



Coparenting Questionnaire (CQ): Adaptation and Validity Evidences for Brazilian Context

Amanda Porto Padilha¹ (D)
Giuliana Violeta Vásquez Varas¹ (D)
Juliane Callegaro Borsa¹ (D)

Abstract: Co-parenting is the reciprocal effort between two caregivers to raise a child and is important in the mental health of families. This study aims to describe the adaptation procedures and initial evidence of validity of the Co-parenting Questionnaire (CQ) for Brazil. The adaptation was carried out according to the stages: translation; synthesis of translated versions; evaluation by experts and target audience; and reverse translation. To assess its factorial structure, confirmatory factor analyzes were performed in multifactorial and bi-factorial models in a sample of 590 mothers/fathers aged 21 to 60 years (M = 36.24; SD = 5.88) residing in 21 states of Brazil. The CQ presented adequate adjustments for a correlated multifactorial solution and for the bifactor model. Complementary indices indicate that its multifactorial structure is the most adequate. Considering that 90% of the participants are women, the results show the CQ is a valid instrument for measuring co-parenting in Brazilian women.

Keywords: childrearing practices, psychological assessment, statistical validity, psychometrics

Co-parenting Questionnaire (CQ): Adaptação e Evidências de Validade para o Brasil

Resumo: A coparentalidade é o esforço conjunto entre dois cuidadores para criar uma criança e é importante na saúde mental das famílias. Este estudo teve como objetivo descrever os procedimentos de adaptação e evidências de validade do Coparenting Questionnaire (CQ) para o Brasil. A adaptação foi realizada segundo as etapas: tradução; síntese das versões traduzidas; avaliação por juízes experts e público-alvo; tradução reversa. Para avaliar sua estrutura fatorial, análises fatoriais confirmatórias foram realizadas em modelos multifatoriais e bifatoriais em uma amostra de 590 mães/pais de 21 a 60 anos (M = 36,24; DP = 5,88), residentes em 21 estados do Brasil. O CQ apresentou ajustes adequados para a uma solução multifatorial correlacionada e para o modelo bifactor. Índices complementares indicam que sua estrutura multifatorial é a mais adequada. Considerando que 90% dos participantes são mulheres os resultados mostram o CQ como um instrumento válido para a mensuração da coparentalidade nas mulheres brasileiras.

Palavras-chave: práticas de criação infantil, avaliação psicológica, validade estatística, psicometria

Cuestionario de Coparentalidad (CQ): Adaptación y Evidencia de Validez para Brasil

Resumen: La coparentalidad es el esfuerzo conjunto entre dos cuidadores para criar a un niño y es importante la salud mental de las familias. Este artículo busca describir los procedimientos de adaptación y evidencias de validez del Cuestionario de Coparentalidad (CQ) para Brasil. La adaptación se realizó según las etapas: traducción; síntesis de versiones traducidas; evaluación por expertos y público objetivo; y traducción inversa. Para evaluar su estructura factorial, se realizaron análisis factoriales confirmatorios en modelos multifactoriales y bifactoriales en una muestra de 590 madres/padres de 21 a 60 años (M = 36,24; DE = 5,88) residentes en 21 estados brasileros. El CQ presentó ajustes adecuados para una solución multifactorial correlacionada y para el modelo bifactorial. Índices complementarios indican que su estructura multifactorial es la más adecuada. Considerando que el 90% de los participantes son mujeres, los resultados muestran el CQ como válido para medir la coparentalidad en mujeres brasileñas.

Palabras clave: prácticas de creación de los hijos, evaluación psicológica, validación estadística, psicometría

¹Pontificia Universidade Católica do Rio de Janeiro, Rio de Janeiro-RJ, Brazil Article derived from the first author's doctoral thesis under the supervision of the third author, defended in 2022, in the Postgraduate Program in Psychology at Pontificia Universidade Católica do Rio de Janeiro. Financial support from the Suporte à Pós-Graduação IES Comunitárias Program (Protocol No.: 88887.484853/2020-00).

Correspondence address: Giuliana Violeta Vásquez Varas. Pontificia Universidade Católica do Rio de Janeiro. Rua Voluntários da Pátria, 46, Rio de Janeiro-RJ, Brazil. CEP 22.270-010. E-mail: giuli_vv700@hotmail.com

The way parents raise their children is a topic that has piqued the interest of many researchers for many decades. Extensive research has been done to seek to understand how and with what intensity the upbringing of these parents (Ruiz-Hernández et al., 2019), their conjugality (Becker & Crepaldi, 2019) and the family climate (Leusin et al., 2018) affect the development of these children. In the way that it is already commonly agreed in the literature that the relationship between parents and their children is closely

correlated with how these children will grow and develop. However, it was only in the 1980s that co-parenting began to gain space in psychological research, proving highly relevant to the understanding of how the relationship between the parental dyad affects the family (Lamela et al., 2010).

Co-parenting can be defined as the reciprocal and joint effort between two caregivers to raise and educate a child (Margolin et al., 2001). The construct began to be researched in the context of divorced families (Lamela et al., 2010), where two caregivers had to share the upbringing without being in a marital relationship or cohabiting, but, due to its importance, the study of co-parenting began to be expanded to other family structures. Although the topic is recent, studies already indicate that the quality of the co-parental relationship is more determinant in the development of children than the marital one, besides correlating with the children's (De Souza & Crepaldi, 2019; Machado & Mosmann, 2020; Parry et al., 2020) and parents' (Williams, 2018) mental health.

In Brazil, studies on co-parenting are still incipient. A systematic review carried out by Fidelis et al. (2022) about relationship between conjugality, parenting and co-parenting found out that, in a total of 24 articles published from 2015 and 2020, only one was Brazilian. Another systematic review conducted by Souza et al. (2020) about co-parenting, parental involvement, and parenting practices also enlightened the gap in the Brazilian literature of co-parenting studies, once no Brazilian studies were found about the theme.

This is a systematic review study by Mollà Cusí et al. (2020), which concatenated data from international instruments to assess co-parenting to date. In this study, the authors identified 26 instruments, divided among the following target audiences and/or contexts: non-separate families; conflict and divorce; parental collaboration; and different family structures. Among the instruments for non-separated families, the Co-Parenting Questionnaire (CQ) (Margolin et al., 2001) was identified as a very suitable instrument to assess couples, since it has good psychometric indices, both in its original study and in adaptations in other countries (Pedro & Ribeiro, 2015) and contexts (Barzel & Reid, 2011). The instrument is supported by a solid and referenced theory of co-parenting literature (Margolin et al., 2001), with a well-defined operational definition of co-parenting. In addition, the instrument is short (14 items), making it easy for participants to adhere to completing surveys. Finally, the answers given are based on the behavior of the respondents' partners, which decreases the response bias due to social desirability.

The theory of Margolin et al. (2001) that underpins the instrument is based on three factors: co-parental cooperation, triangulation, and co-parental conflict. Co-parental cooperation involves the support and respect between caregivers regarding their parental roles. This dimension is characterized by a mutual idea of sharing tasks related to the children, besides behaviors that reaffirm the partner's physical and emotional capacity to deal with the children. Triangulation, on the other hand, reflects the formation of

an alliance between a caregiver and the child, excluding the second caregiver. This type of practice induces the child to defend or take sides with one of the caregivers during conflicts, and the child often starts to act as a messenger between the couple. Finally, co-parental conflict is characterized by the amount of conflict regarding parental issues that exists between the two caregivers. This dimension encompasses the hostility and frequency of discussions regarding child rearing and family norms, in addition to the degree of depreciation of the other's parenting.

Considering the reflection of co-parental relationships in the development and mental health of families, it is understood the importance of new research on co-parenting within the Brazilian reality. In order to enable new advances and investigations in the area, adaptations of psychometric instruments suitable to evaluate the construct, such as the CQ, become relevant. Thus, this study aims to describe the adaptation procedures and initial evidence of validity of the Co-parenting Questionnaire (CQ) for Brazil's context.

This study aims to describe the adaptation procedures and evidence of validity of the Co-parenting Questionnaire (CQ) for Brazil.

Method

Participants

Participants in this study were 590 Brazilian mothers and fathers from 21 Brazilian states, married or in a stable union, who cohabited with their partners and children. Inclusion criteria for participation were: (1) being over 18 years old; (2) having at least one child between six and 12 years old. And exclusion criteria included: (1) fathers and mothers who were not engaged in a marital relationship with the other child's caregiver; (2) parents who did not live with their child between six and 12 years of age; and (3) and caregivers that did not cohabit with their partner.

The sample ranged in age from 21 to 60 years $(M=36.24;\ SD=5.88)$. The majority of participants were female $(n=532;\ 90.02\%)$, said they were married $(n=560;\ 94.91\%)$, and had only one child $(n=299;\ 50.68\%)$. Among the participants, 44.24% (n=261) earned more than eight minimum wages and 44.41% (n=262) had completed a graduate degree.

Instruments

The Co-parenting Questionnaire (CQ) is a heteroresponse instrument developed by Margolin et al. (2001) to assess the perception of fathers and mothers about their partner's co-parenting behaviors. It is composed of 14 items referring to the frequency of their partner's co-parenting behaviors, answered on a five-point Likert scale ranging from "Never" to "Always". The respondent is asked to think of a specific child when answering the questions. The instrument is composed of three factors to assess the positive and

negative dimensions of co-parenting: (1) co-parenting cooperation; (2) co-parenting conflict; and (3) triangulation.

The dimension of co-parental cooperation is composed of five items (from item 1 to item 5) that encompass behaviors of support and respect for the parental roles assumed by the parents (e.g., My partner asks my opinion about matters related to his/her role as a parent.). As for the triangulation dimension, it is composed of four items (from item 6 to item 9) that describe behaviors that reflect the formation of an alliance between one of the caregivers and the child, excluding the second caregiver "My partner tries to make our child choose a side when fights occur between us". The dimension of co-parental conflict is composed of five items (from item 10 to item 14) that reflect the amount of conflict and hostility regarding parental issues, as well as their frequency "My partner and I have different rules regarding feeding, house chores, bedtime and school our child's tasks".

The internal consistency indices of the original study (Margolin et al., 2001) were between $\alpha=0.69$ and $\alpha=0.84$ for the factors (conflict, cooperation and triangulation) and $\alpha=0.85$ and $\alpha=0.87$ for the total scale. In the Portuguese translation and adaptation study (Pedro & Ribeiro, 2015), the internal consistency indices assumed values between $\alpha=0.76$ and $\alpha=0.88$ for the questionnaire factors. The pediatric study of Barzel and Reid (2011) with fathers and mothers of children with diabetes also tested the CQ psychometric properties, obtaining internal consistency indices between $\alpha=0.78$ and $\alpha=0.89$.

Procedures

Data collection. The Survey Monkey tool was used and the questionnaire link was sent by email and published on social media between March and August 2021, with the Free and Informed Consent Term (FICT) located on the first page of the questionnaire.

Data analysis. Since the original version of the CQ already presents a theoretically based model of co-parenting and empirical evidence of validity both for the population of the country of origin (Margolin et al., 2001) and for other countries (Pedro & Ribeiro, 2015) and realities (Barzel & Reid, 2011), we tested the factor structure of the adapted version of the CQ for Brazil. A confirmatory factor analysis (*CFA*) was conducted, based on the multifactorial correlational model of co-parenting, proposed by Margolin et al. (2001). To perform the analysis, 14 items of the scale were considered and distributed among the three factors of co-parenting: five items of cooperation, five items of conflict and four items of triangulation.

For the CFA, the diagonally leading least squares (*DLWS*) estimation method was used, which is considered ideal for samples with categorical data (DiStefano et al., 2019). The absolute fit index was the chi-square over the degrees of freedom (χ^2/gI) and the parsimonious fit index was the square root-mean-square approximation index (*RMSEA*). The comparative fit indices used were the Tucker-Lewis (*TLI*) along with the comparative fit index (*CFI*). The choice for these

adjustments was based on their popular use and satisfactory performance in psychometric articles in the area (Shi & Maydeu-Olivares, 2020). According to the literature (Xia & Yang, 2019), a less than 0.06 *RMSEA* index indicates a good fit, between 0.06 and 0.08 a reasonable fit, between 0.08 and 0.10 an inadequate fit, and above 0.10 a lack of fit. To evaluate the *CFI* and *TLI* indexes as adequate, the values should be greater or close to 0.90 or 0.95 (Wang & Wang, 2019).

Correlations were performed among the factors of the co-parenting instrument to assess similarity with the results found by the original study by Margolin et al. (2001). The Mann-Whitney test was performed to evaluate the normality of the data and it was found that the sample was not normally distributed. Thus, as suggested in the literature, Spearman's non-parametric correlation test was used to evaluate the correlations between the three factors of the instrument. In addition, the Omega ω coefficient (McDonald, 1999) was used to evaluate the factors' internal consistency, considering values between 0.70 and 0.90 as adequate.

In order to complement the analysis and assess the model's dimensionality, as suggested by Rodriguez et al. (2016), a bi-factor analysis was performed. This analysis aims to assess whether the instrument is mostly one-dimensional, i.e., whether it is better to use an overall co-parenting score composed of the sum of all items, or whether the instrument is strictly multidimensional, as suggested in the original threefactor model of the CO. To test these models, studies suggest the use of specific fit indices for bi-factor analyses. In this study, general explained common variance (ECV), specific explained common variance (ECV-I), hierarchical omega (ωH and ωhs) and the percentage of uncontaminated correlations (PUC) were used. Since bi-factor models tend to have better fit indices ($\chi^2(df)$, RMSEA, CFI, and TLI) due to their modeling, these specific indices are extremely determinant for the interpretation of these models (Flores-Kanter et al., 2018). The ECV is a one-dimensionality index that looks at the proportion of item covariance that is explained by the overall dimension and indices above 0.85, supporting the possibility that the model can be explained by a one-dimensional. The PUC is also a the one-dimensionality index that informs the percentage of correlations uncontaminated by the multidimensionality of the model (Reise et al., 2013) and indexes above 0.70 also corroborate the one-dimensionality of the scale. The ECV-I, in turn, is an index that reflects the common variation explained by the overall factor of each item, and values greater than 0.80 are expected to indicate a significant influence. Finally, the hierarchical omega of the items (ωhs) was used to evaluate the variance of each of the items' specific factors, expecting values greater than 0.30 to support an influence. The overall hierarchical omega (ωH) evaluates the total variance explained by the overall factor, considering values above 0.70 to suggest the one-dimensionality (Reise et al., 2013).

The *AFC*, correlation, and McDonald's omega analyses were performed in the JASP program, version 0.14.1.0 for Windows, and the bi-factor model analysis was performed using the Mplus program, version 7.11 for Windows,

and its indices were calculated using the Dominguez-Lara and Rodríguez (2017) Bi-factor Indices Module.

Ethical Considerations

The project was approved by the Ethics Committee (No. 4.681.728, - CAAE No. 40608120.3.0000.5282) and all research followed the recommendations of Resolutions 466/2012 and 510/2016 of the Ministry of Health.

Results

Translation and adaptation process

After contacting the authors of the original instrument and obtaining their authorization, the process of translation and adaptation of the CQ for the Brazilian context began. This process was based on the guidelines of the International Test Commission (ITC, 2017) and the manual by Borsa et al. (2012) and was carried out in five stages: (1) translation; (2) synthesis of the translated versions; (3) evaluation by expert judges; (4) evaluation by the target audience; and (5) back translation. First, three independent translators translated the original instrument in English into Brazilian Portuguese. Then, these three versions were evaluated according to their semantic, idiomatic and conceptual equivalence with the original items in order to prepare a synthesis of the translations. This translated

synthesis was then evaluated by two independent judges specialized in parenting and psychological assessment. After this step, the version with minor modifications by the judges was presented to 11 mothers and fathers of children and adolescents in individual interviews, where they were invited to state their understanding of what each item was expressing. From the evaluation of the target audience, the final version of the CQ was submitted for reverse translation into the original language by a fourth independent translator. This version was presented to the scale's author and its semantic and grammatical meaning was considered equivalent to the original version.

Initial evidence of validity

The confirmatory factor analysis of the instrument, performed using the diagonally weighted least squares (*DWLS*) estimation method, showed an adequate fit to the data of fathers and mothers in the Brazilian sample, with the following indexes: $\chi^2(74) = 139.37$; p < .001; *CFI* = 0.986; *TLI* = 0.982; *RMSEA 90% CI* = 0.039 (0.029 - 0.049); *SRMR* = 0.059 (Table 1). According to the model fit indices, it can be stated that the Brazilian adaptation of the CQ presented a psychometric structure similar to the three-factor multifactor model originally proposed by the authors (Figure 1). All 14 scale items presented factor weights statistically different from zero ($\lambda \neq 0$; z > 1.96; p < .001) and factor loadings between 0.539 and 0.790, as shown in more detail in Table 2.

 Table 1

 Fit Indices of the CQ Multifactor and Bi-Factor Model

	Comparative Fit Index					
$\chi^2(df)$	χ^2/df	RMSEA (90% C.I.)	CFI	TLI		
139.36 (74)	1.88	0.039 (0.029-0.049)	0.986	0.982		
143.41 (60)	2.39	0.049 (0.038-0.059)	0.990	0.985		
	139.36 (74)	139.36 (74) 1.88	139.36 (74) 1.88 0.039 (0.029-0.049)	139.36 (74) 1.88 0.039 (0.029-0.049) 0.986		

Note. χ^2 = chi-square; df = degrees of freedom; CFI = comparative fit index, TLI = Tucker-Lewis Index; RMSEA = Root Mean Square error of approximation; C.I = confidence interval.

Figure 1
Correlated CQ and factor weights Multifactor Model

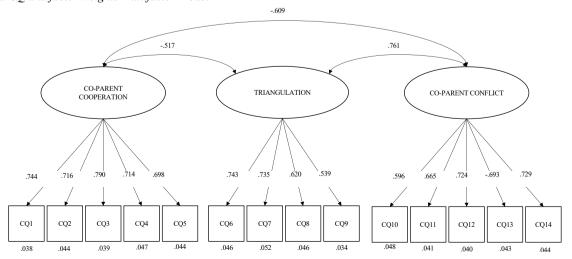


 Table 2

 Factorial Loadings of the CQ Multifactor Model

Г .	My partner			Error
Factors				
Co-parental Cooperation	CQ1	tells me many things about our son/daughter.		0.038
	CQ2	informs me about what happened to our son/daughter during the day.	0.716	0.044
	CQ3	says good things about me to our son/daughter.	0.790	0.039
	CQ4	asks my opinion on issues related to your role as a parent.	0.714	0.047
	CQ5	shares the responsibility of disciplining our son / daughter with me.	0.698	0.044
		Ω		0.85
Triangulation	CQ6	says cruel or offensive things about me in front of our son/daughter.	0.743	0.046
	CQ7	uses our son/daughter to get to me in some way.	0.735	0.052
	CQ8	tries to make our son/daughter choose a side when arguments occur between us.	0.620	0.046
	CQ9	Sends messages through our son/daughter instead of talking directly to me.		0.034
		Ω		0.769
Co-parental conflict	CQ10	and I have different rules regarding feeding, housework, bedtime, and schoolwork for our son/daughter.	0.596	0.048
	CQ11	and I have different expectations of how our son / daughter will act in certain situations.	0.655	0.041
	CQ12	argues with me about issues related to our son/daughter.	0.724	0.040
	CQ13	supports my decisions about our son/daughter's discipline.a	-0.693	0.043
	CQ14	weakens my role as a mother/father.	0.729	0.044
		Ω		0.783

Note. Estimation method: diagonally leading least squares (DLWS); CQ = Co-parenting Questionnaire; $\Omega = McDonald$'s Omega. ^a This item must be inverted to get the correct factor score.

In order to investigate the associations between the three factors of co-parenting, correlation analyses were performed between each pair of factors and the co-variances between the factors in the model were evaluated. All pairs of factors showed statistically significant correlations similar to the indices found by Margolin et al. (2001), between -0.418 and 0.528, corroborating their high covariance, as better described in Table 3.

 Table 3

 Correlations and Co-Variances Among CQ Factors

Factors		Co-parental Cooperation	Triangulation	Co-parental conflict
Co-parental Cooperation	Co-variance	1		
	Spearman's ρ	1		
Triangulation	Co-variance	-0.517*	1	
	Spearman's ρ	-0.418*	1	
Co-parental conflict	Co-variance	-0.609*	0.761*	1
	Spearman's ρ			1

Note. ρ = Spearman's rho; CQ = Co-parenting Questionnaire; *p < 0.001.

Since the CQ factors showed high correlation, a bi-factor analysis was performed to better ascertain the dimensionality of the model, as recommended by Reise et al. (2013). The fit indices of the bi-factor model, found by the weighted least squares mean and variance adjusted (*WLSMV*) estimation method, were: $\chi^2(60) = 143.41$; p < 0.001; CFI = 0.990; TLI = 0.985; RMSEA 90% CI = 0.049 (0.038 - 0.059), presented in Table 1.

Finally, the bi-factor fit indices were evaluated to assess the dimensionality of the CQ. The *ECV*, an index used to assess the proportion of the common variance of the overall factor in the model, was 0.618. The *ECV-I* indices, which

indicate whether variation in the responses of an item can be attributed to variation in the overall dimension, assume values between 0.209 and 0.99, with nine items below 0.80, suggesting that these items do not reflect the overall dimension. The *PUC* index, which represents the percentage of covariance that only reflects the general factor, was 0.714. The ωH index, used to indicate the proportion of variance to the general factor, was 0.155, and the ωhs indices, used to indicate the proportion of variance corresponding to a subscale after controlling for the variance attributed to the general factor, were: 0.486 for cooperation; 0.320 for triangulation; and 0.179 for conflict.

Discussion

Co-parenting is a new construct that began to be studied in the 1980s (Lamela et al., 2010) and has been shown to be a more determinant variable for the mental health of family members than the quality of the marital relationship (Feinberg et al., 2012). Although the construct is relatively new in psychology, theoretical perspectives have been developing rapidly and psychometric instruments to assess co-parenting are increasingly needed to advance research in the field.

One of the theoretical models of co-parenting that has become firmly established in the literature is the one proposed by Margolin et al. (2001), which assesses the operational dimension of co-parenting in three factors (cooperation, triangulation and conflict). The model was a fertile source for renowned contemporary authors in the field of co-parenting and continues to be widely used. In addition, the CO, an instrument developed based on the theory, showed satisfactory psychometric properties in the original research, as in the version adapted for Portugal (Pedro & Ribeiro, 2015) and in the version adapted for parents of children with diabetes (Barzel & Reid, 2011). Thus, this study seeks to contribute to the adaptation and validation of the CQ for the Brazilian population, increasing the small collection of psychometric instruments to assess co-parenting in the country and facilitating the implementation of research on this construct in the country.

In order to begin the process of adaptation and translation by means of the indicated by Borsa et al. (2012) for crosscultural adaptations of psychometric instruments, with prior authorization from the authors of the instrument. After the translators returned the versions of the instruments and feedback was offered by the expert judges and the target audience, items were identified that needed to be reworded, both to better approximate cultural terms (e.g. "My spouses shares the burden of discipline."; "My partner shares the responsibility of disciplining our child with me.", and for better understanding of the participants (e.g. original item: "My spouse uses this child to get back at me." - adapted item: "My partner/my spouse uses our child(ren) to target me in some way."). In addition, a modification was made to include other relationship types and make the instrument more inclusive and audience-friendly (e.g. original items: "My spouse..." - adapted items: "My partner...").

To test the factor structure of the CQ model for the Brazilian sample, AFCs were performed on a multifactor model equal to the one empirically and theoretically supported by the original authors (Margolin et al., 2001) and then on a bi-factor model. The choice of also performing a bi-factor model was supported by the high common variance between the three factors of the multifactor model, which could suggest the existence of a one-dimensional dimension of the instrument (Reise et al., 2013). In addition, the influence of an overall co-parenting factor and its sub-factors (cooperation, triangulation, and conflict) were assessed simultaneously. The correlations performed between the

three factors supported the hypothesis that co-parenting might be measured by both positive (cooperation) and negative (triangulation and conflict) items, suggesting the possibility of an overall co-parenting score.

Both the multifactor model and the bi-factor model showed very satisfactory fit indices. Although the goodness-of-fit of the bi-factor model was only slightly higher than that of the CO multifactor model, it is understood in the literature that these models have a tendency to obtain higher fit rates when compared to hierarchical models. Thus, it becomes necessary to evaluate other adjustment indexes for the comparison of the two models. When evaluating the one-dimensional dimension of the instrument, although the ECV and PUC indexes are close to the ideal cut-off point, the extremely low ωH (smaller than the ωhs of the subscales) disqualifies the instrument as essentially one-dimensional (Reise et al., 2013). However, the ECV-I values show that 11 of the 14 items can be explained by the overall factor, although only three items are above the value to be considered strictly one-dimensional.

From the findings found in the bi-factor model, it is understood that the CQ instrument has some one-dimensional character. However, because its adjustment indexes do not reach sufficient values to evaluate it as strictly one-dimensional, it is suggested the cautious use of a total score of co-parenting in the CQ. Finding divergences in empirical data using the multidimensional and one-dimensional scores of the instrument, it is recommended to choose the specific scores of the cooperation, triangulation, and conflict factors, as originally proposed by the theory of Margolin et al. (2001).

It is concluded, therefore, that the CQ instrument adapted for Brazil has satisfactory psychometric qualities to be applied in the country. From the bi-factor analysis, it can be concluded that the model structure that best fits the data is the multifactor three-factor model (Figure 1), as originally exposed by Margolin et al. (2001). Although the results of the bi-factor analysis do not support the hypothesis that the instrument is strictly one-dimensional, some indices found can be taken as evidence for the use also of a cautious overall scoring of the instrument.

In conclusion, the aim of this study was to describe the procedures carried out for the adaptation to the Brazilian context, as well as to present the initial evidence of validity of the CQ for Brazil. The results of the analyses contributed to those found in the original study (Margolin et al., 2001), providing data that contribute to the authors' hypothesis that there are three factors that make up co-parenting: co-parental cooperation, triangulation and co-parental conflict. Both the correlated multifactor model and the bi-factor model showed satisfactory fits; however, the complementary fit indices encourage the use of an overall CQ score in a cautious manner, since the multidimensionality of the model is proven. The CQ is a short instrument, easy to apply collectively and individually, and can be used in surveys remotely (online). One of its main advantages is that it is based on the partner's behavior, which reduces the social desirability bias of the response. Its adaptation for Brazil fills a gap in studies about co-parenting, providing Brazilian researchers with an ideal instrument for couples. It is also important to mention that even though the concept of co-parenting includes equally women and men (mothers and fathers), our sample was formed mainly by mothers, preventing proving the invariance of the measure between the genders and making it difficult to conclude that there is sufficient evidence of instrument validity for men.

As for the limitations, this study's greatest limitation lies in the fact that 90% of the sample is made up of women, making it impossible to prove the invariance of the measurement between the participants' genders. It is important to emphasize that this study represents only the first stages of the CQ validation process, and new studies are needed to search for other validity evidence for the Brazilian context. Thus, it is recommended that future research be directed to seek new evidence of validity for Brazil, considering samples made up of a more balanced number between men and women and the country's contextual clippings.

References

- Barzel, M., & Reid, G. J. (2011). A preliminary examination of the psychometric properties of the Coparenting Questionnaire and the Diabetes-Specific Coparenting Questionnaire in families of children with type I diabetes. *Journal of Pediatric Psychology*, 36(5), 606-617. https://doi.org/10.1093/jpepsy/jsq103
- Becker, A. P. S., & Crepaldi, M. A. (2019). O apego desenvolvido na infância e o relacionamento conjugal e parental: Uma revisão da literature [The attachment developed in childhood and the conjugal and parental relationship: A review of the literature]. Estudos e Pesquisas em Psicologia, 19(1), 238-260. https://doi.org/10.12957/epp.2019.43016
- Borsa, J. C., Damásio, B. F., & Bandeira, D. R. (2012). Cross-cultural adaptation and validation of psychological instruments: Some considerations. *Paidéia (Ribeirão Preto)*, 22(53), 423-432. https://doi.org/10.1590/1982-43272253201314
- De Souza, J., & Crepaldi, M. A. (2019). Problemas emocionais e comportamentais nas crianças: Associação entre funcionamento familiar, coparentalidade e relação conjugal. [Emotional and behavioral problems of children: Association between family functioning, coparenting and marital relationship]. *Acta Colombiana de Psicología*, 22(1), 69-81. http://www.dx.doi.org/10.14718/ACP.2019.22.1.5
- DiStefano, C., McDaniel, H. L., Zhang, L., Shi, D., & Jiang, Z. (2019). Fitting large factor analysis models with ordinal data. *Educational and Psychological Measurement*, 79(3), 417-436. https://doi.org/10.1177/0013164418818242

- Dominguez-Lara, S., & Rodríguez, A. (2017). Statistical indices from bifactor models. *Interacciones: Revista de Avances en Psicología, 3*(2), 59-65. https://doi.org/10.24016/2017.v3n2.51
- Feinberg, M. E., Brown, L. D., & Kan, M. L. (2012). A multidomain self-report measure of coparenting. *Parenting*, *12*(1), 1-21. https://doi.org/10.1080/15295192.2012.638870
- Fidelis, D., Heinen, M., Mosmann, C. P., Falcke, D., & Schaefer, J. R. (2022). Relações entre conjugalidade, parentalidade e coparentalidade em famílias com crianças [Relationships between conjugality, parenting and coparenting in families with children: A systematic review]. *Cadernos de Psicologia*, 2(2), 16. https://doi.org/10.9788/CP2022.2-03
- Flores-Kanter, P. E., Dominguez-Lara, S., Trógolo, M. A., & Medrano, L. A. (2018). Best practices in the use of bifactor models: Conceptual grounds, fit indices and complementary indicators. *Revista Evaluar*, *18*(3), 44-48. https://doi.org/10.35670/1667-4545.v18.n3.22221
- International Test Commission. (2017). *International Test Commission guidelines for translating and adapting tests* (2nd ed.). https://www.intestcom.org/files/guideline_test adaptation 2ed.pdf
- Lamela, D., Nunes-Costa, R., & Figueiredo, B. (2010). Modelos teóricos das relações coparentais: Revisão crítica [Theoretical models of coparenting relations: Critical review]. *Psicologia em Estudo, 15*(1), 205-216. https://doi.org/10.1590/S1413-73722010000100022
- Leusin, J. F., Petrucci, G. W., & Borsa, J. C. (2018). Clima familiar e os problemas emocionais e comportamentais na infância [Family climate and the emotional and behavioral problems in childhood]. *Revista da SPAGESP*, 19(1), 49-61. http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1677-29702018000100005
- Machado, M. R., & Mosmann, C. P. (2020). Coparental conflict and triangulation, emotion regulation, and externalizing problems in adolescents: Direct and indirect relationships. *Paidéia (Ribeirão Preto)*, 30, e3034. http://dx.doi.org/10.1590/1982-4327e3004
- Margolin, G., Gordis, E. B., & John, R. S. (2001). Coparenting: A link between marital conflict and parenting in two-parent families. *Journal of Family Psychology, 15*(1), 3-21. https://doi.org/10.1037//0893-3200.15.1.3
- McDonald, R. P. (1999). Test theory: A unified treatment. Lawrence Erlbaum.
- Mollà Cusí, L., Günther-Bel, C., Vilaregut Puigdesens, A. V., Campreciós Orriols, M., & Matalí Costa, J. L. (2020). Instruments for the assessment of coparenting: A systematic review. *Journal of Child and Family Studies*, 29(9), 2487-2506. https://doi.org/10.1007/s10826-020-01769-3

- Parry, L. Q., Davies, P. T., Sturge-Apple, M. L., & Coe, J. L. (2020). Coparental discord and children's behavior problems: Children's negative family representations as an explanatory mechanism. *Journal of Family Psychology*, 34(5), 523-533. https://doi.org/10.1037/fam0000638
- Pedro, M. F., & Ribeiro, M. T. (2015). Adaptação portuguesa do questionário de coparentalidade: Análise fatorial confirmatória e estudos de validade e fiabilidade. [Portuguese adaptation of the coparenting questionnaire: Confirmatory factor analysis, validity and reliability]. *Psicologia: Reflexão e Crítica*, 28(1), 116-125. https://doi.org/10.1590/1678-7153.201528113
- Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment*, 95(2), 129-140. https://doi.org/10.1080/002 23891.2012.725437
- Rodriguez, A., Reise, S. P., & Haviland, M. G. (2016). Applying bifactor statistical indices in the evaluation of psychological measures. *Journal of Personality Assessment*, *98*(3), 223-237. https://doi.org/10.1080/002 23891.2015.1089249
- Ruiz-Hernández, J. A., Moral-Zafra, E., Llor-Esteban, B., & Jiménez-Barbero, J. A. (2019). Influence of parental styles and other psychosocial variables on the development of externalizing behaviors in adolescents: A systematic review. *The European Journal of Psychology Applied to Legal Context, 11*(1), 9-21. https://doi.org/10.5093/ejpalc2018a11
- Shi, D., & Maydeu-Olivares, A. (2020). The effect of estimation methods on SEM Fit Indices. *Educational and Psychological Measurement*, 80(3), 421-445. https://doi.org/10.1177/0013164419885164
- Souza, F. M., Fiorini, M. C., & Crepaldi, M. A. (2020). Coparentalidade e envolvimento parental em famílias binucleares: Revisão sistemática [Coparentality and parental involvement in binuclear families: Systematic literature review]. *Actualidades en Psicología*, 34(129), 119-140. http://dx.doi.org/10.15517/ap.v34i129.35334
- Xia, Y., & Yang, Y. (2019). RMSEA, CFI, and TLI in structural equation modeling with ordered categorical data: The story they tell depends on the estimation methods. *Behavior Research Methods*, *51*(1), 409-428. https://doi.org/10.3758/s13428-018-1055-2
- Wang, J., & Wang, X. (2019). Structural equation modeling: Applications using Mplus. Wiley.
- Williams, D. T. (2018). Parental depression and cooperative coparenting: A longitudinal and dyadic approach. *Family Relations*, 67(2), 253-269. https://doi.org/10.1111/fare.12308

Amanda Porto Padilha is a Master's candidate of the Postgraduate Program in Psychology at Pontificia Universidade Católica do Rio de Janeiro, Rio de Janeiro-RJ, Brazil.

Giuliana Violeta Vásquez Varas is a Ph.D. candidate of the Faculdade de Psicologia at Pontificia Universidade Católica do Rio de Janeiro, Rio de Janeiro-RJ, Brazil.

Juliane Callegaro Borsa is a Professor of the Faculdade de Psicologia at Pontificia Universidade Católica do Rio de Janeiro, Rio de Janeiro-RJ, Brazil.

Authors' Contribution:

All authors made substantial contributions to the conception and design of this study, to data analysis and interpretation, and to the manuscript revision and approval of the final version. All the authors assume public responsibility for content of the manuscript.

Associate editor:

Vanessa Barbosa Romera Leme

Received: Dec. 19, 2022

1st Revision: Apr. 11, 2023

Approved: Apr. 24, 2023

How to cite this article:

Padilha, A. P., Varas, G. V. V., & Borsa, J. C. (2023). Coparenting Questionnaire (CQ): Adaptation and validity evidences for Brazilian context. *Paidéia (Ribeirão Preto)*, 33, e3317. doi:https://doi.org/10.1590/1982-4327e3317