

Caregiving Helplessness Questionnaire (CHQ) applied to Portuguese mothers of preschool-aged children: A psychometric study

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The child's attachment system is complemented by a separate and reciprocal caregiving system in the parent, which guides parents' protective responses to the child. Disruptions in the caregiving system may lead to disorganized caregiving; however, the study and knowledge of disorganized caregiving is still very incomplete and has been limited to labor-intensive and costly interviews. This study aimed to examine the psychometric qualities of the Caregiving Helplessness Questionnaire (CHQ), a screening tool for disorganized caregiving, on a sample of 200 Portuguese mothers of preschool-aged children. Confirmatory factor analysis did not confirm the structure of the original CHQ version. A five-factor solution was found as a better solution, producing five scales that correspond conceptually to major dimensions of relationship disorganization at preschool-age: Mother Helpless, Mother Frightened, Child Frightened, Child Cheers Mothers, and Child Caregiving. Reliability analysis had satisfactory results and convergent and discriminant validity were confirmed. Concurrent validity was also established by finding significant associations between the CHQ scales with variables of maternal and child domains that have been conceptually and empirically associated with disorganization. In conclusion, results supported the validity of the CHQ for Portuguese mothers of preschoolers, as a promising screening tool for disorganized caregiving.

Key words: Caregiving Helplessness Questionnaire (CHQ), Validation, Caregiving system, Disorganized caregiving, Caregiving helplessness.

The child's attachment behavioral system is complemented by a separate and reciprocal caregiving system in the parent, which organizes parents' caregiving behavior (Bowlby, 1982; George & Solomon, 2008; Solomon & George, 1996). However, historically, the emphasis in theory and research has been focused on the child and his/her attachment system, and the knowledge about the caregiving system is still incomplete (George & Solomon, 2008; Solomon & George, 1996). If we want to fully understand how child, parent, family, and cultural contexts work together to influence the quality of parent-child relationship, a shift from the focus on the child's attachment system to the study of the caregiving system is needed (Solomon & George, 1996). Accordingly, the aim of the present study was to examine the psychometric qualities of a screening tool for disorganized maternal caregiving – the Caregiving Helplessness Questionnaire (CHQ; George & Solomon, 2011) – on a sample of Portuguese mothers of preschool-aged children.

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The caregiving system is a biologically based motivation system that guides parents' protective responses to the child (Bowlby, 1982). It is guided by internal working models of caregiving, which are representational processes that evaluate and organize parental behavior, expectations and affects (George & Solomon, 2011). With the ultimate goal of protecting the child, this system requires the mother to shift from being the one who seeks protection and care from an attachment figure, towards becoming the one who provides protection and care for a child (George & Solomon, 2008). However, this shift appears to be disrupted in the case of mothers of children with disorganized attachment (Lyons-Ruth & Spielman, 2004), reflecting a disorganized caregiving (George & Solomon, 1996, 2011; Lyons-Ruth & Block, 1996). Following George and Solomon (2011) conceptualization on disorganized caregiving, disruption of the system may develop on the context of unresolved frightening painful attachment-related experiences of mothers. These experiences can include, for example, miscarriage and death of a baby or experiences with the mother's own childhood attachment figures such as violence, loss, abuse or alcoholism (Lyons-Ruth & Block, 1996; Solomon & George, 2011). According to the authors, these experiences are barred from consciousness – defensive processes termed segregated systems by Bowlby (1980) – and disrupt the organization of caregiving representations and caregiving behavior. The mother feels helpless and/or frightened in relation to parenting the child, and may lash out, retreat or seek comfort and protection from the child, thus abdicating of her caregiving role and failing to provide adequate protection for her child. Caregiving becomes inverted and/or incoherent and the mother displays contradictory and inconsistent caregiving behaviors (George & Solomon, 2008; Solomon & George, 2011). George and Solomon (2008) postulated that caregiving failures might take two representational forms: dysregulation or constriction, which have been shown to be associated with qualitatively different perceptions of the child and his/her attachment needs. A dysregulated mother tends to portray her child as out of control, thus abdicating caregiving by throwing her hands up in despair or evaluating herself as not being able to be involved. By contrast, a constricted mother tends to portray her child as independent and capable of taking care of his/her own and others. Ultimately, the constricted mother views herself as not really needed to provide protection and care, thus abdicates caregiving (George & Solomon, 2008, 2011). Children of disorganized mothers are at high risk for adjustment problems, as demonstrated by research reporting a link between maternal disorganized caregiving and childhood social, emotional and behavioral problems (George & Solomon, 2011; Huth-Bocks, Guyon-Harris, Calvert, Scott, & Ahlfs-Dunn, 2016), and even adolescence and young adulthood psychopathology (Dutra, Bureau, Holmes, Lyubchik, & Lyons-Ruth, 2009; Lyons-Ruth, Bureau, Holmes, Easterbrooks, & Brooks, 2013).

Until 2011, the only instrument available to assess disorganized maternal caregiving was the Caregiving Interview (CI; George & Solomon, 1989). However, completing the interview protocol and the rating system is labor-intensive and costly. Thus, based on common responses made by mothers during the CI, George and Solomon (2011) developed the Caregiving Helplessness Questionnaire (CHQ), a self-report questionnaire designed to measure disorganized caregiving. Comprising 26 items (see Appendix 1), the CHQ aims to tap three core aspects of disorganized caregiving: experiences of helplessness, fear and role-reversal in the parent-child relationship. In the CHQ development and validation study, the questionnaire was administered to 208 low-risk North American mothers of children aged 3-11 years. Exploratory factor analysis (EFA) using principal components and varimax rotation yielded a five-factor solution. The first factor included items pertaining to caregiving helplessness and was considered a scale labeled Mother Helpless. The second and the third factors, labeled Mother Frightened and Child Frightened, represented fear in the relationship and therefore were combined to create a second scale named Mother-Child Frightened. The fourth and the fifth factors, labeled Child Cheers Mother and Child Caregiving, represented role-reversal in the relationship and therefore were combined to create a third scale

named Child Caregiving. The study also provided evidence of divergent validity between the CHQ scales and measures of maternal stress related to the affiliative, sexual and health domains. Significant positive correlations between the CI ratings and the CHQ scales provided evidence of convergent validity for Mother Helpless and Mother-Child Frightened scales, but not for the Child Caregiving scale. The authors also explored associations between the CHQ scales with variables that have been empirically associated with attachment disorganization. Both Mother Helpless and Mother-Child Frightened scales were significantly, positively correlated with maternal depression, parenting stress, number of attachment related life events and child externalizing problems. The Child Caregiving scale was only significantly, positively associated with maternal depression. To our knowledge, until date, there are no other versions of the instrument. Huth-Bocks et al. (2016) sought to replicate George and Solomon (2011) validity findings to a sample of mothers of infants, by examining associations between the CHQ and maternal depression, parenting stress and infant social-emotional problems. Both Mother Helpless and Mother-Child Frightened scales were positively associated with maternal depression, parenting stress and infant social-emotional problems. The Child Caregiving scale was positively associated with infant social-emotional problems.

The aim of the current study was to validate the CHQ for use with Portuguese mothers of preschool-aged children. More specifically, we examined the factor structure of the CHQ and estimated the reliability of the instrument. We also investigated discriminant and convergent validity. Finally, we explored concurrent validity by assessing associations between the CHQ scales and maternal and child variables that have been conceptually and empirically associated with attachment disorganization. Maternal variables included maternal psychopathology (e.g., Lyons-Ruth & Jacobvitz, 2008), maternal parenting stress (e.g., Moss, Bureau, St-Laurent, & Tarabulsky, 2011), and the quality of maternal interactive behaviors in terms of sensitivity and cooperation with the child (e.g., Lyons-Ruth et al., 2013). Child variables included behavioral and emotional problems (e.g., Carlson, 1998). Whereas the CHQ development and validity study (George & Solomon, 2011) also investigated associations with maternal depression, parenting stress, and child's behavioral and emotional problems, the current study makes an additional contribution, considering an observational measure of the quality of maternal interactive behaviors.

Method

Participants

The sample of the current study consisted of 200 Portuguese mothers of preschool-aged children, recruited from public and private preschools centers in the districts of Braga, Porto, and Aveiro. Inclusion criteria for participation in the study included Portuguese nationality, being 18 years old or older and having a child between the ages of 3 and 6 years old. Exclusion criteria included child not living with the mother, and the presence of child's genetic syndromes or other serious diseases (e.g., hearing or vision loss). Mothers ranged in age from 21 to 48 years old ($M=34.05$, $SD=5.18$). One hundred fifty-seven were married or living in a civil union (78.5%), 25 were single (12.5%), 17 were divorced (8.5%) and 1 was widowed (0.5%). Concerning professional status, 143 were employed (71.5%), 54 were unemployed (27%) and 3 were university students (1.5%). Sixty-nine mothers had a university degree (35%), 55 had graduated from high school (27%), 49 completed middle school (24.5%), 19 completed 6th grade (9.5%), 6 completed primary school (3%) and 2 had no education (1%). The majority had more than one child ($n=113$, 57%). Children's mean age was 4.26 years ($SD=0.87$, $range=3$ to 6 years old), and 50.5% were girls ($n=101$).

Procedure

Preschool centers were first contacted and the study was presented to the director or responsible person of each institution. After obtained the authorization, mothers who met the inclusion criteria were contacted either by telephone, email or personally by the investigator. Mothers willing to participate completed consent forms. All measures were administered in a private and quiet location at their child's preschool or home. The study was approved by the Ethics Subcommittee for Human and Social Sciences (SECSH) of the University of Minho, and by the Portuguese National Commission for Data Protection.

Measures

Disorganized caregiving. Mothers completed the Caregiving Helplessness Questionnaire (CHQ; George & Solomon, 2011). It consists of 26 items (see Appendix 1), including seven filler items, rated on a 5-point Likert scale ranging from 1 (*not characteristic at all*) to 5 (*very characteristic*). When completing the CHQ, mothers are instructed to think about the target child and evaluate the extent to which each item is characteristic of their relationship with that specific child. On the CHQ development and validation study, three scales were obtained: Mother Helpless (7 items; $\alpha=.85$), assessing maternal perceptions of helplessness, Mother-Child Frightened (6 items; $\alpha=.66$), assessing maternal perceptions of fear in the relationship, and Child Caregiving (6 items; $\alpha=.64$), assessing maternal perceptions of role-reversal. The validity of the CHQ has been demonstrated in other studies with American samples of mothers of infants and adolescents (Huth-Bocks et al., 2016; Vulliez-Coady, Obsuth, Torreiro-Casal, Ellertsdottir, & Lyons-Ruth, 2013).

Maternal psychopathology. Mothers completed the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983; Portuguese version by Canavarro, 1999). It contains 53 self-report items, rated on a 5-point Likert scale ranging from 0 to 4, with higher scores reflecting higher frequency of psychopathological symptoms. Three global indices of distress can be obtained: the Global Severity Scale (GSI), the Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST). The current study relied on the GSI, which is an indicator of the current overall level of distress. Test-retest reliability of GSI was found to be strong (Derogatis & Melisaratos, 1983).

Maternal parenting stress. Mothers completed the Daily Hassles Questionnaire (Kanner, Coyne, Schaefer, & Lazarus, 1981; Portuguese version by Negrão, Pereira, & Soares, 2009). It includes 45 items concerning stressors related to the individual's daily life, rated on a 5-point Likert scale ranging from 0 (*no hassle*) to 4 (*big hassle*). Four subscales can be obtained: Individual Stress, Parental Stress, Child Stress and Total Stress. For the current study only the Parental Stress subscale was used, which has been demonstrated to have good internal consistency (Pereira, Negrão, Soares, & Mesman, 2015), similar to the present study ($\alpha=.82$). Example items of this scale are 'having to keep an eye on what my children are doing' (Item 11) and 'plans changing because of my child's needs' (Item 13).

Quality of maternal interactive behaviors. The Ainsworth, Blehar, Waters, and Wall (1978) Sensitivity/Insensitivity and Cooperation/Intrusiveness scales, adapted to the preschool years by our team, were used by trained raters to assess the quality of the mothers' behavior with the child during a 15 minutes videotaped task divided in three episodes: (1) child plays with an age-challenging puzzle with the mother's guidance (5 minutes); (2) child plays with an uninteresting toy (a small block) but remains near more interesting ones that s/he is instructed not to play with (e.g., a ball, cars, a doll), while the mother completes a sham questionnaire and monitors the child (5 minutes); (3) free play with previous out-of-reach toys (2.5 minutes), followed by a clean-up task for the child (2.5 minutes). Both scales were rated on a 9-point scale. Interrater reliability was more than adequate (for sensitivity, ICC $r_{ic}=.92$; for cooperation, ICC $r_{ic}=.88$) and disagreements were discussed to obtain a consensus.

As scores obtained on both scales were significantly correlated ($r=.73, p<.001$), a composite of the mean of the standardized scores was computed to obtain a global measure of sensitive responsiveness.

Child's behavioral and emotional problems. Mothers completed the Child Behavior Checklist for Ages 1.5-5 (CBCL 1.5-5; Achenbach, & Rescorla, 2000; Portuguese version by Achenbach et al., 2014). It contains 100 items rated on a 3-point Likert scale ranging from 0 (*not true*) to 2 (*very/frequently true*). Besides the estimate of the total problems, the CBCL produces seven syndrome scales and two broadband scales, internalizing and externalizing behaviors. Both scales have been demonstrated to have good internal consistency (Achenbach & Rescorla, 2000), similar to the present study ($\alpha=.88$ for internalizing, and $\alpha=.89$ for externalizing).

Results

Excluding the 7 filler items (16, 19, 21, 23, 24, 25, 26), the 19 CHQ items were evaluated using confirmatory factorial analysis (CFA). The statistical analyses were conducted using IBM SPSS Statistics 24.0 and RStudio 3.4.1. In RStudio, all analyses were performed using the *R* packages *lavaan*, *semTools*, and *semPlot*. Since all variables were ordered, the WLSMV estimator was automatically selected by *lavaan*, using diagonally weighted least squares (DWLS) to estimate the model parameters, and the full weight matrix to compute robust standard errors, and a mean- and variance-adjusted test statistic.

In the factor analysis of the CHQ development and validity study, George and Solomon (2011) identified the following five factors: Factor 1 – “Mother Helpless” – including items 1, 5, 7, 10, 18, 20, 22; factor 2 – “Mother Frightened” – including items 3, 4, 14; factor 3 – “Child Frightened” – including items 12, 13, 15; factor 4 – “Child Cheers Mother” – including items 8, 11, 17; and factor 5 – “Child Caregiving” – including items 2, 6, 9. After the identification of these factors, the authors produced two new scales by combining all items from factors 2 and 3, and from factors 4 and 5, which were named “Mother-Child Frightened” and “Child Caregiving”, respectively. In what follows, the validation of this instrument to the Portuguese population was investigated considering first the 5-factor model and then the 3-factor model.

The 5-factor measurement model

A CFA was applied to the 5-factor measurement model. SEM analysis revealed factor loadings with values between .46 and .80, including one value smaller than .50 (however very close). The fit measures showed good fitting to the data, with a Chi-square (χ^2) of 323.79 ($df=147$), a Comparative Fit Index (CFI) of .96, a Tucker-Lewis index (TLI) of .95, a Non-normed Fit index (NNFI) of .95, and a Root Mean Square Error of Approximation (RMSEA) of .06. As shown in Table 1, each factor exhibited acceptable Cronbach's alpha (from .67 to .83), good composite reliability (CR) and acceptable average variance extracted (AVE) values (Fornell & Larcker, 1981). Therefore, all five factors presented acceptable internal reliability, good composite reliability, and reasonable convergent validity. Recall that the current recommended criteria for convergent validity are: all factor loadings $>.50$, all AVE $>.50$, and all CR $>.70$ (Hair, Black, Babin, & Anderson, 2010). All values that lied outside these recommended cutoffs were, indeed, very close to the corresponding thresholds, and thus the results generally showed acceptable convergent validity. The Heterotrait-monotrait (HTMT) matrix (Table 2) indicated that there were no discriminant validity problems according to the HTMT ratio of correlations criterion (Henseler, Ringle, & Sarstedt, 2015), considering a reasonable cutoff of .85.

Table 1

Cronbach's alpha, composite reliability and average variance explained for the tested models

		Cronbach's α	CR	AVE
5-factor measurement model	Factor 1	.83	.84	.44
	Factor 2	.67	.71	.46
	Factor 3	.69	.69	.44
	Factor 4	.70	.72	.47
	Factor 5	.67	.67	.40
3-factor measurement model	Factor 1	.83	.84	.44
	Factor 2	.75	.75	.35
	Factor 3	.69	.72	.31
Final model	Factor 1	.83	.84	.47
	Factor 2	.77	.80	.51
	Factor 3	.65	.68	.53
	Factor 4	.70	.72	.47
	Factor 5	.67	.68	.51

Note. CR – Composite reliability (good>0.7); AVE – average variance extracted (good>0.5).

Table 2

The HTMT ratio of correlations for the 5-factor measurement model

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1					
Factor 2	.45				
Factor 3	.33	.29			
Factor 4	.31	.37	.69		
Factor 5	.21	.35	.80	.82	

The 3-factor measurement model

A CFA was applied to the 3-factor measurement model. SEM analysis revealed factor loadings with values between .39 and .77, including five values below .50. The fit measures didn't show good fitting to the data, with Chi-square=368.22, $df=149$, CFI=.90, TLI=.88, NNFI=.88, and RMSEA=.09. As shown on Table 1, although internal reliability and composite reliability have slightly improved, the constructs' AVE had worsened, yielding frailties in the convergent validity. Also, discriminant validity was not achieved; the HTMT matrix (Table 3) indicated discriminant validity problems in one of the values (F2 and F3), as it violated a reasonable cutoff of .85.

Table 3

The HTMT ratio of correlations for the 3-factor measurement model

	Factor 1	Factor 2	Factor 3
Factor 1			
Factor 2	.44		
Factor 3	.34	.89	

The final measurement model

The CHQ showed acceptable fitting performance when comprising the five different scales initially proposed by George and Solomon (2011). Nevertheless, since this model yielded some measures in the threshold limit, especially regarding validity concerns, a better fitting model to this data was investigated. This search was based in the 5-measurement model, as it showed to be

a reasonable model. All further attempts just allowed small and theoretical meaningful changes. After some possible considerations, a final model was obtained by introducing the following two changes: first, items 6 and 22 were eliminated from the corresponding constructs due to a significant improvement on the convergent validity (AVE increased from 0.44 and 0.40, to 0.47 and 0.51, respectively – see Table 1); second, item 13 moved from the Child Frightened factor to the Mother Frightened factor. Theoretically, this shift doesn't seem problematic, since both of the factors pertain to fear in the parent-child relationship. Figure 1 exhibits all factor loadings of the final model, showing that no factor loading was below .50. The fit measures showed good fitting to the data, with Chi-square=169.55, $df=109$, CFI=.97, TLI=.96, NNFI=.96, and RMSEA=.05. As summarized in Table 1, the final model exhibited acceptable reliability and good convergent validity. Also, discriminant validity was clearly established (see Table 4).

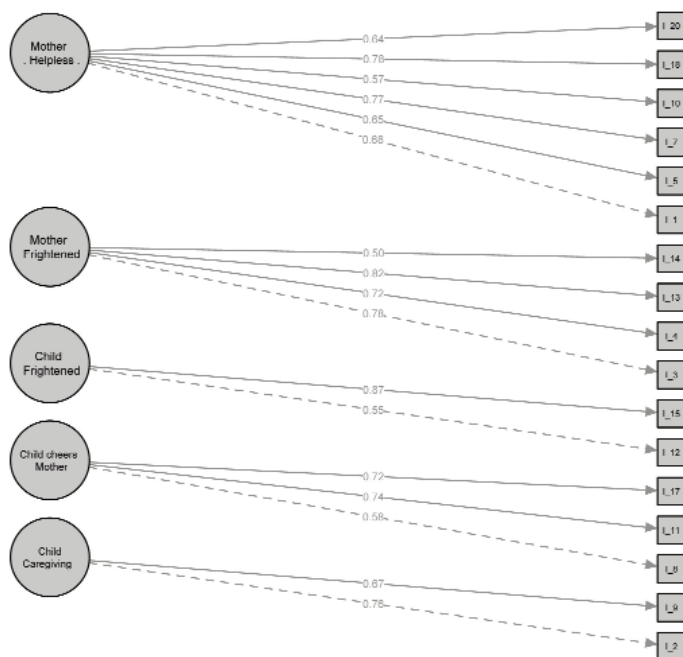


Figure 1. The final 5-factor model. The (standardized) factor loadings were obtained using SEM analysis. Although not shown in the figure, every endogenous variable has a disturbance. All lines are significant at the 0.001 level. Dashed lines are associated with the marker indicator (loading fixed to 1)

Table 4

The HTMT ratio of correlations for the final measurement model

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1					
Factor 2	.34				
Factor 3	.34	.25			
Factor 4	.24	.35	.48		
Factor 5	.15	.33	.66	.73	

Concurrent validity of the final model

Concurrent validity of the final retained model was investigated by examining correlations between the five CHQ scales with variables of maternal and child domains that have been conceptually and empirically associated with attachment disorganization – maternal psychopathology, parenting stress, maternal sensitive responsiveness and child’s behavioral and emotional problems. We first examined the associations between CHQ scales and demographic variables to determine covariates that would need to be controlled at testing the concurrent validity, namely child sex, and child and maternal age. There was a positive significant correlation between Mother Helpless scale and child sex (female=0; male=1), and a negative significant correlation between the same scale and mother age. Therefore, we controlled child sex and mother age on the relationship between Mother Helpless scale and the study variables.

As shown in Table 5, both Mother Helpless and Mother Frightened scales showed negative significant associations with maternal sensitive responsiveness, and positive significant links with all the remaining study variables. Although, the correlation between the Mother Frightened scale and parenting stress was marginally significant. The Child Frightened scale was also found to be negatively associated with maternal sensitive responsiveness, and showed a positive significant link with maternal psychopathology and with child internalizing and externalizing problems. Regarding Child Cheers Mothers scale, results revealed a positive significant association between this scale and child externalizing problems. Finally, Child Caregiving scale was significantly, negatively correlated with parenting stress.

Table 5

Concurrent validity: Correlations between the CHQ scales with demographic variables, and maternal and child domain variables

	<i>M (SD)</i>	CHQ Scales				
		Mother helpless	Mother frightened	Child frightened	Cheers Mother	Child Caregiving
Mother age	34.05 (5.18)	-.14*	-.10	-.13	-.08	-.03
Child age	4.26 (.87)	-.04	-.09	-.07	-.08	.19**
Child sex ^a		.16*	.08	.04	.10	-.06
Maternal psychopathology	.65 (.48)	.48***	.23**	.14*	.04	.07
Maternal parenting stress (<i>n</i> =86)	7.23 (5.22)	.33**	.20 ⁺	-.09	.09	-.34**
Maternal sensitive responsiveness (<i>n</i> =114)	4.71 (1.51)	-.26**	-.26**	-.20*	-.02	.14
Child internalizing problems (<i>n</i> =199)	11.95 (7.63)	.39***	.35***	.16*	.05	.02
Child externalizing problems (<i>n</i> =199)	12.87 (7.24)	.51***	.48***	.20**	.25***	-.04

Note. Spearman rho correlations (two-tailed). Partial correlations controlling for mother age and child sex on the relationships between Mother Helpless scale and study variables. Partial correlations controlling for children age on the relationships between Child Caregiving scale and study variables. *N*=200; ^a Point-biserial correlation coefficient, *r_{pb}*; ⁺*p*<.10; **p*<.05; ***p*<.01; ****p*<.001.

Discussion

The goal of this study was to adapt and validate the CHQ as a screening tool for disorganized maternal caregiving in a sample of Portuguese mothers of preschool-aged children. Overall, the results of the study supported the validity of the CHQ Portuguese version as a promising screening tool for disorganized caregiving.

In the CHQ development and validity study, George and Solomon (2011) performed an exploratory factor analysis that yielded a five-factor solution. After combining all items from factors 2 and 3, and from factors 4 and 5, the authors proposed a final solution of three scales. On the present study, confirmatory factorial analyses did not retain the 3-factor structure, while the 5-factor model showed a good model fit and acceptable, though poor, reliability and validity. The introduction of some minor changes in the 5-factor model resulted on a final model that exhibited good reliability and validity, producing five scales that correspond conceptually to major dimensions of relationship disorganization at preschool-age: (i) Mother Helpless scale (items 1, 5, 7, 10, 18, 20), pertaining to maternal helplessness; (ii) Mother Frightened (items 3, 4, 13, 14), concerning to mother fear in the relationship; (iii) Child Frightened (items 12, 15), pertaining to child fear in the relationship; (iv) Child Cheers Mothers (items 8, 11, 17), pertaining to role-reversal in the relationship in terms of cheer provision and (v) Child Caregiving (items 2, 9), pertaining to role-reversal in the relationship in terms of care provision. The values obtained for internal consistency were good for Mother Helpless ($0.9 > \alpha \geq .80$) and acceptable for Mother Frightened and Child Caregiving ($0.8 > \alpha \geq .70$), but questionable for Child Frightened and Child Cheers Mother ($0.7 > \alpha \geq .60$) (George & Mallory, 2003). The values of these two last scales were not desirable as they could be, however may be due to the limited number of two items included in each scale (Marsh, Hau, Balla, & Grayson, 1998).

The concurrent validity of the CHQ retained final model was investigated by examining the associations between each of the five scales and maternal and child variables that have been conceptually and empirically associated with attachment disorganization. Maternal domain variables included maternal psychopathology, parenting stress and sensitive responsiveness, whereas child domain variables included child behavioral and emotional problems.

Our data showed a strong and positive association between Mother Helpless, Mother Frightened and Child Frightened scales with maternal psychopathology. Interestingly, these results are in line with findings from other studies that used observational measures of disorganized caregiving behavior, linking anomalous forms of caregiving behavior with maternal psychopathology (e.g., Hobson et al., 2009). Therefore, our study is innovative by similarly showing an association between maternal psychological symptoms and disorganized caregiving, now evaluated in a representation level. Child Cheers Mother and Child Caregiving did not correlate significantly with maternal psychopathology, which might be explained by the fact that the items of these scales, as opposed to the other three scales, are child-specific and not relationship-specific (e.g., item 17, "My child is always trying to make others laugh"). Therefore, role-reversal might not be fully captured by these scales. Role-reversal implies a relational dynamic so that in order to be truly captured the focus must be on dyadic processes instead of child individual processes/characteristics. This may represent a limitation of the instrument. Consistently, on the CHQ development and validity study (George & Solomon, 2011), the correlation patterns of the Child Caregiving scale with criteria variables were, indeed, weak. Huth-Brooks et al. (2016) also faced lack of associations of the Child Caregiving scores with variables that were expected to correlate.

Data also revealed significant positive associations between parenting stress and Mother Helpless and Mother Frightened scales. These findings go in line with the theoretical idea that dysregulated mothers view their child as difficult and out of control, and therefore their relationship represents a source of stress; constricted mothers perceive their child as highly competent and autonomous, so it would be expected that their relationship would not represent a source of stress. Accordingly, the Child Caregiving scale showed a significant negative association with parenting stress, indicating that mothers who reported more role-reversal in terms of care provision were simultaneously less stressful in relation to parenting.

Mothers with higher scores on the Mother Helpless, Mother Frightened and Child Frightened scales were simultaneously less sensitive and more intrusive with their children. These findings

are in line with previous research reporting that disorganized/controlling mother-child dyads showed poorer and more dysfunctional free-play interactions, when compared with organized dyads, characterized by less coordination and attunement (Moss, Cyr & Dubois-Comtois, 2004). These results also seem to go in line with the theoretical framework of our study, that postulates the origin of disorganized caregiving as a failure to integrate painful attachment-related experiences on a representational level. This failure seems to prevent the mother to detect and integrate signals associated with caregiving. Therefore, the painful unresolved experiences may negatively affect the openness of the mother to perceive and respond to the child's signal in a responsive way (Lyons-Ruth, Bronfman, & Atwood, 1999). George and Solomon (2008) extended this idea, suggesting that in interaction with her child, the mother is susceptible to be overwhelmed by helplessness and fear, disabling the caregiving function and becoming unavailable for child's attachment cues. These findings are particularly important, as they are supported by an observational measure, instead of maternal report. The unexpected lack of significant association between Child Cheers Mother and Child Caregiving scales with maternal sensitive responsiveness was surprising and, once again, may be due to the child-specificity of these scales.

Moreover, previous research has shown associations between disrupted caregiving behaviors and child behavior and emotional problems (Madigan, Moran, Schuengel, Pederson, & Otten 2007). Our results expanded these observational findings to the representational level, showing strong positive associations between Mother Helpless, Mother Frightened and Child Frightened scales with child internalizing and externalizing problems. Since child's functioning was measured through maternal reports, these results also make sense considering the theoretical framework of our study that postulates dysregulated mothers as perceiving their child as difficult and problematic. In the same way, the Child Caregiving scale did not correlate with preschoolers' adjustment problems, going in line with the idea that constricted mothers perceive their children as developmentally supercompetent. However, in the light of this, the positive association between Child Cheers Mother scale and child's externalizing problems was unexpected, and once again raises doubts about this scale concurrent validity.

While this study represents an important contribution to the measurement of disorganized caregiving, there are some limitations that should be considered. First, test-retest reliability was not possible to determine because the assessment protocol was only administered once. Second, because this was a cross-sectional study, predictive validity could not be determined. Third, 1% of our sample had no education and 3% only completed primary school, which may undermine these mothers comprehension of the self-report measures and, consequently, their responses. Finally, the Caregiving Interview would have been useful to investigate the convergent validity. However, this measure is not validated for the Portuguese population, which also underlines the relevance of the present study by validating a screening-tool for disorganized caregiving.

Because we did not confirm the original CHQ structure, future research is needed to evaluate the stability of the retained CHQ structure in other samples. Although the elimination of items 6 and 22 improved the validity of the CHQ in our sample, it does not mean that those items should be unconsidered from prospective studies using this instrument. Only its future use with other samples may ultimately validate the retained structure. Also, considering questionable internal consistency of the Child Frightened and Child Cheers Mother scales and questionable concurrent validity of the Child Cheers Mother and Child Caregiving scales, further research is needed to deepen reliability and validity information in other samples. For a better assessment of concurrent validity, future studies could benefit from using multiple sources of information for child behavior and emotional problems (e.g. father, teacher). Furthermore, while the current study was conducted with low risk sample, the study with high-risk dyads may reveal even more about disorganized caregiving correlates, given higher prevalence of disorganization among children living in high-risk conditions (Cyr, Euser, Bakermans-Kranenburg, & Van IJzendoorn 2010). The association of

the CHQ with an observational measure of disorganized caregiving behavior, like the AMBIANCE coding system (Bronfman, Madigan, & Lyons-Ruth, 2008), would also be relevant to explore.

In conclusion, our study offers preliminary data of the validity of the CHQ as the first measure of disorganized caregiving for use with Portuguese mothers of preschool-aged children. Implications of the study may reinforce the knowledge on the caregiving system, providing evidence of the CHQ as a useful and easy tool for researchers seeking to understand disorganized caregiving.

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Caregiving Helplessness Questionnaire (CHQ) aplicado a mães portuguesas de crianças em idade pré-escolar: Um estudo psicométrico

O sistema de vinculação da criança é complementado por um sistema, separado e recíproco, de prestação de cuidados parentais, que guia as respostas de proteção do cuidador em relação à criança. Disrupções neste último sistema poderão conduzir a uma prestação de cuidados desorganizada; no entanto, o conhecimento acerca da desorganização da prestação de cuidados permanece incompleta, estando o seu estudo limitado a metodologias dispendiosas. O presente estudo pretendeu analisar as qualidades psicométricas do Caregiving Helplessness Questionnaire (CHQ), uma ferramenta de *screening* para a desorganização da prestação de cuidados, numa amostra de 200 mães portuguesas de crianças em idade pré-escolar. A análise factorial confirmatória não confirmou a estrutura da versão original do CHQ. Uma solução de cinco fatores verificou-se como sendo a melhor, produzindo cinco escalas conceptualmente correspondentes às principais dimensões da desorganização das relações em idade pré-escolar: *Mother Helpless*, *Mother Frightened*, *Child Frightened*, *Child Cheers Mothers* e *Child Caregiving*. O estudo da consistência interna obteve resultados satisfatórios e a validade convergente e discriminante foi confirmada. A validade concorrente também foi estabelecida através de associações significativas entre as escalas do CHQ e variáveis dos domínios materno e da criança que têm sido conceptual e empiricamente associadas com a desorganização. Em conclusão, os resultados suportam a validade do CHQ para mães portuguesas de crianças pré-escolares, como um instrumento de *screening* promissor desorganização da prestação de cuidados.

Palavras-chave: Caregiving Helplessness Questionnaire (CHQ), Validação, Sistema de prestação de cuidados, Desorganização da prestação de cuidados, Desamparo na prestação de cuidados.

Appendix 1

Items of the Caregiving Helplessness Questionnaire (ENG/PT)

Item
1. When I am with my child, I often feel out of control / Sinto-me fora do controlo quando estou com o meu filho
2. My child is good at tending to and caring for others / O meu filho é atencioso e carinho com os outros
3. I am frightened of my child / Tenho medo do meu filho
4. My child hits, kicks, or bites me / O meu filho bate-me, dá-me pontapés ou morde-me
5. I often feel that there is nothing I can do to discipline my child / Sinto muitas vezes que não consigo disciplinar o meu filho
6. My child knows how to put other people at ease / O meu filho sabe como pôr os outros à vontade
7. When I am with my child, I often feel that my child is out of control / Sinto muitas vezes que o meu filho está fora de controlo quando estou com ele
8. I feel that my child is a great actor/actress / Acho que o meu filho é um bom actor
9. My child is very sensitive to the feelings and needs of others / O meu filho é muito sensível aos sentimentos e necessidades dos outros
10. I feel that I am a failure as a mother / Sinto-me um fracasso como mãe/pai
11. My child likes to be a clown or family comedian / O meu filho gosta de ser o “bobo da corte” ou o comediante da família
12. I feel that I punish my child more harshly than I should / Sinto que castigo o meu filho mais severamente do que deveria
13. My child becomes so upset or distresses that he can't be soothed / O meu filho fica tão chateado e fora de controlo que não consegue ser confortado
14. My child loses it when he/she is separated from me / O meu filho fica fora do controlo quando se separa de mim
15. Sometimes my child acts as if he/she is afraid of me / Às vezes o meu filho age como se tivesse medo de mim
16. I enjoy doing things with my child that make him or her happy / Gosto de fazer com o meu filho coisas que o deixam feliz
17. My child is always trying to make others laugh / O meu filho está sempre a tentar fazer com que os outros se riam
18. I feel that my situation needs to be changed but I am helpless to do anything about it / Sinto que a minha situação devia mudar, mas sinto-me incapaz de fazer alguma coisa
19. I would describe myself as a reliable person / Considero-me uma pessoa de confiança
20. I feel that my life is chaotic and out of control / Sinto que a minha vida é caótica e está fora de controlo
21. I am rarely bored when I am with my child / Raramente sinto-me aborrecido/a quando estou com o meu filho
22. My child treats me in a rude or sarcastic way / O meu filho trata-me de forma rude ou sarcástica
23. I am happy with my self just the way I am / Sinto-me feliz comigo próprio/a por ser como sou
24. I rarely feel guilty about my actions / Raramente sinto-me culpado/a pelas minhas ações
25. I can easily express my self to others / Consigo expressar-me com facilidade aos outros
26. I frequently talk to others about my child / Falo frequentemente do meu filho a outras pessoas

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