Pediatric, Medical Pediatric, Emergency Pediatric, Pediatric Intensive Care and Neonatal units and health professionals working in these wards (Figure 1).

During, the data collection, in the phase of content validity with the expert panel, the Delphi technique was applied to obtain a minimum level of agreement of 80% for each item.[14] The Content Validity Index (CVI) was used for each item to analyze the collected data in this phase, considering a minimum value between 80% and 85% to determine the reliability of the instrument as satisfactory.[14]

The Kappa coefficient,[12,14] and the intraclass correlation coefficient[12] were used to assess the degree of agreement among the experts and to verify the stability and reproducibility of the instruments in the test and re-test phases.

For construct validity an exploratory factor analysis and main components analysis with orthogonal rotation, by the Varimax method, were applied with the aim of maximizing the sum of the variances of the loads in the factorial matrix.[15] Values above 0.4 were considered acceptable as

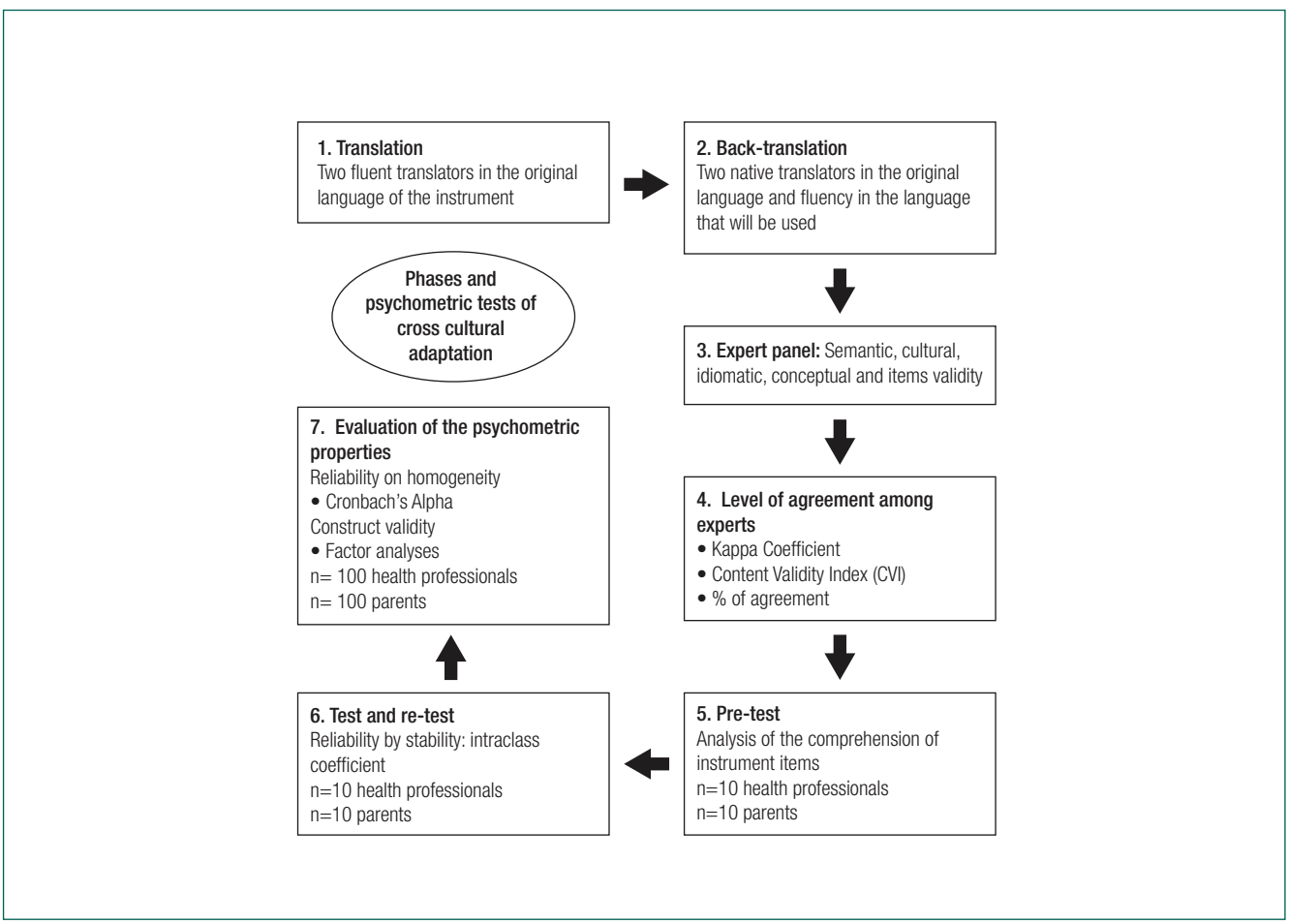

Figure 1. Phases of the cross-cultural adaptation

factor loading for maintenance of the item in the final instrument.

Exploratory factor analysis was used in this study because the instrument items were not previously grouped in the pilot study for the construction of the original instruments. This analysis allows the researcher to identify which items best define the construct, when adapted to Brazilian Portuguese.

The Kaiser-Meyer-Olkin (KMO) measurement was used to verify the sampling adequacy for factor analysis, with a value higher than 0.7 classified as good and above 0.85 as excellent.[16] Internal consistency analysis by Cronbach's alpha coefficient (α) was used to calculate instrument reliability.[12] The level of significance for the tests was set at 5% (α = 0.05) and the statistical package used was SPSS for Windows, version 19.0 (SPSS Inc., Chicago, Illinois).

The development of this study complied with national and international ethical guidelines for research involving human subjects.

Results

The phases of cross-cultural adaptation of the instruments Perceptions of Family-Centered Care-Parent (PFCC-P) and Perceptions of Family-Centered Care-Staff (PFCC-S) were performed successfully. In the translation phase, the researchers evaluated the versions of the two translators and a synthesized version (Version I) was produced, which was approved by the translators. In the back-translation phase of Version I of the instruments no changes were required.

When evaluated by the expert panel, Version I of both instruments was modified in relation to the words and expressions that best represent comprehension in the Brazilian culture, resulting, after four rounds, in Version II, which presented CVI between 86% and 100%, and *Kappa* values of 0.85 in the parents questionnaire and 0.93 in the staff questionnaire.

In the pretest, both parents and staff evaluated the language as clear and easy to understand, without suggestions for changes, with an average time of completion of seven minutes.

In the test-retest, for all items, the value of the intraclass correlation coefficient was ≥0.706 in PFCC-P Version II and ≥ 0.756 in PFCC-S Version II. Overall, good stability indexes were found for both instruments.

The evaluation of the psychometric properties of the PFCC-P Version II was conducted with 100 parents of children hospitalized in pediatric units. The sample was 81% female; 37% were aged between 31 and 45 years and 22% between 26 and 30 years. In relation to their educational level, 31% had completed high school, whereas 28% had not completed high school. Parents spent an average of 1 to 2 hours (53%) to go from them homes to the hospital, with a reasonable degree of difficulty or somewhat difficult (36% and 23%) respectively. Regarding the number of children, 80% had one to two children and 79% of the sample reported having someone else helping them at home with the care of children.

Regarding the variables related to the children, 55% had been hospitalized before. Among the reasons for hospitalization, 19% were there for respiratory diseases, 16% had heart diseases and 13% could not explain the reason for admission. The mean length of hospital stay was one week, but 87% of respondents were unaware of the possible date of hospital discharge for their child.

In implementing PFCC-S instrument Version II, most participants were female (84%), aged between 26 and 30 years (43%); 42% were physicians; 29% nurses, 25% were physical therapists and 4% had other professions, such as social assistant and nutritionist. As to educational level, 53% reported having graduated from university, 23% had graduate qualifications in pediatrics and 17% in both pediatrics and neonatology. The majority (56%) reported working in pediatrics for three years or more.

The Kaiser-Meyer-Olkin (KMO) score for the PFCC-P instrument Version II was 0.709 and for the instrument PFCC-S, Version II, it was 0.716. The factor analysis using main components with

orthogonal rotation (Varimax) showed that three previously fixed factors were able to explain 43.9% of the total variance in PFCC-P, Version II and 43.4% in PFCC-S, Version II. The dispersion of the factor loadings of each item in the PFCC-P, Version II and in the PFCC-S, Version II, according to three factors and the association with the domains respect, collaboration and support in the original instrument showed that there were at least three items for each factor, and each factor was related to more than one domain of the original instrument (Figures 2 and 3).

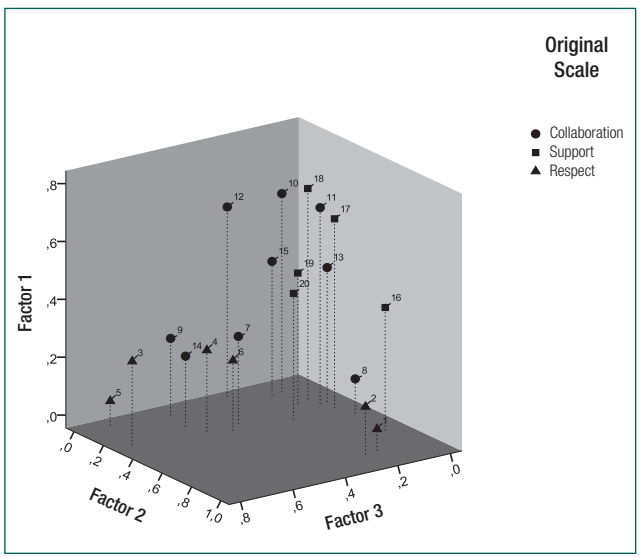

Figure 2. Dispersion of the factor loadings of each item in PFCC-P, as per three factors and sessions

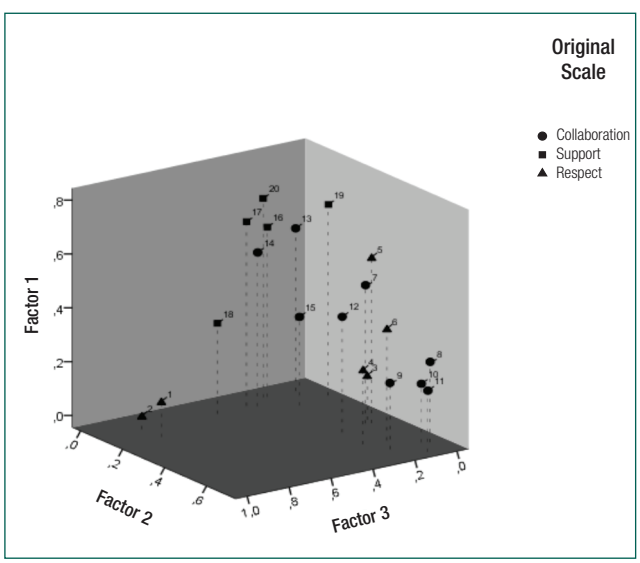

Figure 3. Dispersion of the factor loadings of each item in PFCC-S, as per three factors and sessions

In PFCC-P, Version II, there were three items with acceptable factor loading for more than one factor *"My child's privacy and confidentiality are respected"; "I feel prepared for discharge/referral to other community services after my child's discharge"; and "The staff understands what my family and I are going through"* (Figure 2).

In PFCC-S, Version II, there were two items with high factor loading for more than one factor "*Parents are prepared to discharge / referral to other services in the community to follow children up after discharge*" and "*Parents are informed about the name of the physician responsible for the care of their child*" (Figure 3). One item presented low factor loading for three factors *"Parents are overwhelmed with information they receive about their child."*

Cronbach's alpha coefficient was 0.723 in the parents instrument and 0.781 in the staff instrument.

Discussion

The instruments Perceptions of Family-Centered Care-Parent Brazilian Version and Perceptions of Family-Centered Care-Staff Brazilian Version submitted to cross-cultural adaptation obtained satisfactory internal consistency indices, and a factor loading of at least three items for each factor. However, there were items with low factor loading and others were strongly associated with more than one factor, which can indicate a problem in the construction of the item, in the dimension design or in the comprehension of the item within the approach of the Family-Centered Care.[16]

Both instruments presented good potential to be used in the pediatric practice, contributing to the identification of barriers in the implementation of the model of family- and patient-centered care, so as to guide the proposal of interventions to minimize them.

There was similarity in the responses of parents and professionals in the questions regarding family- and patient-centered care when compared with those found in the application of the original instrument,[10,16] in the dimensions respect, collaboration and support.

The reliability of the instruments adapted to Brazilian Portuguese was similar to that of the pilot study,[10] whose values of Cronbach's alpha ranged between 0.72 and 0.79, in comparison to Cronbach's alpha values ranging between 0.72 and 0.78 in the Brazilian version.

Three factors were capable of explaining 43.9% of the total variance in the parents instrument and 43.4% in the staff instrument. A similar result was found in the study of adaptation of the original instruments when applied in an adult intensive care environment,[16] in which the total variance for the extraction of three factors was 46.6%.

In the literature, a solution explaining 60% of the total variance is considered satisfactory. For future research, psychometric evaluation of these tools in other populations with larger sample sizes, or a review of the number of factors is recommended. The authors suggest the use of a larger sample, considering 20 respondents per item as the ideal number.[15]

After completing all phases, the adapted instruments received the following names: Perception of Family-Centered Care – Parents, *Brazilian version* (PFCC-P *Brazilian version*) and Perception of Family-Centered Care – Staff, *Brazilian version* (PFCC-S *Brazilian version*).

Conclusion

The instruments adapted to the Brazilian culture presented reliability, stability and good internal consistency, with potential to be used in the pediatric clinical practice.

Collaborations

Silva TON; Alves LBO; Balieiro MMFG; Mandetta MA; Tanner A and Shields L declare they have contributed to the project concept, analysis and interpretation of data, relevant critical review of its intellectual content, and approval of the version to be published.

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