Cross-cultural adaptation of Parental Bonding Instrument (PBI) to Brazilian Portuguese

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INTRODUCTION

The importance of childhood relationships with parents for personality development is traditionally acknowledged by different psychology theoreticians. Studies in humans and in animal models have demonstrated that, besides constitutional aspects, the actual parental behavior of offering tenderness and protection without restricting autonomy is crucial both to develop the ability of dealing with adverse situations in adult life and to reduce the risk of psychopathology, as well as to allow the establishment of healthy affectionate bonds.\textsuperscript{1-10} This effect seems to take place through behavioral factors, but also due to definitive neurobiological alterations and modeling of gene expression. It has a direct impact on genetically inherited risk factors and resilience.\textsuperscript{11-23}

With the aim of measuring the contribution of parental behavior to the development of appropriate bonds between parents and children, the Parental Bonding Instrument (PBI) was created in 1979 through successive factor analyses, based on 114 items taken from the literature deemed as major parental qualities for normal development.\textsuperscript{24} PBI is a self-administered Likert scale (0 to 3) instrument, with 25 questions related to father and mother, in which subjects answer how similar those behaviors were to their parents’ behavior until the age of 16 years. The instrument measures two constructs: the first one is affection, which is more consistent and clearly bipolar (affection, heat, availability, care, sensitiveness \textit{versus} coldness and rejection); the second construct is control or protection (control, intrusion \textit{versus} encouragement of autonomy).

PBI has been widely used over the past decades, and lack of affection, particularly when associated with \textit{affectionless control}, has been associated with pathologies in adult life, such as depression, anxiety, suicide, personality disorders, among others.\textsuperscript{1-8,25-29} The stability of the PBI over a 20-year period, in a primarily non-clinical population has been recently confirmed. Such study was controlled for gender, physical, and mental health (including mood changes and neuroticism), aspects of lifestyle, work and social network, besides significant life events (positive and negative). It also included and analyzed birth of children during the study as an independent variable. It demonstrated that PBI was in fact a psychometrically strong instrument, stable over
time, and with minimum influence of the variables studied, representing a very useful instrument in risk and resilience researches.30 Furthermore, PBI has been adapted, validated and used in different cultures, without significant alteration of the construct.31-35 It has already been consistently proved that emotional factors and mood changes do not seem to affect the perception of such bonds, even when the instrument is primarily applied to populations that are severely diseased, and after considerable time intervals.35,36

The adaptation of research instruments into different cultures has received special attention because it involves cultural and linguistic issues that might jeopardize the instrument conceptual validity and psychometric properties. This adaptation comprehends several stages. Although there is no consensus, it has been well established that semantic evaluation is only one of the steps needed to the adaptation process.

The adaptation model proposed by Herdman et al.37 uses an approach that admits the possibility of interlocution, but does not a priori assumes the equivalence between constructs in different cultures. The proposed guidelines include appraisal of concepts and dimensions comprehended by the original instrument in the target-culture of the new version, as well as adequacy of each item of the instrument, to evaluate concepts in the population in which the instrument is intended to be used. After this stage, semantic equivalence, operational aspects, and psychometric properties of the new version are verified.37 Such guidelines were used in our country by Moraes et al., who adapted a scoring system to verify the semantic equivalence in cross-cultural adaptation of the Revised Conflict Tactics Scales (CTS2), used to identify couple violence in Brazil.38 According to Moraes et al., Fiszman et al. used this methodology in the adaptation of the Dissociative Experiences Scale in our culture.39

The present study aims at presenting the process of PBI cross-cultural adaptation to Brazilian Portuguese with regard to conceptual equivalence, item equivalence, semantic equivalence, operational equivalence, functional equivalence, and approval of the final version by the author of the original instrument.
METHOD

We used an adaptation of the method used by Moraes et al. to validate the instrument CTS2.\textsuperscript{38}

*Evaluation of conceptual and item equivalences*

This stage consisted of the discussion of concepts and items in the instrument by a group of specialists, composed of two psychiatrists, two family therapists, two psychoanalysts, one child and adolescent psychiatrist, one social worker, and one community physician. The initial focus of the discussion was the consideration of different forms of expressing affection feelings in our country, peculiarities of the parents-children relationship that could be different across cultures, and issues related to restriction of freedom and encouragement of autonomy in our culture. After this, each item was evaluated in order to verify whether it measured the proposed dimension in our population, with regard to affection and control (restriction versus encouragement of autonomy).

This first stage included a literature review, focused on publications that originated the instrument, as well as those that used the PBI over the past decades. The aim was both of knowing the concepts and theoretical definitions that integrated the base of the construct and the strategies used to choose the items that constituted the scale.

*Evaluation of semantic equivalence*

Evaluation of semantic equivalence comprehended several stages. Firstly, the research team was divided into two groups, which performed the translation into Brazilian Portuguese independently, resulting in versions V1 and V2. Afterwards, a pilot-study was carried out with different psychopathologies, with schooling level ranging from 1-13 complete years of study, and volunteer psychology, nursing and medical students. Participants’ age in the first pilot study ranged from 16-67 years. One group applied V1 in patients at Psychosocial Care Center of Hospital de
Clinicas de Porto Alegre (CAPS-HCPA), and in volunteer medical and nursing students, whereas
the other group applied V2 in patients at HCPA Psychiatry Outpatient Clinic, in patients
hospitalized at the HCPA Psychiatric Unit, and in volunteer psychology and medical students. In
this stage, understanding of the items was carefully discussed with the participants.

Based on the pilot study, the group created a third version (V3), taking in account the
previous results and once again discussing aspects of item equivalence. Semantic equivalence was
then verified between V3 and the original version of the instrument (OV). Several criteria must be
considered in the semantic equivalence stage: referential (ideas and objects), connotative (emotional
response caused by each word and by the sentence as a whole), and affective meaning (for example,
one translated word may reflect the translator's moral judgment). In addition, there was the issue of
grammatical structure of the sentence, in which the order of words must actually be changed in
order to maintain the same meaning or emphasis of the original version. We chose to present V3 to
two independent non-psychiatrist translators, who did not know the original instrument. One of
them was both a native English speaker and fluent in Portuguese (T1), and the other was both a
native Portuguese speaker and fluent in English (T2). Based on these back-translations and on the
comparison with the original instrument, the equivalence between pairs of items and the original
instrument was scored concerning referential meaning (A1), with scores ranging from 0 to 100%.
We also scored general meaning (A2), according to the scoring system proposed by Moraes et al.:
unaltered (UN), little altered (LA), much altered (MA), and completely altered (CA).38,39 Such
scoring was performed by three authors independently, and the group discussed occasional
divergences for reaching a consensus (Table 1).
**Table 1 - Process of semantic equivalence analysis**

V3 Este questionário lista várias atitudes e comportamentos dos pais. Conforme você se lembra de sua MÃE/PAI até os seus 16 anos, faça uma marca no parêntese mais apropriado ao lado de cada afirmativa.

T1 *The following questionnaire deals with the attitudes and behavior of parents. Tick the closest answer according to what you remember of your MOTHER/FATHER until you reached 16 years of age.*

T2 *This questionnaire lists several parent’s attitudes and behaviors. According to what you remember from your MOTHER/FATHER until you were sixteen years old; mark the most appropriate parenthesis beside each affirmative.*

VO *This questionnaire lists various attitudes and behaviors of parents. As you remember your MOTHER/FATHER in your first 16 years would you place a check in the most appropriate brackets next to each question.*

<table>
<thead>
<tr>
<th>Item (V3)</th>
<th>A1 T1</th>
<th>A1 T2</th>
<th>A2 T1</th>
<th>A2 T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falava comigo com uma voz meiga e amigável</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 <em>Spoke with me in a soft friendly voice</em></td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2 <em>Talked to me in a gentle and friendly voice</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VO <em>Spoke to me with a warm and friendly voice</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Não me ajudava tanto quanto eu necessitava</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 <em>Did not help me even when I needed help</em></td>
<td>67%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2 <em>Didn’t help me as much as I needed</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VO <em>Did not help me as much as I needed</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Deixava-me fazer as coisas que eu gostava de fazer

T1 *Allowed me to do the things that I liked to do*

T2 *Let me do the things I liked to do*

VO *Let me do the things I liked doing*

Parecia emocionalmente frio(a) comigo

T1 *Seemed emotionally cold with me*

T2 *Seemed emotionally cold with me*

VO *Seemed emotionally cold with me*

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A1 = score of referential equivalence; A2 = score of general equivalence; CA = completely altered; UN = unaltered; T1 = translator whose native language is English and is fluent in Portuguese; T2 – translator whose native language is Portuguese and is fluent in English; OV = original version; V3 = version 3.

**Evaluation of operational and functional equivalences**

Operational equivalence consists of the possibility of using the questionnaire in the same format, mode of administration, and measurement methods as the original instrument. Functional equivalence relates to how much the instrument actually measures in our country, and what it intends to measure in the culture in which it was originally developed. In this sense, the final version of PBI (appendix 1) was again studied in a population similar to the population of the first pilot study, when operational and functional equivalences were verified.

Finally, the final version was again back-translated, and presented to the author of the original instrument, along with the discussion of the different stages of the adaptation process.
RESULTS

Appraisal of conceptual and item equivalences

Expert group discussion and the literature review suggested that the concepts related to parental behavior and used in the creation of the instrument were equally relevant for both cultures. Moreover, items were generally considered appropriate for evaluation of the two dimensions being investigated: affection, heat, availability, care, sensitiveness versus coldness and rejection, and control and intrusion versus encouragement of autonomy. We also considered the previous use of the PBI in quite different cultures with no changes in the construct and with similar psychometric properties, as well as its ability to discriminate populations with different pathologies in the cultures in which it has already been validated. Based on the first pilot study, the group reconsidered aspects related to item equivalence, considering the subjects’ understanding of the items and the OV. In item 16, the translation of Made me feel like I wasn’t wanted to “Fazia com que eu sentisse que não era desejado” was interpreted by part of the subjects as having a sexual connotation, giving preference to the word “querido” in the resulting version. Furthermore, item 20 was modified based on the pilot study, because several subjects understood that “Sentia que eu não poderia cuidar de mim mesmo, a menos que ela/ele estivesse por perto” [Felt I could not look after myself unless she/he was around] referred to a feeling experienced by the subject, and not by the parents. We then chose to add “ela/ele” [she/he] in the beginning of the sentence: “Ela/ele sentia que eu não poderia cuidar de mim mesmo, a menos que ela/ele estivesse por perto” [She/he felt I could not look after myself unless she/he was around]. This stage originated V3.

Evaluation of semantic equivalence

As to referential meaning, the average of evaluations was used in case of divergent results. For all items scored with an equivalence lower than 90% (2, 11, 17, and 20), there was another discussion of the translation adequacy into Portuguese. As to general meaning, there was no divergence between referees, and all items were considered unaltered, except for 11 and 17. During
this stage, we chose to replace the word “triste” [sad] for “chateado” [upset] in question 17, due to connotative criterion.

Finally, the final version (appendix 1) was once again applied to a pilot population, which did not report difficulties in filling out the questionnaire; however, in terms of operational equivalence, we discussed with the author of the original instrument about the possibility of presenting the version for mother and father individually, since adjectives in Portuguese are gender-inflected words. We present the final version (appendix 1) following the same format of the original, which was back-translated again and sent to the author of the original instrument. When discussing the final version with the author, he deemed appropriate both operationalization forms, as well as the final version of the PBI to Brazilian Portuguese (in his words: “close enough to be completely acceptable”).

DISCUSSION

Functional equivalence of a cross-cultural adaptation presupposes that the instrument measures whatever it intends to do in different cultures, and comprehends the whole process, besides the evaluation of its psychometric properties in the culture in which one intends to apply it. In this sense, it is important to compare whether the results of studies using this instrument in our country will be similar to those found in other cultures. It is also necessary, with regard to its final validation, to use studies of factor analysis to estimate internal consistency through Cronbach’s alpha, and the appropriate measurement of items using Rasch item analysis.

Nevertheless, this study makes an initial version of an instrument for risk and resilience research widely used over the past decades available for use in its Portuguese version. It has been judiciously adapted to aspects of conceptual, item, and semantic equivalences, besides being stable through time and apparently representative of the actual parenting. It is worth stressing that knowing the aspects of parents-children relationship that promote mental health favors the development of public health strategies at a primary level, such as educating the parents to become
aware of such aspects. Moreover, acknowledging the importance of the parents’ behavior in the formation of personality has found support in current studies, which demonstrate the direct impact of this behavior on the neurobiological and behavioral modeling.
REFERENCES


ABSTRACT

Objective: This article aims to present a cross-cultural adaptation of the Parental Bonding Instrument to Brazilian Portuguese. It is a self-administered questionnaire developed in 1979, which has been used since then to measure the subjective experience of being parented to the age of 16 years.

Method: The following steps were performed: conceptual equivalence, item equivalence, semantic equivalence, operational equivalence, functional equivalence, and approval of the final version by the author of the original instrument.

Results: The study has reached the objectives of equivalence, and the final Brazilian Portuguese version has been approved by the original author.

Conclusion: The study provides a Brazilian Portuguese version of an instrument that has been proven extremely useful in risk and resilience researches over the past decades, assessing the perception of parental characteristics traditionally related to personality development.

Keywords: Translation, parents, object attachment, parental bonding instrument.

Title: Cross-cultural adaptation of Parental Bonding Instrument (PBI) to Brazilian Portuguese

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**Appendix 1 - Parental Bonding Instrument, Brazilian Portuguese version**

Este questionário lista várias atitudes e comportamentos dos pais. Conforme você se lembra da sua MÃE/PAI até os seus 16 anos, faça uma marca no parêntese mais apropriado ao lado de cada afirmativa.

<table>
<thead>
<tr>
<th></th>
<th>Muito parecido</th>
<th>Moderadamente parecido</th>
<th>Moderadamente diferente</th>
<th>Muito diferente</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falava comigo com uma voz meiga e amigável</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Não me ajudava tanto quanto eu necessitava</td>
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<tr>
<td>Deixava-me fazer as coisas que eu gostava de fazer</td>
<td>( )</td>
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<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Parecia emocionalmente frio(a) comigo</td>
<td>( )</td>
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<td>( )</td>
</tr>
<tr>
<td>Parecia compreender meus problemas e preocupações</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Era carinhoso(a) comigo</td>
<td>( )</td>
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<td>( )</td>
</tr>
<tr>
<td>Gostava que eu tomasse minhas próprias decisões</td>
<td>( )</td>
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<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Não queria que eu crescesse</td>
<td>( )</td>
<td>( )</td>
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<td>( )</td>
</tr>
<tr>
<td>Tentava controlar todas as coisas que eu fazia</td>
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<td>( )</td>
<td>( )</td>
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</tr>
<tr>
<td>Invadia minha privacidade</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Gostava de conversar sobre as coisas comigo</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Freqüentemente sorria para mim</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
Tendia a me tratar como bebê

( ) ( ) ( ) ( )

Parecia não entender o que eu necessitava ou queria

( ) ( ) ( ) ( )

Deixava que eu decidisse coisas por mim mesmo

( ) ( ) ( ) ( )

Fazia com que eu sentisse que não era querido(a)

( ) ( ) ( ) ( )

Podia me fazer sentir melhor quando eu estava chateado

( ) ( ) ( ) ( )

Não conversava muito comigo

( ) ( ) ( ) ( )

Tentava me fazer dependente dele(a)

( ) ( ) ( ) ( )

Ele(a) sentia que eu não poderia cuidar de mim mesmo, a menos que ele(a) estivesse por perto

( ) ( ) ( ) ( )

Dava-me tanta liberdade quanto eu queria

( ) ( ) ( ) ( )

Deixava-me sair tão frequentemente quanto eu queria

( ) ( ) ( ) ( )

Era superprotetor(a) comigo

( ) ( ) ( ) ( )

Não me elogiava

( ) ( ) ( ) ( )

Deixava-me vestir de qualquer jeito que eu desejasse

( ) ( ) ( ) ( )