Cross-Cultural Adaptation and Validation of Strengths-Based Parenting Measures in Brazil: PICCOLO and Cognitive Sensitivity Scale

by

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Abstract

The purpose of this research was to develop Brazilian-Portuguese versions of two observational instruments used in the assessment of early parenting, namely Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO; Roggman et al., 2013a) and the Cognitive Sensitivity scale (CS; Prime et al., 2015a). The first phase involved cross-cultural adaptation of the original instruments. The second phase included evaluation of the psychometric properties of the Portuguese versions of those instruments (PICCOLO-BR and CS-BR). A subsample of 156 mother-child (18-m) dyads drawn from the 2015 Pelotas birth cohort, the largest study of its kind in Latin America, were enrolled.

Cross-cultural adaptation followed seven-step guidelines. Translation syntheses were tested for content validity by various participants in the process, including expert reviewers, while back translations were based on final versions and submitted to author approval.

For validation purposes, the adapted instruments were tested for evidence of reliability and validity. Reliability studies confirmed acceptable levels of inter-rater agreement (PICCOLO: weighted Kappa = .40; percent agreement = 67%; CS: r = .83), intra-rater reliability (PICCOLO:
weighted Kappa = .57; percent agreement = 79%; CS: \( r = .94 \) and excellent internal consistency of global scales (\( \alpha = .94 \) for PICCOLO and CS). For construct validity, exploratory and confirmatory factor analyses were conducted and the same original structure was confirmed for the adapted versions. External validity was tested in relation to other measures for convergent and discriminant validity. Correlation analyses between the PICCOLO-BR and the CS-BR were moderately strong (\( r = .44 \) for scale scores; \( p < .001 \)) and between CS-BR composite score and PICCOLO-BR domains (\( r = .47 \) for Teaching, \( r = .41 \) for Encouragement, \( r = .37 \) for Responsiveness, and \( r = .32 \) for Affection; \( p < .001 \)). This research shows that both scales were reliable and valid. They offer culturally adapted measures for the assessment of early parenting in Brazil.
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# Table of Contents

Acknowledgments........................................................................................................ iv  
Table of Contents......................................................................................................... vii  
List of Tables .............................................................................................................. ix  
List of Figures ............................................................................................................. xi  
List of Appendices ....................................................................................................... xii  

Chapter 1 Introduction ............................................................................................... 1  
  1.1 Early Responsivity ......................................................................................... 2  
  1.2 Measurement of Early Responsivity ............................................................ 4  
  1.3 Parenting across Cultures ........................................................................... 6  
    1.3.1 Socioeconomic Status: A Social Determinant of Parenting across Cultures .... 7  
    1.3.2 Parenting in Brazil ............................................................................... 9  
  1.4 Why PICCOLO and the Cognitive Sensitivity Scale in Brazil? ............ 13  
  1.5 Cross-Cultural Adaptation of Instruments ............................................... 15  
  1.6 Measurement Properties of Scales ........................................................... 17  
  1.7 Research Questions ................................................................................. 18  

Chapter 2 Methods .................................................................................................. 23  
  2.1 Phase 1: Cross-Cultural Adaptation of the PICCOLO Checklist and Cognitive Sensitivity Scale ................................................................. 23  
    2.1.1 Sample ................................................................................................. 23  
    2.1.2 Instruments ....................................................................................... 24  
    2.1.3 Data Collection Procedures ............................................................. 26  
  2.2 Phase 2: Validation of the PICCOLO-BR Checklist and CS-BR Scale .......... 31  
    2.2.1 Sample ................................................................................................. 31  
    2.2.2 Instruments ....................................................................................... 32  
    2.2.3 Data Collection Procedures ............................................................. 35
List of Tables

Table 1 Data Analysis Plan .................................................................................................................... 20

Table 2 Descriptive Statistics of the PICCOLO Items in the Brazilian Sample ................................. 47

Table 3 Inter-Rater Reliability Results for Domains and Items on the PICCOLO Checklist in the Brazilian and US Samples ........................................................................................................ 49

Table 4 Intra-Rater Reliability Results for Items on the PICCOLO Checklist in the Brazilian Sample ......................................................................................................................................... 51

Table 5 Confirmatory Factor Analysis Results for the PICCOLO-BR Checklist and Item Loadings in the Brazilian and US Samples .................................................................................................. 54

Table 6 Factor Loadings from Exploratory Factor Analysis for the Brazilian Version of PICCOLO ........................................................................................................................................... 56

Table 7 Internal Consistency of the Scale Scores Based on PICCOLO Items in the Brazilian and US Samples ......................................................................................................................................... 57

Table 8 Correlations Between PICCOLO-BR Scores and Other Measures ........................................ 58

Table 9 Descriptive Statistics of Cognitive Sensitivity Items in the Brazilian and Canadian Samples ......................................................................................................................................................... 59

Table 10 Composite, Minimum, and Maximum Cognitive Sensitivity Scores in the Brazilian and Canadian Samples (18-m)........................................................................................................ 60

Table 11 Cognitive Sensitivity-BR Composite Scores by Wealth Quintiles in the Brazilian Sample ................................................................................................................................................. 61

Table 12 Confirmatory Factor Analysis Results for the Cognitive Sensitivity Scale and Item Loadings in the Brazilian Sample ........................................................................................................ 62

Table 13 Factor Loadings for Cognitive Sensitivity-BR Scale Items in Exploratory Factor Analysis ............................................................................................................................................... 64
Table 14 *Correlations Between Cognitive Sensitivity Scores and Other Measures in the Brazilian Sample* ................................................................. 65
List of Figures

Figure 1. Graphic representation of the cross-cultural adaptation phase (adapted from Beaton et al., 2000). .................................................................................................................................................................................. 27
List of Appendices

Appendix 1: Cognitive Sensitivity Scale Protocol (English) .................................................................102
Appendix 2: Author’s Permission to use PICCOLO for Research Purposes .................................104
Appendix 3: Publisher’s Permission to Use PICCOLO for Research Purposes .................................105
Appendix 4: Cognitive Sensitivity Scale – Forward Translations (T1 & T2) and Written Reports, in Portuguese ..................................................................................................................108
Appendix 5: Consent Form/Information Sheet for Potential Raters (English and Portuguese) ..118
Appendix 7: Consent Form/Information Sheet for Expert Committee Members (English and Portuguese versions) ...........................................................................................................125
Appendix 8: Back Translation of Cognitive Sensitivity-BR Scale ..................................................129
Appendix 9: Consent Form/Information Sheet for Practitioners – Focus Group (English and Portuguese versions) ...........................................................................................................137
Appendix 10: Focus Group Guide .....................................................................................................141
Appendix 11: Authorization Letter from the Principal Investigator for the 2015 Pelotas Birth Cohort Study ..........................................................................................................................142
Appendix 12: PICCOLO-BR Data Collection Kit ..............................................................................143
Appendix 13: Cognitive Sensitivity-BR Data Collection Kit ............................................................145
Appendix 14: Cognitive Sensitivity Scale in Portuguese (Authorized Version) ..........................146
Appendix 15: Consent Form/Information Sheet for Mothers (English and Portuguese versions) .................................................................................................................................147
Appendix 17: Ethics Approval Letter issued by the Federal University of Pelotas, Brazil.............152
Appendix 18: Cognitive Sensitivity Scale: Original Descriptions for the 11 Items and Cultural Adaptations to Guide Brazilian Observers for Coding, in English and Portuguese .156
Appendix 19: PICCOLO-BR: Item Distribution per Category in the Brazilian Sample ............162
Appendix 20: Inter-Rater Reliability Estimates for the Cognitive Sensitivity Items and Scale Score in Brazilian Sample ...........................................................................................................163
Appendix 21: Intra-Rater Reliability Estimates for the Cognitive Sensitivity Items and Scale Score in Brazilian Sample

164
Chapter 1
Introduction

Parenting interactions with children are time-demanding during infancy and exert critical and long-term influences on child development. Infancy, from birth to 1 ½ - 2 years of age, is a period of great parental investment aimed at ensuring the child’s survival, socialization, and learning. The cognitive potential, social skills and behavioural functioning of children are strongly dependent on early interactions with their primary caregivers as sources of the emotional support (De Wolff & van Ijzendoorn, 1997) and cognitive scaffolding (Mermelshrine, 2017) needed to achieve higher levels of feeling, thinking, and acting. These two broad constructs of parenting - socio-emotional and cognitive caregiving - are overlapping and interdependent (Bornstein & Putnick, 2012). Socio-emotional caregiving focuses on strategies that sensitively engage children in interpersonal interactions, while cognitive caregiving encompasses a variety of activities parents provide for stimulating children to engage and understand their environment. In implementation, public health agencies have operationalized these constructs independently to emphasize the specific behaviours involved. Parenting regulates the majority of infant-environment interactions and contributes to the process of child adaptation.

Serve and return interactions are a key relational process. They occur when infants ‘serve’ (i.e., instinctively reach out for interaction, through babbling, facial expressions, gestures, or cries) and caring partners ‘return’ by synchronizing with the infant (i.e., responding with the same kinds of sounds, gestures, making eye or physical contact). Serve and return interactions mean connecting with and responding to infants, both emotionally and cognitively. These reciprocal back-and-forth interchanges shape brain architecture (Bernier, Calkins, & Bell, 2016; Center on the Developing Child [CDC], 2010). In the scientific literature this interactional style has been described as early responsivity, a multidimensional construct that predicts the infant’s developmental outcomes in several domains (Atkinson et al., 2000; Landry, Smith, & Swank, 2006; Tamis-LeMonda, Bornstein, & Baumwell, 2001). Early responsivity is a fundamental feature of nurturing and positive caregiving that can be improved through intervention.
1.1 Early Responsivity

Early responsivity, as described above, is a multidimensional construct encompassing parental sensitivity in responding to an infant’s signals (Ainsworth, Bell, & Stayton, 1974), the expression of high levels of warmth and positive affection (Darling & Steinberg, 1993; MacDonald, 1992) and the use of rich verbal input and didactic content that are responsive to the infant’s interest (Tamis-LeMonda et al., 2001; Tamis-LeMonda, Kuchirko, & Song, 2014). This is the major aspect of parenting found to relate to cognitive, socio-emotional and brain development in young children (Belsky & Fearon, 2002; Bernier et al., 2016; Bornstein & Putnick, 2012; Bornstein, Tamis-LeMonda, Hahn, & Haynes, 2008).

Historically, parental responsivity was defined as responding sensitively to an infant’s affective signals. The roots of the responsivity construct are closely linked to Bowlby’s attachment theory of providing security and protection in the face of threats (Goldberg, Grusec, & Jenkins, 1999). Mary Ainsworth was the first to present a detailed description of maternal sensitivity, defined as the mother’s ability to perceive, interpret and respond appropriately and timely to an infant’s signals and needs. This responsive affective-emotional style may encompass behaviours characterized by the mutuality and appropriateness of parental actions based on the infant’s signals and responses (Ainsworth et al., 1974) or by positive affection and high levels of warmth and nurturance (Bretherton, 2000). Although these behaviours are distinct, they often occur together. There is considerable evidence that parental sensitivity ensures secure attachment (Bakermans-Kranenburg et al., 2003; De Wolff & van IJzendoorn, 1997; Sroufe, 2005) and is positively associated with social-emotional competence in children (Leerkes, Blankson, & O’Brien, 2009) and adults (Maselko, Kubzansky, Lipsitt, & Buka, 2011). Additionally, mutually responsive parent-child dyads are characterized by higher levels of child autonomy, positive moods, less antisocial behaviour, higher rates of future compliance and better communication within the dyad (Grusec & Davidov, 2010).

More recently, the concept of early responsivity has been broadened to include sensitive responses to a child’s cognitive states. Furthermore, it has been investigated in interactions among young children and other interactional partners and not just with mothers. A more recent
line of research, influenced by the Vygotskian sociocultural framework, has emphasized the role of responsive-didactic and verbal interactions in children’s cognitive and language development (Landry et al., 2008; Tamis-LeMonda et al., 2014). Attunement to childhood cognition has been investigated in the context of parental interaction with young children (Anderson, Roggman, Innocenti, & Cook, 2013; Mermelstine & Barnes, 2016; Prime et al., 2015a; Roggman, Cook, Innocenti, Jump Norman, & Christiansen, 2013a), caregivers in early childhood education and care settings (Burchinal et al., 2008; Pianta et al., 2005) and among siblings (Prime, Pauker, Plamondon, Perlman, & Jenkins, 2014a; Prime, Perlman, Tackett, & Jenkins, 2014b).

Cognitively responsive behaviours encompass the interactional partner’s use of (a) rich and contingent language (i.e., inputs semantically related to the infant’s previous utterances or attempts to communicate; Tamis-LeMonda et al., 2014), (b) scaffolding (i.e., offering age-appropriate problem-solving and didactic strategies; Mermelstine, 2017), (c) collaborative interactions characterized by joint attention, cooperative communication, collaborative action and instructed learning (i.e., sharing intentionality as participants share psychological states with one another; Tomasello & Carpenter, 2007; Tomasello, Carpenter, Call, Behne, & Moll, 2005), and (d) encouragement of the child’s efforts, exploration, play and autonomy, among other aspects. Cognitively responsive interactions have been associated with higher cognitive abilities (Britto, Brooks-Gunn, & Griffin, 2006; Fuligni et al., 2013; Landry et al., 2006; Page, Wilhelm, Gamble & Card, 2010), improved language development (Hart & Risley, 1995; Hudson, Levickis, Down, Nicholls, & Wake, 2015; Landry, Smith, Miller-Loncar, & Swank, 1997; Tamis-LeMonda et al., 2014; Topping, Dekhinet & Zeedyk, 2013) and enhanced executive functions in children (Bernier, Carlson, & Whipple, 2010; Fay-Stammbach, Hawes, & Meredith, 2014).

Since parental responsivity is such a critical construct in fostering early brain development (Bernier et al., 2016; CDC, 2010; Kok et al., 2015) and nurturing care is the cornerstone of successful early child development (ECD) interventions (Britto et al., 2017), there is an urgent need for valid and reliable measurements appropriate for use in large-scale programs. Brazilian ECD policies and programs will benefit from the incorporation of parental responsivity measurement instruments, as Brazil scales up programs at the population level to improve developmental outcomes in children (Institute of Medicine & National Research Council, 2015; Leer, López Bóo, Perez Expósito, & Powell, 2016; Verch, 2017). Such tools may
allow for better identification of the interactional partners most likely to benefit from intervention.

1.2 Measurement of Early Responsivity

Parental responsivity can only be reliably measured through observational methods. Attempts to develop parental-report instruments of the construct have not been successful (J. Mesman and J. Jenkins, personal communication, June 17, 2017). Observed responsivity (i.e., the interactional partner’s sensitivity in responding to the infant’s signals, the expression of warmth and positive affection toward the infant and the providing of language stimulation and sensitive teaching) is the major aspect of parenting associated with cognitive, socio-emotional and brain development in early childhood (Belsky & Fearon, 2002; Bernier et al., 2016; Bornstein & Putnick, 2012; Bornstein et al., 2008; Swingler, Perry, Calkins, & Bell, 2017).

Traditionally, observational microanalytic coding schemes, i.e., moment-to-moment judgment of specific behaviours, have been used to code parental responsivity (Kochanska & Aksan, 2004; Morawska, Basha, Adamson, & Winter, 2015). While relevant from a theoretical perspective, detailed coding schemes typically require extensive training and are complex and time-consuming to administer and code (Aspland & Gardner, 2003), thus limiting their usefulness at the population level. There has been a shift towards global or macro-level rating systems that measure parental sensitivity (Down, Levickis, Hudson, Nicholls, & Wake, 2015; Mesman & Emmen, 2013) and that have more recently incorporated the use of impressionistic coding (Ambady, 2010; Prime et al., 2014b). A global rating system involves the coder’s overall impression and judgment of parental responsive behaviours, requires larger coding units and a higher level of inference. Nevertheless, macro-level coding takes into account a broad array of the infant’s content cues when evaluating the meaning and appropriateness of maternal behaviours (Mesman, 2010). Global rating has been shown to be more appropriate and sensitive than microanalytic coding when assessing the mutuality of responsiveness between parents and infants (Kochanska & Aksan, 2004), as well as subtle behaviour variations in a playtime context (Morawska et al., 2015). Thus, global ratings are a better method than microanalytic coding for capturing the core and enduring social and emotional interaction patterns essential to evaluating parental responsivity. In contrast, microanalytic measuring provides data that cannot be derived from global ratings such as descriptive information on the frequency of parents’ bids to their
children and their responsiveness to the different types of their children’s bids (Kochanska & Aksan, 2004).

“Thin slice” judgments are impressionistic and intuitive inferences about the behaviour of others used as a quick but ecologically valid global coding method. As defined by Ambady (2010) “thin slices of expressive behavior are random samples of behavioral stream, less than 5 min in length, that provide information regarding personality, affect, and interpersonal relations” (p. 271). This coding methodology has been shown to be appropriate for rating observational items linked to the cognitive sensitivity construct in the interactions of siblings (Prime et al., 2014b) and mother-child dyads (Prime et al., 2015a). Furthermore, scores derived from thin slice judgments were significantly related to gold standard, microanalytic responsivity measurements (Prime et al., 2014b, 2015a).

A clear idea of tool purpose is key to guiding tool selection. The objective of the instrument will determine who, how, and what is to be measured. There are two broad types of measurements, i.e., for screening and diagnostic purposes. Screening refers to the use of brief standardized tools to differentiate among those who may fit into specific categories (i.e., those who need further evaluation for potential problems from those who probably do not; Marks & LaRosa, 2012). Although screening tools generate more measurement error than diagnostic tools (Lavigne, 2016), their administration is brief and training should be limited (Foy, Kelleher, & Laraque, 2010). Thus, use of psychometrically sound screening instruments is particularly feasible in primary care settings.

Given the public health importance of early responsivity to child development, screening of parental responsivity at the level of population groups could aid in identifying those caregivers who may benefit from parenting programs. There is also growing recognition of the need for integrating behavioural services into primary care (Stancin, 2016) to strengthen early identification and access to appropriate interventions (Marks & LaRosa, 2012). However, considering that the majority of instruments measuring parental responsivity have been developed in Western countries based on middle-class samples (Mesman, van IJzendoorn, & Bakermans-Kranenburg, 2012), one cannot presume that specific behaviours observed for those families and assessed by those instruments would generalize across cultures.
1.3 Parenting across Cultures

Parenting behaviours vary across cultures as they reflect goal-directed strategies based on cultural values, customs, and beliefs (Bornstein, 2006, 2012; Bornstein, Putnick, Lansford, Deater-Deckard, & Bradley, 2015; Greenfield, Keller, Fuligni, & Maynard, 2003). Thus, understanding parenting across cultures requires an appraisal of how complex behavioural patterns are organized and expressed differently from one society to another. Shared values and cultural norms (i.e., how frequently parents believe that other parents in their community use a specific parenting behaviour) are the most commonly cited explanations for the differences in parent-child interactions across cultures (Lansford et al., 2005). For example, Lansford and colleagues (2015) showed that the likelihood of parental use of corporal punishment is related to culture-wide belief in the need for such punishment in rearing children properly.

Although there is cross-cultural evidence of the importance of the construct of responsivity (Mesman et al., 2017; Mesman et al., 2012; Valenzuela, 1997), what constitutes responsive parenting may be culture specific (Cheung & Elliott, 2016; Mesman et al., 2017; van IJzendoorn & Sagi-Schwartz, 2008) with varied frequencies and meanings according to cultural norms. In this regard, Mesman and her associates (2017) argue for the ‘universality without uniformity approach’. In other words, they recognize responsivity as a universal construct though it may be expressed through different behaviours in diverse cultures.

Numerous studies have suggested that we can expect to see variations in associations between parenting practices and child outcomes in cases in which parental behaviours are more or less prevalent in a certain cultural or ethnic group (Bornstein, 2012; Brooks-Gunn & Markman, 2005; Fuligni & Brooks-Gunn, 2013; Lansford & Deater-Deckard, 2012; Lansford et al., 2005). Caregivers who, for instance, focus on an infant’s language development evidently have more verbally developed infants (Bornstein et al., 2012a), confirming that there is a relationship between parent-provided experiences and behavioural development in young children. Furthermore, there is a large body of research on cultural variations in parenting that highlights the relevance of a family’s socioeconomic status (SES) as a critical variable that accounts for some of the differences across cultural and ethnic groups (Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). In this regard, the seminal work of Hart and Risley (1995) showed
that children enter school with ‘meaningful differences’ in vocabulary knowledge depending on the SES of their family. According to this study, children from welfare families heard 616 words in a typical hour while their more affluent peers from professional families heard 2,153 words (3.5 times more). Moreover, there was a relevant difference in the quality of the words heard. While a child whose parent was on welfare heard five affirmatives and 11 prohibitions, the offspring of professional parents heard 32 affirmatives and five prohibitions (Hart & Risley, 1995). From this study, the authors concluded that variations in the intelligence quotients and language abilities of children were a function of how much the parents spoke to them. Thus, SES-related differences in parenting have been found to have a large impact on children’s developmental outcomes (Tamis-Le Monda et al., 2008).

1.3.1 Socioeconomic Status: A Social Determinant of Parenting across Cultures

Socioeconomic status is one of the strongest predictors of parenting and child outcomes. Many studies have shown that economic resources, particularly family income and parental education, are major contributors to family socialization practices (Blair & Raver, 2012; Mesman et al., 2012; Sirin, 2005). Family income and education affect the types of investments parents make in the lives of their children (Bradley & Corwyn, 2002). For instance, parents with higher education levels tended to provide their children with more learning materials and enriched experiences than parents with lesser education. Thus, children from poor families have less access to the learning materials and cultural resources that mediate the relationship between family income and their intellectual and academic achievement (Guo & Harris, 2000). A study carried out in developing nations showed that only 2% of households from low Human Development Index countries had 10 or more children’s books in comparison to 10% to 59.3% of homes in high Human Development Index countries (Bradley & Putnick, 2012). The Human Development Index is a summary measure of three basic indicators: life expectancy at birth, the total number of years of schooling a child of school-entry age can expect to receive throughout the child’s life, and the average number of years of education received in a life-time by people aged 25 years and older (United Nations Development Programme [UNDP], 2016a). Bradley and Putnick (2012) also concluded that the maternal level of formal education showed a unique relation to the availability of books and store-bought toys for learning. Parallel to this, there is evidence of an association between parental education and childrearing discipline. A study by
Lansford and Deater-Deckard (2012) found that, in general, developing countries with more advanced levels of education (measured by the Human Development Index; UNDP, 2016b) registered higher indices of nonviolence, lower levels of psychological aggression and physical violence in comparison to countries with less advanced education levels.

When parents are systematically subjected to the stress of poverty, their ability to provide responsive and nurturing care is compromised (Conger, Conger, & Martin, 2010). Socioeconomic strains lead to family stress, which in turn leads to nonoptimal parenting and poor child outcomes (the Family Stress Model; Conger et al., 1992, 1993). Scholars have demonstrated that observed responsivity is a key mediator of both the relationship between social disadvantage and family interactions (Browne, Leckie, Prime, Perlman, & Jenkins, 2016), and the association between SES and a child’s later receptive vocabulary (Prime et al., 2015a). Another study found clear evidence of substantial covariation between low-SES and ethnic minority status, with both being predictors of lower parental responsivity in the sensitivity domain (Mesman et al., 2012). On the other hand, findings confirmed that parental sensitivity in minority families is also related to positive child outcomes in cognitive, social and behavioural development. The authors concluded that interventions aimed at both reducing family stress and enhancing parental sensitive responsivity could augment the well-being of minority children.

There is evidence that in low- and middle-income countries (low-income economies are those with a gross national income per capita of US$ 1,005 or less in 2016; lower middle-income economies are those with a gross national income per capita between US$ 1,006 and US$ 3,955; upper middle-income economies are those with a gross national income per capita between US$ 3,956 and US$ 12,235; The Word Bank, 2017a), parents engage in more socio-emotional than cognitive caregiving. Bornstein and Putnick (2012) showed that more than half of the 127,000 mothers in their sample played with their children and took them outside, but only a third or fewer read books and told stories to their under-five-year-old children. This finding is also supported by a recent study showing that, while 70% of caregivers in low- and middle-income countries had played with their infants, only 9% of adults had read a book in the past three days (Bornstein et al., 2015). Additionally, authors reported that the proportion of specific socio-emotional and cognitive practices tends to be greater in high Human Development Index countries and lower in medium and low Human Development Index countries, as measured by the Multiple Indicator Cluster Survey (MICS3; United Nations Children’s Fund [UNICEF],
According to the World Bank Atlas method, Brazil is currently classified among the upper middle-income economies (The World Bank, 2017a).

1.3.2 Parenting in Brazil

Brazil is the fifth largest country in the world and the largest in Latin America with 8,514,877 km². The country is bordered by the Atlantic Ocean and all other South American countries except Chile and Ecuador. Brazil has an estimated total population of over 207.6 million inhabitants (Instituto Brasileiro de Geografia e Estatística [IBGE], 2017a), concentrated mainly in urban areas (more than 80%). The 2015 Brazilian National Household Sample Survey estimated the number of under four-year old children at 10.3 million, or 5.1% of the resident population (IBGE, 2017b). Of the nation’s total households, 13.7% had children in this age bracket.

In terms of the economy, Brazil has a per capita gross national income of US$8,840 or 4.9 times less than the per capita gross national income of Canada (US$43,660) and 6.3 times less than that of the United States of America (US) (US$56,180) (The World Bank, 2016). The disparity between rich and poor is larger in Brazil than in most countries at similar income levels, as revealed by the Gini index of 51.3 (2015) (The World Bank, n.d.). A Gini index of 0 reflects perfect income distribution equality, while 100 implies perfect inequality. The Gini indexes of Canada and the US were, respectively, 34 and 41 in 2013 (The World Bank, n.d.). Socio-economic analyses indicate that 45.5 million Brazilians live below the poverty line, surviving on less than US$ 5,50 a day (The World Bank, 2017b).

Brazil’s Human Development Index was .75 in 2015, occupying 79th position among 188 countries assessed for human development achievements and standard of living (UNDP, 2016a). Human development indexes greater than .80 are considered high, .50 to .79 are viewed as medium, and .00 to .49 as low. Like all averages, however, the Human Development Index masks inequality in the distribution of human development across the population at the country level. For instance, the Brazilian municipality of Buritizal, in the State of São Paulo (Southeast region), has an Human Development Index of .95 similar to Norway’s .95 mark, the highest country rating in the world (UNDP, 2016b), while Presidente Sarney, a city in the State of Maranhão (Northeast region), has an Human Development Index of .44, comparable to Ethiopia’s mark of .45 (174th position among 188 countries).
Brazilian culture is primarily Western. The core of Brazilian culture is rooted in three centuries of Portuguese colonization (1530-1822). The Portuguese legacy includes the language, predominant religion (Catholicism) and colonial architectural styles, among other things. From early on, the mix of the native population, Portuguese colonizers and African slaves evolved into a diverse ethnic and cultural reality. Later, in the nineteenth and twenty centuries, other ethnic groups - mainly Italians, Germans, Spanish, Arabs, Japanese, Polish, Dutch and Ukrainians - migrated to Brazil, shaping today’s multiethnic and multicultural society.

The history of slavery reveals that Brazil received the largest contingent of slaves of any country in the Americas. Roughly 4.5 million Africans were transported to Brazil between the sixteenth and nineteenth centuries, eventually transforming them into one of the largest segments of Brazilian society (Klein & Luna, 2010). Parallel to this, slave labor persisted in Brazil well beyond any other country of the Western Hemisphere. With more than 300 years of slavery (1570 – 1888), Brazil generated one of the largest ethnically-African populations outside Africa. Analyses produced by the Brazilian Institute of Geography and Statistics indicate that blacks (8.6%) and pardos (45%; “mulattoes”, referring to persons of mixed African and European or even African and Amerindian or Asian descent) account for the major share of the Brazilian population, with 53.6% in 2014. Brazilians who declared themselves white totaled 45.5%, while just 0.9% declared themselves as indigenous peoples or of oriental descent (Japanese, Chinese, Korean, etc.) (IBGE, 2015).

The long period of slavery produced a racially divided country marked by social, economic and political inequality between the descendants of the white European colonizers and the descendants of African slaves and indigenous peoples. Significant differences in income distribution persist even today when skin color or race are used as the variables of sociodemographic research. For instance, in 2016, the lowest 10% income bracket was composed of 78.5% blacks or pardos against 20.8% of whites. At the other extreme, the 10% with the highest income levels included just 24.8% of blacks or pardos (IBGE, 2017c). A breakdown of those living below the poverty line of US$ 5.50 per day shows an enormous number of unmarried mothers with children of up to 14 years of age (55.6%) and an even greater incidence of black or pardo women in this grouping (64%), indicating an accumulation of disadvantages that clearly deserves public policy attention (IBGE, 2017c).
The State of Rio Grande do Sul (RS), located in southernmost Brazil, has a Gaucho culture. Though the traditional meaning of “Gaucho” referred to the famed horsemen and cattle herders, descendants of European men and Amerindian women, who inhabited the plains of Southern Brazil, Argentina and Uruguay, today’s meaning is more generic and refers mainly to anyone born in RS. The population of the state is composed of several ethnic groups, predominantly Portuguese, German, Italian and African descendants, as well as the indigenous population. Rio Grande do Sul has approximately 11.2 million inhabitants, accounting for 5.49% of the national total (IBGE, 2016a). The mother-child dyads observed in this study live in Pelotas, a city of 344,000 inhabitants, more than 90% of whom live in urban areas (IBGE, 2016b). Pelotas has a Human Development Index of .74 (equivalent to Ecuador), slightly below that of the country as a whole (.75), and a per capita gross domestic product of US$ 8,368.

Research on early responsivity is scarce in Brazil. One of the reasons may be the lack of culturally adapted and psychometrically sound measurement tools for assessing parental sensitivity, warmth and cognitive stimulation in parent-child interactions. Moreover, the few observational instruments available for evaluating parenting interactions with young children were developed for research purposes, provide qualitative scores based on categories, require extensive training to administer and code and are not applicable to large-scale programs. Descriptions of some of these measurement tools are available elsewhere (see Piccinini, Alvarenga, & Frizzo, 2007a; and Piccinini, Frizzo, & Marin, 2007b).

In Brazilian culture, the socialization goals parents have for their children are based predominantly on the autonomous-related model (Seidl-de-Moura et al., 2013a; Seidl-de-Moura et al., 2008; Vieira et al., 2010). Goals are the outcomes toward which parents target their efforts (Darling & Steinberg, 1993). According to Keller (2012) and Kağitçibaşı (2005), the autonomous model emphasizes independence and self-sufficiency (parent-child relationships are distal in which face-to-face interactions and object stimulation predominate, reflecting an interactional pattern typical of urban, Western, middle-class educated families), while the relatedness model emphasizes intergenerational interdependence (body contact and proximal relationships with others are more common; observed in less affluent groups). In line with international literature, more highly educated Brazilian parents attribute greater value to autonomy during childhood than less educated caregivers (Seidl-de-Moura, de Carvalho, & Vieira, 2013b).
Parental values and beliefs should also be considered as distinct components of parenting (Sigel & McGillicuddy-De Lisi, 2002), including parental expectations on the course of development and their role in this development. Research into different cultures consistently indicates that parents from low-SES value conformity in their children, whereas parents from higher socioeconomic strata expect their children to be self-directed (Hoff, Laursen, & Tardif, 2002). In support of these findings, studies conducted in Brazil show that parental child-rearing values vary significantly from one social class to another. While middle-class parents are more likely to value autonomy and self-direction in their children, parents lower down on the socioeconomic ladder tend to attribute greater value to conformity and obedience (Martins et al., 2015; Tudge et al., 2013; Vieira et al., 2010).

In Brazilian society, just as in many parts of the world, knowledge about childrearing practices and child development during the first years of life is closely linked to parental education levels. It is worth mentioning, however, that some studies have shown low levels of information on these topics among Brazilian families. In a study by Ribas, Seidl-de-Moura, and Bornstein (2003), 40% of the child development items were answered incorrectly by Brazilian mothers ($n = 64$). As another example, 53% of caregivers from a nationwide representative and stratified sample ($n = 2002$) believed that children start learning from six months of age onward (Fundação Maria Cecília Souto Vidigal & IBOPE Inteligência, 2013). This lack of knowledge about early childhood can impact parent-child interactions negatively, making parents less responsive.

Parental practices, including the behaviours parents adopt in interactions with their children, the environments they create for children and the connections outside the home that parents enable and permit (Darling & Steinberg, 1993), are elements of critical importance. Brazilian studies show evidence of the relation between socio-emotional and cognitive parent-provided experiences and behavioural development in infants. For example, Barros and colleagues (2010) demonstrated that the least frequent caregiving practices among families with children with low developmental scores were having been told a story and owning a book. Another study by Ribeiro, Perosa and Padovani (2014) confirmed that children of mothers who provided less cognitive stimulation were 3.83 times more likely to show a developmental delay compared to the offspring of mothers who provided higher levels of cognitive stimulation. In this study, researchers found that mothers who expressed higher levels of sensitivity, positive
affection, and cognitive stimulation had children with higher levels of engagement and more positive than negative affection. Conversely, mothers marked by disengaged behaviours had less interactive and engaged children. A parenting program promoting parent-child reading aloud enhanced dyadic interactions, child language and cognitive development among low-income Brazilian families (Weisleder et al., 2017). This experimental study provides additional evidence of the importance of enriched parent-child interactions to child outcomes.

Finally, there is cross-cultural evidence of the centrality of parental responsivity - a universal and multidimensional aspect of caregiving - to child development in different societies around the world. In Brazil, however, little is known about parenting interactions with young children and how they matter. To overcome this limitation, Brazilian researchers could shift from predominantly qualitative data obtained through self-report measures on small samples to the use of multi-methods, including observational data based on larger samples (Dessen & Torres, 2002).

1.4 Why PICCOLO and the Cognitive Sensitivity Scale in Brazil?

There is a lack of valid, reliable and easy to learn strengths-based parenting measurement tools capable of assessing responsive and positive interactions in early childhood, especially in developing countries, including Brazil (Lago, Amaral, Bosa, & Bandeira, 2010). To overcome this situation, researchers recommend adaptation of instruments with documented validity rather than development of new ones, since cross-cultural adaptation is faster, easier and less expensive (Epstein, Santo, & Guillemin, 2015a; Lotzin et al., 2015). One assumes that cross-cultural adaptation will produce an equivalent measurement tool if the construct exists in the target culture and the existing instrument is able to measure it effectively (Beaton, Bombardier, Guillemin, & Ferraz, 2000; Epstein, Osborne, Elsworth, Beaton, & Guillemin, 2015b; Harkness, Mohler, & Van der Vijver, 2003). Furthermore, choosing a particular instrument for adaptation presupposes a positive psychometric history (Reichenheim & Moraes, 2007), whereas the adapted version facilitates international studies and comparisons across languages (Uysal-Bozkir, Parlevliet, & Rooij, 2013).

The majority of responsivity measurement tools are observational and were developed for research purposes, making it difficult for practitioners to use them in field work. Usually, these are high cost, time-consuming tools in terms of training raters, carrying out observations, coding
interactions and computing agreement levels among raters. Nevertheless, the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO; Roggman et al., 2013a) and the Cognitive Sensitivity scale (CS; Prime et al., 2015a) are observational tools used to improve the quality of caregiving in both health care interventions (Wheeler et al., 2013) and educational settings (Lippard, Riley, & Hughes-Belding, 2016; Norman & Christiansen, 2013).

PICCOLO (Roggman et al., 2013a) is a reliable and valid checklist of 29 positive parenting behaviours. The measurement items encompass early parental expressivity and responsivity in both socio-emotional and cognitive dimensions. It was developed at Utah State University in the US by researchers, using a sample of more than 2,000 low-income families from diverse ethno-cultural groups. PICCOLO can be applied to normally developing children, as well as to children with disabilities (Innocenti, Roggman, & Cook, 2013). This checklist was designed to be used by practitioners working with individual parents and young children in large-scale programs (Morris et al., 2017). Besides PICCOLO’s utility for assessing the quality of early caregiving, it has been used as a strengths-based training tool to orient the practice of home visitors in the field (Roggman, Cook, Innocenti, Jump Norman, & Christiansen, 2013b). The Turkish version of PICCOLO is already available (for the validation study in Turkey, see Bayoğlu, Unal, Elibol, Karabulut, & Innocenti, 2013). Translations and cultural adaptations of the PICCOLO tool are under development in other countries as well, including Chile and Spain (Spanish versions; Farkas et al., 2016; Vilaseca et al., 2016), Switzerland (Swiss German version; Keller-Schuhmacher & Watson, 2016), Italy (Italian version), the Netherlands (Dutch version), Moldova (Romanian version), and Haiti (French version). With all of this in mind, PICCOLO was chosen for adaptation and validation in the Brazilian framework1.

The Cognitive Sensitivity scale (CS; Prime et al., 2015a, 2014b) assesses responsivity in the cognitive domain. It was developed at the University of Toronto in Canada by researchers, using a sample of 397 mother-child (18-m) dyads (Prime et al., 2015a). The CS scale is applicable to any close relationship in which interational partners are working together to

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1 PICCOLO material (instrument protocol, coding guidelines and others) protected by intellectual property rights has been excluded from the manuscript.
engage in a complex, cooperative task. As well as assessing interactions from a more-to-less skilled partner it has also been validated in less-to-more skilled partners, such as children to parents or younger to older siblings. The cognitive sensitivity construct was developed by the authors of this instrument at the University of Toronto, in Canada. Although this measurement was developed based on the sensitivity construct of individuals picking up the cues of interactional partners to enhance trust, the authors added to that the idea of doing things in a manner sensitive to the child’s mind and interest. It gives due consideration to the focal point of the child’s attention, how to stimulate his/her attention and how to be responsive to that attention. Studies in this area have found that cognitive sensitivity, measured in dyadic interactions of mother-child or older sibling-younger sibling, plays a central role in the child’s cognition, executive function and language development (Browne et al., 2016; Prime et al., 2015a, 2014a, 2014b; Prime, Plamondon, Pauker, Perlman, & Jenkins, 2016). The CS scale was designed as a population-based screening measurement tool for assessing the cognitive sensitivity of interactional partners. For these reasons, the CS scale was chosen for adaptation and validation in the Brazilian context. Nonetheless, before utilizing any measurement tool in a cultural framework that differs qualitatively from that for which it was originally developed, the tool must be adapted and tested (Beaton et al., 2000).

1.5 Cross-Cultural Adaptation of Instruments

Cross-cultural adaptation of instruments aims at producing content- and concept-based equivalency between source and target versions. Anytime a measurement tool is used with a population that differs qualitatively from the one for which it was originally developed, specific methods must be employed to achieve equivalence between the original source and the target version (Beaton et al., 2000; Epstein et al., 2015a; Geisinger, 1994). According to cross-cultural adaptation experts, items must not only be well translated linguistically, but must also be adapted culturally to maintain the content validity of the instrument at a certain conceptual level across different cultures (Hambleton, 2005; Harachi, Choi, Abbott, Catalano, & Bliesner, 2006).

The cross-cultural adaptation guidelines endorsed by Santo, Ribeiro-Ferreira, Alves, Epstein, and Novaes (2015), and Beaton et al., (2000) and used as a methodological reference for this study, recommend the stages delineated below. The first stage is forward translation by two independent translators. The translators should be fluent in the source language (where it was
developed) and native in the target language (where it is going to be used). Additionally, the translators should have different backgrounds. Translator 1 is tasked with providing equivalency from a more clinical and academic perspective, while translator 2 will provide a translation reflective of the language used by the population and identify ambiguities in the original measurement. This guideline enhances the cultural fit of the translation and adaptation processes. Each translator is also requested to produce a written report of the translation he/she completed, with comments on challenging phrases or uncertainties and his/her rationale for the choices made, as recommended by Beaton et al. (2000). This stage is essential to attaining semantic and idiomatic equivalence.

The second stage is synthesis of the translations or reconciliation produced by the researcher in collaboration with judges. They produce the first synthesized version of the instrument. The third stage is evaluation of the synthesized version by the target population, i.e., the potential raters in a focus group. This stage seeks to test the adapted version for content validity (i.e., semantic and idiomatic equivalence between original and adapted versions) and method bias (i.e., interpretation of instructions, items, scoring rubrics and motivations underlying answers). The result comes quite close to content validation of the instrument in the target population (Hambleton, 2005). With this, an intermediate version of the measurement is developed. The fourth stage is forming an expert committee. Various authors consider expert committees helpful in ensuring accurate content (Beaton et al., 2000; Epstein et al., 2015a, 2015b). A multi-regional committee is recommended to ensure appropriate translation regardless of the expert’s region of origin (Bracken & Barona, 1991; Cassepp-Borges, Balbinotti, & Teodoro, 2010). The committee’s role is to ensure that each item is conceptually and functionally equivalent in the new setting and that the translation will not only be understandable, but will elicit the same answers (Petkovic et al., 2015). The committee has to decide between the original and the revised version of the tool in four areas of equivalence: (1) semantic equivalence, encompassing the following questions: (i) Do the words mean the same thing?, (ii) Does a specific item have multiple meanings?, and (iii) Are there grammatical difficulties in the translation?; (2) idiomatic equivalence: colloquialisms are difficult to translate and the committee may have to formulate or identify an equivalent expression in the target version; (3) experiential equivalence: it may be necessary to replace the measurement item with a similar item experienced in the target culture; and (4) conceptual equivalence: words often have
different conceptual meanings from one culture to another (Beaton et al., 2000). In the fifth stage, a *back-translation* should be performed by a carefully selected professional translator different from the previous translators, with the source language being his/her mother tongue. To avoid information bias and increase the likelihood of highlighting deficiencies in the translation, the professional translator should be neither aware nor informed beforehand of the concepts explored. Back-translation is considered by some experts as an additional quality control check to evaluate the extent to which the translated version reflects the content and meaning of the original items (Beaton et al., 2000; Sireci, Yang, Harter, & Ehrlich, 2006). The sixth stage is *submission of the back-translation to the developers of the measurement* for validation. The outcome of this stage is the authorized version of the adapted instrument. The seventh stage is a *pilot study* designed to train raters on assigning scores, based on the scoring rubrics. In the case of observational measurements, it is important to be aware of culture-specific behaviours observed in the population studied.

1.6 **Measurement Properties of Scales**

Any psychometrically sound measurement should be reliable (producing stable and consistent results) and valid (measure what it purports to measure) (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education [AERA, APA, & NCME], 2014). Reliability refers to the reproducibility or consistency of scores from one assessment to another and is a necessary, but not sufficient, component of validity (Cook & Beckman, 2006). Reliability can be assessed in different ways. Inter-rater reliability (IRR), or agreement among raters, is the degree to which independent raters agree on assigning the scores of the instrument based on the scoring rubrics. Assessment of IRR is necessary to demonstrate consistency among observational ratings, i.e., how well different raters independently provide similar scores or ratings (Hallgren, 2012). Intra-rater reliability indexes are used to evaluate consistency of scoring from the same rater over time. Internal consistency, the most commonly reported reliability statistic, assesses the degree to which items correlate with one another. Cronbach’s alpha coefficient (α) is the method applied to assess consistency in scores among equivalent items (Cronbach, 1951). It ranges from 0 to 1, with an α above .70 indicating high internal consistency. High correlations are expected between item scores measuring a single construct, while a low α raises the possibility that the scores are measuring more than one construct.
Validity is a unitary concept referring to the degree to which all the accumulated evidence supports the intended interpretation of test scores for the proposed use (AERA, APA, & NCME, 2014, p.14). Validation, therefore, is the process of evaluating arguments for and against the intended interpretation of test scores, coupled with a rationale for the relevance of the interpretation to the proposed use, i.e., the construct or characteristic a test is designed to measure. Four types of validity evidence are presented in this study: content validity, construct validity, convergent validity and discriminant validity. Content validity is the extent to which the intended content domain is being measured by the assessment tool. Qualitative methods such as focus groups and interviews are usually applied. Construct validity is the degree of correspondence between abstract constructs and the procedures used to make them operational, i.e., their measurements. Evidence is obtained through confirmatory and/or exploratory factor analyses (CFA; EFA) that investigate relationships between instrument items and the constructs they are intended to measure. Factor analysis determines whether the items cluster together into factors as expected (Izquierdo Alfaro, Olea Díaz, & Abad, 2014). Items that load on more than one factor, or on unexpected factors, may not be measuring their intended construct (Cook & Beckman, 2006). Convergent validity is demonstrated when measurements of constructs that theoretically should be related to one another are, in fact, observed to be so related. In contrast, discriminant validity is demonstrated when measurements of constructs that theoretically should not be related to one another are, in fact, observed not to be so related. These two types of criteria validity are assessed through correlation analysis with other assessment tools.

1.7 Research Questions

The purpose of this study was to develop the Brazilian-Portuguese version of PICCOLO checklist (PICCOLO-BR) and the CS scale (CS-BR) and investigate their psychometric properties. More specifically, the first phase of the study involved instrument development through cross-cultural adaptation of the original measurements. The second phase included collecting data and evaluating the psychometric properties of the adapted versions (PICCOLO-BR and CS-BR). The ultimate aim of this research was to provide cross-culturally adapted, validated and useful measurements for assessing parent-child interactions in Brazil.

The second phase of the study delves into the following research questions:

1. What are the psychometric properties of the PICCOLO-BR version?
1.1 What is the distribution of scores of the PICCOLO-BR checklist in the Brazilian sample?
1.2 What is the inter-rater reliability of the PICCOLO-BR scores in the Brazilian sample?
1.3 What is the intra-rater reliability of the PICCOLO-BR scores in the Brazilian sample?
1.4 Can the structure of the English version of PICCOLO be preserved in the Portuguese language adapted version of the instrument?
1.5 If the structure of the English version cannot be preserved in the Brazilian sample, what is the structure of the PICCOLO-BR version?
1.6 What is the internal consistency of scale scores based on PICCOLO-BR items?
1.7 What are the convergent validity and discriminant validity of the PICCOLO-BR scale?

2. What are the psychometric properties of the CS-BR version?
2.1 What is the distribution of scores of the CS-BR scale in the Brazilian sample?
2.2 What is the inter-rater reliability of the CS-BR scores in the Brazilian sample?
2.3 What is the intra-rater reliability of the CS-BR scores in the Brazilian sample?
2.4 Can the structure of the English version of the CS scale be preserved in the Portuguese language adapted version of the instrument?
2.5 If the structure of the English version cannot be preserved in the Brazilian sample, what is the structure of the CS-BR version?
2.6 What is the internal consistency of the scale scores based on CS-BR items?
2.7 What are the convergent validity and discriminant validity of the CS-BR scale?

3. What is the convergent validity between the PICCOLO-BR total and domain scores and the composite score of the CS-BR version?
3.1 What are the correlations between the PICCOLO-BR total and domain scores and the CS-BR composite score?

Table 1 presents the complete data analysis plan with the operationalized questions, variables and data analysis for the validation study.
<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Operationalized Questions</th>
<th>Variables</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the psychometric properties of the PICCOLO-BR version?</td>
<td>1.1 What is the distribution of scores of the PICCOLO-BR checklist in the Brazilian sample?</td>
<td>29 items, measured on 3-point ordinal rating scale (0-2) and clustered into 4 domains</td>
<td>Descriptive statistics for each item (frequency of responses, mean, and standard deviation)</td>
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<td></td>
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<td>Sample = 155 videos (primary rater - PR)</td>
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<td>1.2 What is the inter-rater reliability of the PICCOLO-BR scores in the Brazilian sample?</td>
<td>Scores on 29 items (scored 0-2), clustered into 4 domains, collected from 2 raters</td>
<td>Weighted kappa and percent agreement computed for each item</td>
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<td>Based on double coding 25% of cases</td>
<td><strong>range agreement reported</strong></td>
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<td>Sample = 155 videos (PR)</td>
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<td></td>
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<td>Subsample = 39 videos (Second rater – SR)</td>
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<td>1.3 What is the intra-rater reliability of the PICCOLO-BR scores in the Brazilian sample?</td>
<td>Scores on 29 items (scored 0-2), clustered into 4 domains, collected from the PR 2 weeks apart</td>
<td>Weighted kappa and percent agreement computed for each item</td>
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<td></td>
<td>30 videos</td>
<td><strong>range agreement reported</strong></td>
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<td>1.4 Can the structure of the English version of PICCOLO be preserved in the Portuguese language adapted version of the instrument?</td>
<td>29 items measured on 3-point ordinal rating scale (0-2) and clustered into 4 domains</td>
<td>Confirmatory factor analysis</td>
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<td>Information on the dimensionality of the English version</td>
<td>** conducted in Stata**</td>
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<td></td>
<td>1.5 If the structure of the English version cannot be preserved in the Brazilian sample, what is the structure of the PICCOLO-BR version?</td>
<td>29 items, measured on 3-point ordinal rating scale (0-2) and clustered into 4 domains</td>
<td>Exploratory factor analysis based on matrix of polychoric correlations</td>
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<td>Extraction method: principal axis factoring ** conducted in Stata**</td>
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<td>1.6 What is the internal consistency of scale scores based on PICCOLO-BR items?</td>
<td>29 items measured on 3-point ordinal rating scale (0-2)</td>
<td>Cronbach’s alpha coefficient (α) for subscales and the entire scale</td>
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<tr>
<td>1.7 What are the convergent validity and discriminant validity of the PICCOLO-BR scale?</td>
<td>PICCOLO-BR total score (measured at 18-m) Five Stimulation Markers (measured at 18-m) OX-NDA scales scores (measured at 12-m) Gender</td>
<td>Pearson correlation coefficient (for continuous variables) Point-Biserial correlation coefficient (for binary (0/1) measures) Spearman’s correlation coefficient (for ordinal measures)</td>
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<tr>
<td>2. What are the psychometric properties of the CS-BR version?</td>
<td>Scores on 11 items and composite score (scored 1-5) Sample = 153 videos (PR)</td>
<td>Descriptive statistics for 11 items and composite scores – frequency of responses, mean, and standard deviation</td>
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<tr>
<td>2.1 What is the distribution of scores of the CS-BR scale in the Brazilian sample?</td>
<td>Scores on 11 items (scored 1-5) collected from 2 raters Based on double coding 25% of cases Sample = 153 videos (PR) Subsample = 39 videos (SR)</td>
<td>Pearson correlation coefficient computed for each item and the whole scale</td>
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<tr>
<td>2.2 What is the inter-rater reliability of the CS-BR scores in the Brazilian sample?</td>
<td>Scores on 11 items (scored 1-5) collected from the PR 2 weeks apart 30 videos</td>
<td>Pearson correlation coefficient computed for each item and the whole scale</td>
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<tr>
<td>2.3 What is the intra-rater reliability of the CS-BR scores in the Brazilian sample?</td>
<td>Scores on 11 items (scored 1-5)</td>
<td>Confirmatory factor analysis</td>
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<td>2.5 If the structure of the English version cannot be preserved in the Brazilian sample, what is the structure of the CS-BR version?</td>
<td>Scores on 11 items (scored 1-5)</td>
<td>Exploratory factor analysis based on matrix of polychoric correlations ** conducted in Stata</td>
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<tr>
<td>2.6 What is the internal consistency of the scale scores based on CS-BR items?</td>
<td>Scores on 11 items (scored 1-5)</td>
<td>Cronbach’s alpha coefficient (α) for the entire scale</td>
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<tr>
<td>2.7 What are the convergent validity and discriminant validity of the CS-BR scale?</td>
<td>CS-BR composite score (measured at 18-m) Five Stimulation Markers (measured at 18-m) OX-NDA scales scores (measured at 12-m) Gender</td>
<td>Pearson correlation coefficient (for continuous variables) Point-Biserial correlation coefficient (for binary (0/1) measures) Spearman’s correlation coefficient (for ordinal measures)</td>
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<tr>
<td>3. What is the convergent validity between the PICCOLO-BR total and domain scores and the composite score of the CS-BR version?</td>
<td>PICCOLO-BR total score, affection score, responsiveness score, encouragement score and teaching score CS-BR composite score (scale)</td>
<td>Pearson correlation coefficient</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2
Methods

This cross-sectional study consisted of two phases. Phase 1 is a cross-cultural adaptation of the PICCOLO checklist (Roggman et al., 2013b; Roggman, Cook, Innocenti, Jump Norman, Christiansen, 2013c) and Cognitive Sensitivity scale (Prime, Rodrigues, Perlman, & Jenkins, 2015b) from the source language (English) to the target language (Brazilian-Portuguese), with the end result being an adapted version of each instrument. Phase 2 is validation of the PICCOLO-BR and CS-BR versions. The methodology adopted in each phase is described separately below. In part, the statistical approaches that were used to examine the psychometric properties of the instruments followed those that were used in the original publications.

2.1 Phase 1: Cross-Cultural Adaptation of the PICCOLO Checklist and Cognitive Sensitivity Scale

The cross-cultural adaptation phase demanded considerable investment of time and effort, mainly for purposes of consulting with a diversity of Brazilian subjects and the developers of the instruments under investigation. A well-established method was applied to maximizing the level of semantic, idiomatic, conceptual and experiential equivalence achieved between the original and adapted versions of the observational measurement tools. The protocols (i.e., coding sheets) of both instruments, as well as the observational notes presented in the corresponding training manuals, were analysed throughout the adaptation process. Parallel to this, the PICCOLO-BR and CS-BR versions were pretested in a pilot-study that resulted in development of a supplemental set of guidelines with cultural adaptations to guide Brazilian raters for coding.

2.1.1 Sample

The cross-cultural adaptation phase of this study involved focus groups of Brazilian primary health care practitioners and health professionals, together with early childhood specialists as expert committee members. Seventeen Brazilian primary health care practitioners were recruited as a convenience sample through the Primeira Infância Melhor (PIM – Better
Early Childhood), an ECD intervention program coordinated by the Rio Grande do Sul State Health Secretariat in collaboration with Municipal Health Secretariats. The PIM Program has been described in detail elsewhere (Leer et al., 2016; Schneider & Ramires, 2007; Verch, 2017). The subjects were PIM program supervisors (college graduates) and home visitors (high school graduates and a sprinkling of undergraduate students) from Porto Alegre and Pelotas. Eight primary health care professionals (two pediatricians, two nurses, two nutritionists and two social workers) with experience in observing mother-child interactions were recruited as a convenience sample through the Pelotas Health Secretariat and participated in a specific focus group. Additionally, five Brazilian specialists (two epidemiologists, two educators and one psychologist), with doctoral degrees in their respective areas of expertise, were invited by the principal investigator (PI) to participate as expert committee members.

2.1.2 Instruments

The original English language protocols were used in Phase 1 of this study to develop the Portuguese language versions.

The PICCOLO Checklist. PICCOLO is a strengths-based checklist of 29 observable behaviours used to assess positive parenting interactions with children aged 10 to 47 months (Roggman et al., 2013a). PICCOLO items are clustered in four domains, namely (a) affection (operationalized as warmth, physical closeness and positive expressions toward the child); (b) responsiveness (operationalized as responding sensitively to a child’s cues, needs, interests and behaviours); (c) encouragement (operationalized as active support of play, exploration, curiosity, skills and creativity); and (d) teaching (operationalized as shared conversations and play, cognitive stimulation, explanations and questions). Each domain encompasses between seven and eight observable items of positive parenting behaviours, each of which has a short label in the instrument protocol (Roggman et al., 2013c) and a more detailed description in the PICCOLO User’s Guide (Roggman et al., 2013b).

The PICCOLO checklist was designed to be reliably administered and rated by non-experts, i.e., trained undergraduate students. In the US, training includes approximately 3 hours of reading on the content and purpose of the measurement tool and 8 hours of video practice (total of 11 hours). After watching a 10-minute film clip a single time, raters are called upon to attribute codes using a 3-point ordinal rating scale: 0 means ‘Absent’, or no evidence whatsoever
of the behaviour; 1 means ‘Barely’, or no more than a momentary, brief, minor or emerging
glimpse of the behaviour; and 2 means ‘Clearly’, or definite, strong or frequent presence of the
behaviour. The sum of item scores per domain is the domain score, while the sum of the domain
scores is the total PICCOLO score.

In the US, a rigorous methodological procedure was implemented to develop this
measurement tool. PICCOLO parenting behaviours were examined among European-American,
Afro-American and Latin-American parent-child dyads that showed acceptable psychometric
properties within each ethnic group. In the US measurement study (Roggman et al., 2013a), IRR
correlations between pairs of observers averaged $r = .77$ (ranging from $r = .74$ for the
responsiveness domain to $r = .80$ for the affection domain). Internal consistency, measured by
Cronbach’s $\alpha$ coefficient, was .91 for the total PICCOLO score (ranging from $\alpha$s of .75 for the
responsiveness domain to .80 for the teaching domain). PICCOLO total scores and domain
scores were significantly correlated with later child cognitive, language, and socioemotional
outcomes at ages 2 (24 months), 3 (36 months), and 5 (prekindergarten) (Roggman et al., 2013a,
p. 297).

**The Cognitive Sensitivity Scale.** The Cognitive Sensitivity scale (CS) is a
unidimensional 11-item observational tool. It was designed to provide rapid assessments of the
extent to which an individual engages with the thoughts and beliefs (considering the knowledge
and abilities) of his/her partner when working toward a joint goal in a cognitively challenging
cooperation task (Prime et al., 2014b). The cognitive sensitivity construct is comprised of three
overlapping features: communicative clarity, mind-reading, and mutuality building.
Communicative clarity encompasses the means through which an individual provides meaningful
inputs to his/her interactional partner, avoiding ambiguities, as evinced by provision of verbal
and nonverbal directions and fostering of joint understanding of the goals and rules governing
the task (items 1 to 6). Mind-reading is an individual’s tendency to consider the knowledge of a
partner, as demonstrated by rephrasing of information and responsiveness to requests for help
(items 7 to 9). Finally, mutuality building represents an individual’s tendency to promote
reciprocity in exchanges, as indicated by the provision of positive feedback and encouragement
of turn-taking (items 10 and 11). The CS scale has been used to assess dyadic interactions with
children at the ages of 18 months, 3, 4.5 and 7 years.
The coding scheme uses a thin slice methodology (Ambady, 2010) of impressionistic ratings based on brief observations. Assessment takes around eight minutes to administer and code. The scale was designed to be administered by non-experts. However, coding should preferably be performed by trained psychologists with deep-rooted knowledge and understanding of the construct being investigated. In Canada, training includes a 3-hour discussion of concepts with an expert coder and 4 hours of video practice (total of 7 hours). After watching a 5-minute film clip just once, the raters elaborate codes using a 5-point Likert scale, ranging from 1 (‘Not at all true’) to 5 (‘Very true’). The mean result of the 11 items is calculated, yielding a composite 1 to 5 score. Higher scores on the CS scale indicate that individuals are more skilled at providing cognitively-attuned inputs to their partners.

In Canada, the maternal CS composite score with 18-month old children was 3.24; IRR based on double coding 20% of cases was $\alpha = .84$; and internal consistency of the scale was $\alpha = .92$. Therefore, Canadian validation studies of the CS scale among sibling dyads (Prime et al., 2014a) and mother-child dyads (Prime et al., 2015a) yielded very good psychometric properties. Among mothers, CS converges with traditional measurements of affective sensitivity, is lower in contextual risk settings and is directly associated to child outcomes, including receptive vocabulary, executive functioning, theory of mind and academic achievement (Prime et al., 2014a, 2014b, 2015a). The original English language protocol of the CS scale (Prime et al., 2015b) is presented in Appendix 1.

2.1.3 Data Collection Procedures

This study adopted a seven-stage methodology for the cross-cultural adaptation phase, as shown in Figure 1. These stages were adapted from guidelines put forward by Beaton et al. (2000) with some variations to meet the specific needs of the study. The International Test Commission (ITC) endorses these guidelines for translating and adapting tests (ITC, 2017).
Figure 1. Graphic representation of the cross-cultural adaptation phase (adapted from Beaton et al., 2000).

Considering that PICCOLO is a copyrighted instrument, prior permission of the authors and publisher was required to use the original instrument for this study. Thus, the preliminary step was to obtain the necessary permissions from those holding intellectual property rights. The PI received permission from the main PICCOLO author, Dr. Lori Roggman (see Appendix 2), and from Brookes Publishing (see Appendix 3) to use the original instrument for research purposes. The developers of the CS scale also authorized use of the original instrument in this study. This is an important preliminary step concerning the ethics in cross-cultural validation of a scale.
The first stage was *forward translation*. The original English language PICCOLO and CS measurement tool protocols were translated into Brazilian-Portuguese by two independent translators, fluent in the source language (English) and native in the target language (Portuguese). This allows for analysis of language nuances, thus ensuring an improved cultural fit of the adaptation process. In addition to this, the translators came from different backgrounds: translator 1 was trained in psychology and was knowledgeable regarding the constructs being examined (mother-child interactions), while translator 2 had no background in psychology and was neither knowledgeable nor informed about the concepts examined in the instruments. Consequently, translator 1 was tasked with providing equivalency from a clinical and academic perspective, while translator 2 sought to provide a translation reflective of the language used by the population and identify ambiguous meanings in the original tools. As recommended by Beaton et al. (2000), each translator was also requested to produce a written report upon conclusion of the task, with additional comments on challenging phrases or uncertainties and his/her rationale for the choices made (see Appendix 4 for forward translations and written reports on CS). This proved to be an important aid in pursuing semantic and idiomatic equivalence.

The next stage was *synthesis* or *reconciliation of the translations*. The researcher invited two specialists with previous knowledge of the tools used in assessing parent-child interactions to work with her as judges, with the task of comparing the two completed translations (T1 and T2) with the original instruments in order to produce the first synthesized Portuguese language versions (T-12) of PICCOLO-BR and CS-BR.

The third stage was *evaluation* of the first Brazilian-Portuguese PICCOLO-BR and CS-BR versions *by the target population* (potential raters) in two focus groups. This stage was designed to obtain semantic and idiomatic equivalence between the original instruments and the adapted versions. The two focus groups worked in the southern Brazilian cities of Pelotas (on November 17, 2016) and Porto Alegre (on November 18, 2016), respectively (see Appendix 5 for Consent Form/Information Sheet for Potential Raters – Focus Group).

Participants were asked to read one table per instrument containing specific items, labels of the items and the response options and to determine the extent to which each item in the protocol was clear and comprehensible, utilizing a 5-point scale (1 = Not understandable; 2 =
Confusing; 3 = Dubious; 4 = Understandable; 5 = Understood) (see Appendix 6 for the printed form used for semantic analysis of the Portuguese language CS-BR). The final task was a group discussion of the items scored as 1, 2 or 3 on the comprehensibility scale. The participants were encouraged to comment, express their doubts and difficulties and give their opinions on possible changes that could improve comprehension. The aim at that point was to test the adapted versions for content validity. Based on the suggestions and comments received from the participants, intermediate versions (T-tp) of the Brazilian-Portuguese PICCOLO-BR and CS-BR measurement tools were developed.

The fourth stage was formation of an expert committee for each instrument. The expert committee for the PICCOLO-BR measurement tool had three participants, including a psychologist experienced in mother-child interaction and measurement (IG), an epidemiologist with extensive experience in research on maternal and child health (CGV) and an educator with considerable work in early childhood interventions (MGP). Another committee made up of an epidemiologist with extensive experience in research and validation of measurement tools (ISS) and an educator with vast knowledge on early childhood education (JBO) was given the task of reviewing CS-BR protocols (see Appendix 7 for Consent Form/Information Sheet for Expert Committee Members). All were fluent in English, and were drawn from three different regions of Brazil. The tasks of the committees were to review all the translations and written reports, make decisions, reach a consensus on any discrepancies and consolidate revised versions of the instruments. Their role was to ensure that each item was conceptually and functionally equivalent in the new setting, that the translations were understandable and that they elicited the same answers. The material available to the committees included the original instruments and each of the translations (T1, T2, T12 and T-tp), together with the corresponding written reports prepared by the translators.

In the fifth stage, a back-translation was elaborated by a different professional translator, whose mother tongue was the source language (English). He was neither aware nor informed of the constructs explored and had no academic training in psychology. The purpose here was to avoid information biases and increase the likelihood of highlighting translation deficiencies. Back-translation is viewed as an additional quality control check. In this particular case, back-translations were also prepared to allow for review of possible cultural changes by the developers of each instrument (see Appendix 8 for the Back Translation of CS-BR).
The sixth stage was *submission of the back-translation versions of PICCOLO-BR and CS-BR to their respective authors* for validation. Suggestions for improvement provided by the authors were incorporated into the final Brazilian-Portuguese versions.

The seventh stage was a *pilot study* designed to train Brazilian raters to utilize the scoring rubrics when assigning the scores generated by the adapted instruments, taking due account of the culture-specific behaviours observed in a small sample of Brazilian mother-child dyads. Seven film clips were independently double coded for the pilot study of the PICCOLO-BR measurement tool (raters: IG and AS). While 31 film clips were independently double coded for pretesting of the CS-BR measurement tool (raters: AS and TM). This stage was especially important for two reasons: as in-depth training for Brazilian raters and as a test of the cultural validity and appropriateness of the scoring rubrics to the Brazilian sample. The CS-BR scale pilot study led Brazilian raters and one of the instrument developers to observe that had the same criteria been used to rate the Canadian sample, it would have resulted in a floor effect, with a positively skewed distribution of scores in the Brazilian sample. We consulted with a range of experts in measurement development on this issue. As the rating of items in the Canadian scale was designed so that the mid-point of the response options represented an average Canadian parent, we adapted the Brazilian coding descriptions to ensure scores that were meaningful to the Brazilian sample. This was necessary for three out of 11 items (namely, items 1, 3 and 8) and allowed us to preserve the expected distribution of scores for the CS-BR scale.

Parallel to the cross-cultural adaptation stages above, a focus group of eight Brazilian health professionals was conducted in the city of Pelotas on November 17, 2016. The purpose of this focus group was to explore the knowledge and experience of health professionals regarding cultural values, customs and beliefs capable of impacting parenting behaviours in Brazil (see Appendix 9 for the Consent Form/Information Sheet for Practitioners – Focus Group, and Appendix 10 for the Focus Group Guide).

The outcome of the cross-cultural adaptation phase provided evidence of the content validity of the instruments developed in this study. However, when an instrument is adapted from one language and culture to another, additional testing of retention of the psychometric properties of the adapted version is required (i.e., reliability and validity). The Phase 2 methodology is described below.
2.2 Phase 2: Validation of the PICCOLO-BR Checklist and CS-BR Scale

This phase of the research was carried out in partnership with the Graduate Program in Epidemiology at the Federal University of Pelotas (Universidade Federal de Pelotas; UFPel), responsible for coordination of the Pelotas birth cohort studies in Southern Brazil. Briefly, the 2015 Pelotas cohort is a longitudinal, prospective study of all eligible children (4,275) born in the city of Pelotas between January 1 and December 31, 2015. This is the fourth generation of children monitored under the Pelotas Birth Cohort Program, the largest study of its kind in Latin America and one of the largest in the world. The 2015 cohort study was scheduled for implementation in stages designed to monitor maternal and child health, development, behaviours, nutrition and sociodemographic variables of the participants throughout their lives, starting from the gestational period. This cohort has been described in detail elsewhere (Hallal et al., 2017). In overall terms, the four Pelotas birth cohorts involve more than 20,000 participants with intervals of eleven years between groups. Periodic exams and interviews with the same people from four different generations at varied points in the life-cycle provide a unique opportunity to advance knowledge on determinant health factors during life, as well as to recommend prevention and treatment strategies (Centre for Epidemiological Research at UFPel., n.d.). The Authorization Letter signed by the PI of the 2015 Pelotas birth cohort study is found in Appendix 11.

2.2.1 Sample

Subjects were drawn from the 2015 Pelotas birth cohort. Based on the criteria elaborated for inclusion purposes, 395 children were identified as potential candidates in the data set of the 2015 Pelotas birth cohort. Eligibility criteria included Brazilian Portuguese-speaking primiparous or multiparous mothers and children born (a) full term with normal birth weight, (b) as singletons and (c) ages in the range of 18 months at the time of data collection (video of mother-child interaction). First contact was made by a trained interviewer by phone and a home visit was scheduled with those mothers willing to participate in the study and be filmed. One hundred and seventy-eight mothers were contacted and 23 (13%) refused to participate (four mothers no longer lived in Pelotas and 19 refused for other reasons). The sample was stratified by wealth quintiles, equal sized categories calculated according to household assets. Observational data
were collected for 156 mother-child dyads in both tasks. Film clips of 155 dyads were used to compute the factor analysis-internal consistency of the PICCOLO checklist (referred to as ‘sample’), while the assessment of the factor analysis-internal consistency of the CS scale encompassed 153 dyads (referred to as ‘sample’). A few film clips were excluded for technical reasons (duration of less than 5 or 10 minutes, third-party interference in the task, etc.). Interrater reliability subsamples included 39 dyads per instrument, representing 25% of the total sample. While intra-rater reliability subsamples included 30 film clips which were double coded by the primary rater with a time interval between 7 to 15 days. Mothers whose children reached 18-months of age were visited at home between October 1 and December 31, 2016 (children born from April 1 to June 31, 2015).

The children included in the sample were born at between 37.00 and 41.86 weeks of gestational age. Distribution of gestational age in the sample was normal with a mean of 39.42 (SD = 1.23). The number of girls was somewhat higher (55.5%) than the number of boys. Data were collected at ages between 17.51 and 18.82 months. Age distribution in the sample was normal with a mean of 17.91 months (SD = 0.27). Socio-economic levels were represented equally in the upper four quintiles with about 22% each, while the first quintile (the poorest) accounted for about 12% of the children.

2.2.2 Instruments

The Brazilian-Portuguese versions of the PICCOLO-BR and CS-BR parenting measurement instruments were used in Phase 2 of this study. Aside from these, the Oxford Neurodevelopment Assessment (OX-NDA; Fernandes, 2015), and a Stimulation Scale (Barros et al., 2010) were used for investigation of the convergent and discriminant validity of the aforementioned measurement tools.

PICCOLO-BR Version. Data for the PICCOLO-BR assessment were obtained during the Three Bag task, adapted from Fuligni and Brooks-Gunn (2013). The mother was instructed to sit on a yoga mat and play with her child during a 10-minute semi-structured play activity that was video recorded. The mother and child were given three cloth bags containing varied types of toys. The mother was instructed to open the bags in sequence from the first to the second and then to the third bag, without stipulating the time she should spend with each set of toys. Whenever the mother decided to change bags, both mother and child had to first put away the
toys from the previous bag. The mother was free to determine whether and when to transition from one bag to another and the extent to which she would guide the play activity instead of allowing the child to direct it. The first bag contained an age-appropriate wordless picture book culturally adapted to the Brazilian sample (title: Zuza e Arquimedes, by Eva Furnari, Paulinas Publishing Co.). The other two bags contained age-appropriate toys (Bag 2: kitchen set with stove, pots, pans and a gas canister; and Bag 3: plastic animals, a fence, and a truck). Appendix 12 presents the materials used to gather PICCOLO-BR data. Brazilian raters included two psychologists: one with a doctoral degree (IG, primary rater) and the other being a doctoral degree student (AS, second rater). The PICCOLO developers trained Brazilian raters for approximately 16 hours in total. Twelve hours were dedicated to the checklist content and purpose, coupled with descriptions of domains and items, followed by 4 hours of video recording practice using U.S. parent-child videos of the PICCOLO Training DVD (Roggman, Cook, Innocenti, Jump Norman, & Christiansen, 2013d). During the pilot-study stage, Brazilian raters performed a reliability exercise by completing seven additional hours of video practice using seven 10-minute clips of Brazilian mother-child interactions. The raters were instructed to watch the 10-minute film clip a single time, while taking notes. Working independently, the raters produced codes for 29 items, indexing affection (afeto, in Portuguese; seven items), responsiveness (responsividade, in Portuguese; seven items), encouragement (encorajamento, in Portuguese; seven items) and teaching (práticas educativas, in Portuguese; eight items) using a 3-point ordinal rating scale. The PICCOLO checklist provides domain scores (the sum of item scores per domain), as well as a total scale score (the sum of the domain scores).

**CS-BR Version.** Cognitive sensitivity was assessed through a challenging cooperative task adapted from Aguilar, O’Brien, August, Aoun, & Hektner (2001). The mother was instructed to sit on a yoga mat and play with her child for five minutes in a semi-structured play activity that was video recorded. The mother was instructed to teach her child to copy different patterns using a shape and colour sorter toy (see Appendix 13 for the toy used to collect data). Initially, the mother was to place a randomly selected shape of any colour whatsoever on any peg and then ask the child if he/she could do the same. Following that, the mother was instructed to choose specific shapes, place each shape on a different peg, and then ask the child if he/she could place identical shapes on top of hers. Finally, the mother had to choose specific colours, place each colour on a different peg, then ask the child if he/she could place the same colours on top of
hers. This task was designed to show how mothers teach children things that are a little beyond what the children can normally do by themselves. The Brazilian raters included two psychologists, working toward their doctoral degrees (primary rater: AS, second rater: TM). A developer of the CS scale and a Canadian expert coder trained the Brazilian raters for approximately 11 hours in total: three hours on use of the construct and descriptions of the individual CS items, coupled with eight hours of video practice using Canadian film clips of mother-child interaction. During the pilot-study stage, Brazilian raters performed a second reliability exercise by completing five additional hours of video practice using 31, five-minute clips of Brazilian mother-child interactions. Raters were directed to watch the five-minute film clip a single time and then use all available information to come up with a rapidly developed result based on general impressions. The prompt for rating each item of the adapted measurement was “Based on what you have seen, give your impression of how this caregiver would interact with his/her child on a day-to-day basis”. Working independently and using a 5-point Likert scale, ranging from 1 (‘Not at all true’ – ‘Nada verdadeiro/Discoordootalmente’, in Portuguese) to 5 (‘Very true’ – ‘Muito verdadeiro/Concordo totalmente’, in Portuguese), the raters generated codes on 11 items indexing communicative clarity (six items), mind reading (three items) and mutuality building (two items). The mean of the 11 items was calculated, yielding a range of scores on a 1 to 5 scale. The protocol in Brazilian-Portuguese approved by the authors is presented in Appendix 1.

**Oxford Neurodevelopment Assessment.** Developed by researchers at the University of Oxford, in England, the Oxford Neurodevelopment Assessment tool (OX-NDA; Fernandes, 2015) was designed to assess neurodevelopment in children aged 10 to 14 months. It was developed to be an international, population-based screening measurement tool by non-specialists, with an administration time between 20 and 30 minutes. In the 2015 Pelotas birth cohort, all children were evaluated at 12-months of age using the OX-NDA tool. The OX-NDA has 57 items and assesses nine domains: cognition (15 directly administered items; α = .68 ); fine and gross motor control (8 directly administered items; α = .61); language (8 directly administered items; α = .52); behaviour (7 examiner reported items; α = .78); executive function (3 directly administered items; α = .35); attention (5 caregiver reported items; α = .53); social-emotional reactivity (9 caregiver reported items; α = .68) and positive affection (2 caregiver reported items; α = .07). Internal consistency for the total scale score was acceptable, α = .80.
This instrument has a combination of directly administered items (34), items concurrently observed by the examiner (7), plus maternally reported items (16 items). The child’s performance on each item is reported on a 5-point scale. Higher scores represent enhanced functionality, with the exception of the social-emotional reactivity subscale in which higher scores reflect greater reactivity. Currently, a validation study of the Brazilian-Portuguese OX-NDA translated version is underway by Dr. Iná S. Santos and team at UFPel, in Brazil. Preliminary results showed a weak correlation with the gold standard for developmental assessment, i.e., the Bayley Scales of Infant and Toddler Development (Bayley, 2006) (A. Barros, personal communication, January 04, 2018). Given the goals of the current research, only OX-NDA scales with internal consistencies > .60 were used in the present study. The internal consistency criteria requested by the Brazilian Psychological Association for instruments reliability is an index over .60 (Guedes, Primi, & Kopelman, 2011). Scales with a Cronbach’s α coefficient lower than .60 are possibly not measuring the intended constructs.

**Five Stimulation Markers.** This scale was developed by Barros et al. (2010) to examine the extent to which children experienced a cognitively stimulating environment. The scale has been found to be related to child development outcomes, particularly amongst children whose mothers are low in education (Barros et al., 2010). Mothers answered no/yes (no=0, yes=1) to the following questions about their children’s activities in the past week: whether someone read or told a story to the child; whether their child went to a park or playground; whether the child had a story book; whether the child watched TV; whether the child visited anyone’s house. Items were summed.

**Gender.** Boys were coded 1 and girls were coded 2.

### 2.2.3 Data Collection Procedures

Data collection activities for Phase 2 of this study were embedded in the 2015 Pelotas birth cohort dataset collection process, in that Southern Brazilian city. Data included parent-reported questionnaires, direct testing of children and videos of mother-child interactions. Observational data on dyadic interactions and self-reported stimulation markers were collected during home visits between October 14 and December 5, 2016, when children had reached 18 months. Prior to data collection and at the start of the home visits, written informed consents
were obtained from all adults for their own and their children’s participation (see Appendix 15 for Consent Form/Information Sheet for Mothers).

A trained interviewer set up the camera in an unobtrusive location. The first step was to provide oral instructions on each task to the mothers and respond to their questions before getting underway. Only then did the interviewer begin monitoring the time. During the tasks, the interviewer’s interaction with the dyad was minimal. First off, before initiating the observational tasks, the mother-child dyads were videotaped at free play for 5 minutes in order to attenuate possible reactions on the part of the mothers to being filmed. After that, the Three Bag task was administered and the activities of all dyads were halted after 10 minutes, regardless of completion. The shape and colour sorter task was then administered and all pairs were stopped after 5 minutes, whether they had finished or not. The mothers answered a one-page questionnaire on stimulation markers before the home visit was terminated. A children’s book (Três Porquinhos, Coleção Era uma Vez, Publisher: Editora Girassol) was given to each dyad as a reward for their time and participation.

2.2.4 Data Coding Procedures

Three Brazilian raters participated in this study. The IG (primary rater) and AS (second rater) participated in PICCOLO checklist training at Utah State University in the US, from August 5 to 7, 2015. CS scale training took place at the University of Toronto in Canada, from September 26 to 30, 2016, with the participation of the AS (primary rater) and TM (second rater).

Before initiating the training and coding processes, the Brazilian raters had to complete certain preliminary steps. PICCOLO raters read the first three chapters of the PICCOLO User’s Guide (Roggman et al., 2013b), containing in-depth descriptions of items and how to score each of them using a 3-point ordinal rating scale. At the same time, the CS raters read the training manual (Prime et al., 2015b) of that scale and read a series of papers dealing with the concept. During the pilot-project, the developers of the two instruments were consulted for purposes of clarifying certain items. The raters had to achieve criterion before being allowed to code independently. The criterion used for independent coding in the PICCOLO was no more than three items with a one point difference, or just one item with a two point difference and another with a one point difference within any domain (Roggman et al., 2013b). The minimum level of
IRR recommended by the PICCOLO authors for practitioners is 75%. For the CS scale, independent coding was done once raters had achieved $\alpha > .80$.

Coding was done independently by the raters of each instrument and subsequently verified by them at intervals of every fourth video, as they double coded 25% of cases for IRR. This procedure was adopted throughout the coding period to prevent observer drift away from the original coding definitions. Discrepancies were systematically discussed by the PICCOLO and CS raters with the aim of improving the rating process in each subsequent round. On three different occasions during the coding period, CS raters perceived discrepancies of more than 2 points in a 5-point Likert scale at the item level. To avoid rater drift and enhance their understanding of item descriptions, they formally consulted with an expert Canadian coder for clarification purposes. Insofar as the coding of PICCOLO is concerned, the two raters discussed the ratings of every single video in the IRR subsample using the manual as the parameter for resolving disagreements. In this case, discrepancies were not discussed with an expert outside PICCOLO coder.

2.3 Ethical Considerations

The research proposal was reviewed and approved by two Research Ethics Boards (REB) prior to commencement. The Social Sciences, Humanities and Education REB of the University of Toronto, Canada, approved the study (Protocol Reference # 33024), while the School of Medicine Ethics Committee at the UFPel, in Brazil, also granted its approval (CAAE registration number: 58999316.1.0000.5317). The ethics protocols are presented in Appendices 16 and 17 respectively.

This study was conducted within the scope of the ethical standards required by Resolution 466/2012, issued by the Brazilian National Council of Health / National Commission of Ethics in Research (CONEP) and the CEP/CONEP System (Research Ethics Committees and the National Commission of Ethics in Research). Participants were fully informed on the procedures and general objectives of the study, the voluntary nature of their and their children’s participation, their right not to participate, their right not to answer specific questions and the confidentiality of any and all information provided by them. They were also informed of any possible risks and benefits of their participation. Portuguese language informed consent forms
were signed by all participants who decided to take part in this study and copies of this document were given to all of them.

The privacy and confidentiality of study participants were protected by identifying videos solely by numbers unrelated to the participating families, while the interviewers were fully trained in procedures for protecting the information provided by participants, securely storing videos (on a password protected hard drive kept in a locked room with restricted access). Observation took place in a secure private room to which only trained observers had access, and the videos will be destroyed five years after conclusion of the study.

2.4 Statistical Analysis

Statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS, Inc, Chicago, IL, USA) for Windows (version 21.0; Microsoft Corporation, Redmond, WA, USA), and the Stata® version 13.0 software. Data analysis initially examined inter- and intra-rater reliability, followed by descriptive statistics and confirmatory and exploratory factor analyses to investigate the factor structure of the Brazilian-Portuguese version of the instruments, as well as the internal consistency of the adapted versions. Next, estimates of convergent and discriminant validity were computed using correlational analysis.

2.4.1 PICCOLO-BR Scores in the Brazilian Sample

Weighted kappa and percentage of absolute agreement were the methods used to compute inter- and intra-rater reliability. Weighted kappa represents agreement corrected for chance and takes the ordinal nature of the PICCOLO rating scale into account, while regular kappa is used to assess IRR for nominal (i.e., categorical) variables (Cohen, 1968). In line with the design of this study, weighted kappa can only accommodate two raters. Although kappa has been criticized (Brown Waesche et al., 2011; Flight & Julious, 2015; Xu & Lorber, 2014), it is a very widely used reliability statistic for ordinal data. The guidelines that determine the relative strength of agreement associated with kappa statistics are as follows: less than 0.00 is poor; from 0.00 to 0.20 is slight; from 0.21 to 0.40 is fair; from 0.41 to 0.60 is moderate; from 0.61 to 0.80 is substantial; and from 0.81 to 1.00 is nearing perfect (Landis & Koch, 1977). Since weighted kappa cannot be computed directly in SPSS, it was computed in this study through the use of cross tabulations prepared in SPSS employing an online calculator.
In addition to weighted kappa, the percentage of absolute agreement between the two raters was also computed. Although percent agreement statistics are not recommended as a measurement of IRR (Crocker & Algina, 2008; Frick & Semmel, 1978; Hallgren, 2012), since they do not offset expected chance agreements, we nevertheless computed this index for purposes of comparing the IRR estimates in the Brazilian sample to the originally reported English language version of the instrument (Roggman et al., 2013a). Here, one should stress once again that the PICCOLO checklist was designed as a useful measurement tool for practitioners working with individual families in the field. Thus, the authors’ main objective was to use an informative agreement index, such as percentage of absolute agreement, that can at one and the same time be calculated and understood by practitioners in the field.

Exploratory factor analyses were performed to investigate the structure of the PICCOLO-BR instrument. These analyses were based on a matrix of polychoric correlations that are appropriate for ordinal variables (individual items measured on a 3-point scale). Principal axis factoring was used as the extraction method in EFA analyses. Cronbach’s alpha coefficient (Cronbach, 1951) was used to measure internal consistency or the degree to which items within the same domain correlated with one another and for the entire set of 29 items. The PICCOLO-BR scores for each of the four domains and the total score were correlated with other measures for purposes of evaluating convergent and discriminant validity. The statistical methods used were the Pearson Product-Moment Correlation coefficient for continuous variables, the Point-Biserial Correlation coefficient for binary (0/1) measures and Spearman’s Correlation for ordinal measures. With regard to convergent validity, the correlations between PICCOLO-BR scores and (a) the Five Stimulation Markers, (b) the OX-NDA Cognition subscale, (c) the OX-NDA Motor subscale, (d) the OX-NDA Socio-Emotional Reactivity subscale, and (e) the total OX-NDA score were computed. For discriminant validity, the correlations between PICCOLO-BR scores and gender were investigated.

2.4.2 Cognitive Sensitivity-BR Scores in the Brazilian Sample

Although the individual CS items use a five-point ordinal Likert scale, CS rating categories represent an underlying continuum along a unidimensional and coherent construct (Prime et al., 2015a). At the same time, there is an assumption that the data underlying item responses are distributed normally. Therefore, the Pearson correlation coefficient, a consistency
estimate of IRR (Stemler, 2004), was chosen as the statistical method to be utilized in inter- and intra-rater reliability analyses. Recalling that values greater than .70 are typically acceptable for consistency estimates of IRR (Barrett, 2001), it is important to note that the Pearson correlation coefficient shows the linear relationship between two sets of data and can only be calculated for one pair of raters at a time and for one item at a time. The index ranges in value from – 1 to + 1. This coefficient indicates the degree to which low or high scores on one variable tend to accompany low or high scores on another variable (Green & Salkind, 2014). The magnitude of the correlation coefficient is impacted by distribution of observed ratings, i.e. if most of the ratings fall into one or two categories, the correlation coefficient will necessarily be deflated due to its limited variability - as a function of data distribution - as opposed to being deflated due to problems in the scoring rubric or rater training (Stemler, 2004).

Investigating the underlying structure of the Portuguese version of the scale, EFA was performed and followed by CFA. For items scored on a Likert-point scale, the matrix of polychoric correlations and the principal axis factoring extraction method are appropriate. Only eigenvalues greater than 1 are considered indicative of potential factor or domain in the solution (Perlman, Brunsek, Hepditch, Gray, & Falenchuck, 2017). Principal axis factoring was used as the extraction method in EFA analyses.

The next step was to calculate the internal consistency of the CS-BR scale using Cronbach’s alpha coefficient. The composite score of CS-BR was correlated with other measurements to evaluate criteria validity. For convergent validity, correlations between the CS-BR scale score and (a) the Five Stimulation Markers, (b) the OX-NDA Cognition subscale, (c) the OX-NDA Motor subscale, (d) the OX-NDA Socio-Emotional Reactivity subscale, and (e) the total OX-NDA score were computed. For discriminant validity, the correlation between the CS-BR scale score and gender was investigated. The statistical methods used were the Pearson Product-Moment Correlation coefficient for continuous variables, the Point-Biserial Correlation coefficient for binary (0/1) measurements and Spearman’s Correlation for ordinal measurements.
Chapter 3
Results

3.1 Phase 1: The Cross-Cultural Adaptation

3.1.1 PICCOLO Checklist

For reasons of greater clarity, the full name of the measurement tool in English (Parenting Interactions with Children: Checklist of Observations Linked to Outcomes) was somewhat altered in the Portuguese version to facilitate understanding among Brazilian users (Interações parentais com crianças: Checklist de observações associadas ao desenvolvimento infantil, corresponding to the English language title: ‘Parenting Interactions with Children: Checklist of Observations Associated with Child Development’). In English, the fourth PICCOLO domain is called ‘teaching’. In Portuguese, it was translated as ‘educational practices’ (práticas educativas), since the noun ‘teaching’ in Brazilian-Portuguese refers more to the occupation or teaching profession, while ‘educational practices’ encompasses cognitive stimulation, shared conversations and play in an informal relationship and setting. Consequently, this change is conceptually justified.

The original PICCOLO protocol uses the word ‘parent’ before describing each behavioural item, while the Brazilian-Portuguese version adopted the expression ‘caregiver’ (cuidador). A description of ‘caregiver’ (“The caregiver refers to the mother, father or another person who systematically interacts with the child”) was inserted as a footnote on the first page of the adapted protocol. This change was justified on two grounds: (a) in English, the word ‘parent’ refers to the father or mother or both when used in the plural and has no equivalent word in Portuguese which uses separate and distinct words for each parent, and (b) many Brazilian children, especially from low-socioeconomic strata, are not raised by their parents, but by other relatives.

Instructions for coding were rewritten and expanded in the PICCOLO-BR protocol to provide more comprehensive and objective directions to Brazilian raters. For instance, to distinguish clearly between simple and complex behaviours, two footnotes on the terms
‘broadening of ideas’ (*amplaçães*), and ‘sequences’ (*sequências*) were added to the PICCOLO-BR protocol. The 3-point ordinal rating scale was also expanded somewhat in the adapted instrument, especially for categories 1 (‘Barely’) and 2 (‘Clearly’). While the original checklist has three adjectives for describing each of those categories, the Portuguese version included one more, i.e., total of four.

During the pilot-study, when raters pretested the instrument on the target population, they perceived a need for defining the cultural adaptation parameters to be used as guides for Brazilian observers. Cultural adaptation notes for 15 of the 29 PICCOLO-BR items were synthesized. The notes include examples of parental behaviours observed in the Brazilian sample, as well as agreements between the two raters aimed at enhancing rating consistency. PICCOLO developers revised the new guidelines and incorporated their recommendations. Even though the PICCOLO authors generally discourage counting behaviours in order to rate them, they recently elaborated scoring definitions for another measurement tool (Roggman et al., 2017) that are consistent with the guidelines developed by Brazilian raters for PICCOLO-BR. For instance, the rating scale of the new measurement tool encompasses: (a) frequently (describing behaviours almost always observed or repeatedly observed, rarely missing opportunities for such behaviours. Though frequently is sometimes interpreted as three or more times, event counting is not required for reliable observations), (b) occasionally (describing behaviours observed a few times, but usually not more than three), and (c) rarely (describing behaviours almost never observed. Such behaviours are usually observed just once and perhaps a second time in a very minor, brief or somewhat dubious manner).

As a closing remark for this phase, one should stress that the PICCOLO-BR version was developed taking due account of the need for simple, clear and concise language designed to attain the broadest possible use and understanding of the checklist by home visitors and families of various SES backgrounds. The original PICCOLO checklist was designed for use by home visitors and primary care practitioners as typical raters and the results were to be shared with families. Thus, technical terms should be avoided. The only exception is the term ‘responsiveness’ (corresponding to the name of the second PICCOLO domain), a concept studied by psychologists in Brazil. The PI and the expert committee members judged that keeping this term in the Portuguese version would be beneficial to expanding Brazilian raters’ knowledge of this important interactional process underlying child development.
3.1.2 Cognitive Sensitivity Scale

Four key adaptations were made during development of the CS-BR version. First of all, the term ‘parent’ was replaced by ‘caregiver’, for the same reasons highlighted above for PICCOLO-BR. Secondly, in Portuguese, ‘mind-reading’ was translated as ‘thought-reading’ (*leitura de pensamento*) in order to preserve conceptual equivalence. Thirdly, definitions of the scoring rubrics of the CS-BR version were expanded to include a specific rubric for score 3 (‘Sometimes true/I partially agree’) and descriptions of scores 1 and 5 of the Likert-scale gained one more expression (i.e., 1 = ‘Not at all true/I totally disagree’; 5 = ‘Very true/I totally agree’). Fourth, additional instructions for Brazilian raters were elaborated for five of the 11 items in the pilot-study stage (see Appendix 18). The main objective of the additional notes was to adapt this measurement tool, both culturally and psychometrically, for use with the local population. At the same time, examples of culture-specific behaviours were provided.

3.1.3 Focus Group with Health Professionals

The objective was to take advantage of the knowledge and experience garnered by health professionals with respect to cultural values, customs and beliefs that could potentially impact parenting behaviours in Brazil. Participants stressed that, in general, Brazilians are considered emotive and affectionate parents. The most important activities Brazilian parents engage in with their up to two-year old children are breastfeeding, nourishment to meet physiological needs, affectionate gestures targeted to their children and protection. Less commonly observed parental behaviours are active play with the child and shared book reading. Possible underlying reasons may be scarce financial resources, limited free time and deficient understanding of the importance of this kind of cognitive stimulation during the early years of life.

Use of technological devices, such as mobile phones and tablets, has been observed in different social classes as a new kind of ‘electronic babysitter’ that clearly upsets the process of parent-child interactions. Moreover, Brazilian families - particularly those in the lower socioeconomic strata - spend a lot of time watching TV. Health professionals have stressed that social contexts have changed significantly in the last decade as a result of drug trafficking, social violence and crime in general. This reality has forced parents and children to spend more time at home, engaged in technology-based individual activities instead of going out and playing.
together. Playing in parks or playgrounds or even trips to the beach and other similar activities have clearly waned, further reducing family interaction with nature.

The limited time available to caregiving adults may well generate feelings of insecurity among young children, as often mentioned by participants. Notwithstanding this scenario, health professionals tend to believe that family ties and the role of the family in general have been preserved and are still one of the cornerstones of Brazilian society as a whole. However, they also note that children are never left alone in high-SES families, while the offspring of low-SES families are often unaccompanied in their formative years and must fend for themselves and their siblings.

During the first year of life, co-sleeping is considered a normative behaviour in Brazilian culture. In low-SES families, it may also be related to lack of space and protection against winter cold in the Southern region of the country. Health professionals, however, warn parents not to share a bed with their baby in order to reduce the risk of sudden infant death syndrome.

The average population is marked by low expectations regarding standards of living and reveal behaviours often marked by intense passivity and conformity. According to participants, this reality is rooted in low levels of education and the insufficient income levels of a major share of the population. Getting pregnant and having a baby may well be a way of getting away from the parents’ house, discontinuing education and (supposedly) achieving a change in status, mainly among low-SES families. Though birthrates are declining in Brazil, there is still an inordinate number of unplanned pregnancies, a reality that would certainly seem to impact the quality of parent-child interaction.

The qualitative data gathered from the focus group highlighted various sociocultural aspects that may impact parent-child interactions in Brazilian society, especially in the Southern region. First of all, the central value of family ties and maintenance of bonds of interdependence are recognized as key cultural elements. Secondly, the expression of emotions is viewed as normative behaviour among Brazilians. Third, the almost unprecedented levels of income disparity between a relatively small dominant elite class and a huge segment of the population that survives despite terribly precarious conditions have direct implications in terms of differentiated parental practices and expectations regarding their role in child development.
Fourth, sensitive cognitive stimulation in the first years of a child’s life is rarely encountered, more than likely due to a lack of information and/or environmental risk factors (poverty, neighborhood violence, low access to quality education, the low status of children mainly in low-SES families). These cultural environment elements reinforce the need for measurement tools designed to assess positive parent-child interactions focused on early responsivity. Instruments such as PICCOLO and the CS scale provide scientific and standardized tools that are culturally suitable and necessary to demonstrating parenting strengths (PICCOLO) and how sensitive in the cognitive domain (CS scale) Brazilian parents have been in relation to their children.

3.2 Phase 2: The Validation Process

Investigation of the psychometric properties of the PICCOLO-BR checklist and CS-BR scale included examination of reliability estimates (inter- and intra-rater reliability, coefficient alphas) and different types of validity (construct, convergent and discriminant validity). Initially, the score distribution, mean and standard deviation of each instrument in the Brazilian sample are discussed.

3.2.1 Time Management for PICCOLO-BR and CS-BR Versions

Coding each mother-child dyad interaction with the PICCOLO-BR checklist took approximately 60 minutes in this study, broken down as 10 minutes to watch the film clip a single time and 50 minutes to generate ratings for each of the 29 items. Shifting to the CS-BR scale, coding lasted a total of 10 minutes, five minutes to watch the video record and an additional five minutes to code the 11 items, using the thin slice judgement methodology of impressionistic ratings.

3.2.2 Psychometric Properties of the PICCOLO-BR Scores in Brazilian Sample

Table 2 presents the frequencies of behaviours exhibited by mothers. Each item was scored 0-2. A normal distribution is seen for all items with the means ranging from 1.17- 1.83 (SDs .38 -.80). No floor or ceiling effect was evident for any individual items. The most frequently observed behaviours on the affection domain were items 1 and 4 (‘speaks in a warm tone of voice’, and ‘is physically close to child’), with items 3 and 5 (‘praises the child’ and ‘uses positive expressions with child’) being the least frequently observed. The most frequently seen
responsiveness behaviours were items 1 and 7 (‘pays attention to what child is doing’, and ‘replies to child’s words or sounds’), with items 3 and 2 (‘is flexible about child’s change of activities or interests’, and ‘changes pace or activity to meet child’s interests or needs’) being the least frequently observed. The most frequent behaviours on the encouragement domain were items 2 and 1 (‘encourages child to handle toys’, and ‘waits for child’s response after making a suggestion’), with items 3 and 5 (‘supports child in making choices’, and ‘verbally encourages child’s efforts’) being the least frequently seen. The most frequently observed teaching behaviours were items 4 and 2 (‘labels objects or actions for child’, and ‘suggests activities to extend what child is doing’), with items 6 and 1 (‘does activities in a sequence of steps’, and ‘explains reasons for something to child’) being the least frequently seen teaching behaviours.
Table 2 *Descriptive Statistics of the PICCOLO Items in the Brazilian Sample*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affection</td>
<td>1. Speaks in a warm tone of voice</td>
<td>1.77</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>2. Smiles at child</td>
<td>1.32</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>3. Praises child</td>
<td>1.17</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>4. Is physically close to child</td>
<td>1.78</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>5. Uses positive expressions with child</td>
<td>1.25</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>6. Is engaged in interacting with child</td>
<td>1.68</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>7. Shows emotional warmth</td>
<td>1.57</td>
<td>0.64</td>
</tr>
<tr>
<td>2. Responsiveness</td>
<td>1. Pays attention to what child is doing</td>
<td>1.77</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>2. Changes pace or activity to meet child’s interests or needs</td>
<td>1.41</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>3. Is flexible about child’s change of activities or interests</td>
<td>1.27</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>4. Follows what child is trying to do</td>
<td>1.49</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>5. Responds to child’s emotions</td>
<td>1.43</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>6. Looks at child when child talks or makes sounds</td>
<td>1.52</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>7. Replies to child’s words or sounds</td>
<td>1.61</td>
<td>0.59</td>
</tr>
<tr>
<td>3. Encouragement</td>
<td>1. Waits for child’s response after making a suggestion</td>
<td>1.57</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>2. Encourages child to handle toys</td>
<td>1.83</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>3. Supports child in making choices</td>
<td>1.25</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>4. Supports child in doing things on his or her own</td>
<td>1.30</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>5. Verbally encourages child’s efforts</td>
<td>1.28</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>6. Offers suggestions to help child</td>
<td>1.56</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>7. Shows enthusiasm about what child is doing</td>
<td>1.48</td>
<td>0.65</td>
</tr>
<tr>
<td>4. Teaching</td>
<td>1. Explains reasons for something to child</td>
<td>1.35</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>2. Suggests activities to extend what child is doing</td>
<td>1.74</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>3. Repeats or expands child’s words or sounds</td>
<td>1.59</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>4. Labels objects or actions for child</td>
<td>1.79</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>5. Engages in pretend play with child</td>
<td>1.61</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>6. Does activities in a sequence of steps</td>
<td>0.67</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>7. Talks to child about characteristics of objects</td>
<td>1.57</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>8. Asks child for information</td>
<td>1.59</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Overall, the score distributions of the PICCOLO items in the Brazilian sample showed sufficient frequency in each of the scoring categories of individual items (see Appendix 19 for
PICCOLO item distribution per category in the Brazilian sample) allowing for further examination of the reliability and validity of this instrument. Following the methodology described by Roggman et al. (2013a), total scale scores and domain scores were computed even before establishment of the psychometric properties of the PICCOLO-BR version.

**Inter-Rater Reliability.** The IRR values computed using two different methods (weighted kappa and absolute agreement percentage) for the 29 PICCOLO items and per domain are reported in Table 3. As seen in this table, average weighted kappa across all items in the Brazilian sample was 0.40, indicating a fair level of agreement. Average weighted kappa for the affection domain was 0.52 (0.41 to 0.65), followed by an average of 0.41 (0.25 to 0.65) for the responsiveness domain, 0.28 (0.02 to 0.58) for the encouragement domain and 0.40 (0.28 to 0.65) for the teaching domain. Of the 29 items, three items fell into the category of slight agreement (solely from the encouragement domain), 13 items fell into the category of fair agreement (mostly from the teaching domain), nine items showed moderate agreement (mainly from the affection domain), and four items were in the substantial agreement range (principally from the affection domain) according to weighted kappa.

Percent of absolute agreement for individual PICCOLO items in the Brazilian sample ranged between 44% and 90%, thus overlapping with the range (from 61% to 95%) reported by Roggman and colleagues (2013a). The average of the Brazilian sample is 67%, compared to 75% for Roggman and collaborators (2013a). These average values of absolute agreement are quite comparable, though the Brazilian sample showed a broader range of absolute agreement for individual PICCOLO items at the lower end.
<table>
<thead>
<tr>
<th>Domains and Items</th>
<th>Weighted Kappa</th>
<th>Percent Absolute Agreement (%)</th>
<th>Percent Absolute Agreement (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in Brazilian Sample</td>
<td>in US Sample</td>
<td>(Roggman et al., 2013a)</td>
</tr>
<tr>
<td><strong>Affection</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Speaks in a warm tone of voice</td>
<td>0.57</td>
<td>85</td>
<td>89</td>
</tr>
<tr>
<td>2. Smiles at child</td>
<td>0.46</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>3. Praises child</td>
<td>0.44</td>
<td>59</td>
<td>70</td>
</tr>
<tr>
<td>4. Is physically close to child</td>
<td>0.61</td>
<td>90</td>
<td>95</td>
</tr>
<tr>
<td>5. Uses positive expressions with child</td>
<td>0.65</td>
<td>74</td>
<td>73</td>
</tr>
<tr>
<td>6. Is engaged in interacting with child</td>
<td>0.41</td>
<td>74</td>
<td>87</td>
</tr>
<tr>
<td>7. Shows emotional warmth</td>
<td>0.49</td>
<td>74</td>
<td>69</td>
</tr>
<tr>
<td><strong>Responsiveness</strong></td>
<td>0.41</td>
<td>63</td>
<td>76</td>
</tr>
<tr>
<td>1. Pays attention to what child is doing</td>
<td>0.35</td>
<td>74</td>
<td>92</td>
</tr>
<tr>
<td>2. Changes pace or activity to meet child’s interests or needs</td>
<td>0.25</td>
<td>49</td>
<td>67</td>
</tr>
<tr>
<td>3. Is flexible about child’s change of activities or interests</td>
<td>0.48</td>
<td>64</td>
<td>78</td>
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<td>4. Follows what child is trying to do</td>
<td>0.45</td>
<td>72</td>
<td>73</td>
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<td>5. Responds to child’s emotions</td>
<td>0.31</td>
<td>59</td>
<td>64</td>
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<td>6. Looks at child when child talks or makes sounds</td>
<td>0.36</td>
<td>59</td>
<td>76</td>
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<td>7. Replies to child’s words or sounds</td>
<td>0.65</td>
<td>64</td>
<td>78</td>
</tr>
<tr>
<td><strong>Encouragement</strong></td>
<td>0.28</td>
<td>61</td>
<td>73</td>
</tr>
<tr>
<td>1. Waits for child’s response after making a suggestion</td>
<td>0.28</td>
<td>51</td>
<td>61</td>
</tr>
<tr>
<td>2. Encourages child to handle toys</td>
<td>0.02</td>
<td>74</td>
<td>90</td>
</tr>
<tr>
<td>3. Supports child in making choices</td>
<td>0.40</td>
<td>67</td>
<td>72</td>
</tr>
<tr>
<td>4. Supports child in doing things on his or her own</td>
<td>0.18</td>
<td>62</td>
<td>82</td>
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<tr>
<td>5. Verbally encourages child’s efforts</td>
<td>0.28</td>
<td>44</td>
<td>67</td>
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<tr>
<td>6. Offers suggestions to help child</td>
<td>0.17</td>
<td>56</td>
<td>67</td>
</tr>
<tr>
<td>7. Shows enthusiasm about what child is doing</td>
<td>0.58</td>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td><strong>Teaching</strong></td>
<td>0.40</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td>1. Explains reasons for something to child</td>
<td>0.35</td>
<td>59</td>
<td>76</td>
</tr>
<tr>
<td>2. Suggests activities to extend what child is doing</td>
<td>0.28</td>
<td>72</td>
<td>61</td>
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<tr>
<td>3. Repeats or expands child’s words or sounds</td>
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<td>4. Labels objects or actions for child</td>
<td>0.31</td>
<td>79</td>
<td>74</td>
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<tr>
<td>5. Engages in pretend play with child</td>
<td>0.65</td>
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<td>66</td>
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<tr>
<td>6. Does activities in a sequence of steps</td>
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<td>71</td>
</tr>
<tr>
<td>7. Talks to child about characteristics of objects</td>
<td>0.37</td>
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<td>69</td>
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<td>8. Asks child for information</td>
<td>0.48</td>
<td>77</td>
<td>68</td>
</tr>
<tr>
<td><strong>Average across all items</strong></td>
<td>0.40</td>
<td>67</td>
<td>75</td>
</tr>
</tbody>
</table>
Further examination of IRR data shows that when the two Brazilian raters disagreed on the assigned scores, the discrepancy reflected only one point on the scale in most situations. Only rarely did situations arise in which one rater did not observe a specific behaviour, while the other found it to be consistently present (2 points off).

**Intra-Rater Reliability.** Table 4 shows the intra-rater reliability estimates obtained using the weighted kappa and absolute agreement percentage methods.
Table 4 *Intra-Rater Reliability Results for Items on the PICCOLO Checklist in the Brazilian Sample*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Item</th>
<th>Weighted Kappa</th>
<th>Percent Absolute Agreement (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affection</td>
<td></td>
<td>0.73</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>1. Speaks in a warm tone of voice</td>
<td>0.92</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>2. Smiles at child</td>
<td>0.60</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>3. Praises child</td>
<td>0.80</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>4. Is physically close to child</td>
<td>0.67</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>5. Uses positive expressions with child</td>
<td>0.76</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>6. Is engaged in interacting with child</td>
<td>0.71</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>7. Shows emotional warmth</td>
<td>0.63</td>
<td>80</td>
</tr>
<tr>
<td>2. Responsiveness</td>
<td></td>
<td>0.63</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>1. Pays attention to what child is doing</td>
<td>0.63</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>2. Changes pace or activity to meet child’s interests or needs</td>
<td>0.62</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>3. Is flexible about child’s change of activities or interests</td>
<td>0.74</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>4. Follows what child is trying to do</td>
<td>0.86</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>5. Responds to child’s emotions</td>
<td>0.65</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>6. Looks at child when child talks or makes sounds</td>
<td>0.57</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>7. Replies to child’s words or sounds</td>
<td>0.34</td>
<td>77</td>
</tr>
<tr>
<td>3. Encouragement</td>
<td></td>
<td>0.43</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>1. Waits for child’s response after making a suggestion</td>
<td>0.32</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>2. Encourages child to handle toys</td>
<td>0.21</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>3. Supports child in making choices</td>
<td>0.54</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>4. Supports child in doing things on his or her own</td>
<td>0.69</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>5. Verbally encourages child’s efforts</td>
<td>0.40</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>6. Offers suggestions to help child</td>
<td>0.18</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>7. Shows enthusiasm about what child is doing</td>
<td>0.67</td>
<td>83</td>
</tr>
<tr>
<td>4. Teaching</td>
<td></td>
<td>0.50</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>1. Explains reasons for something to child</td>
<td>0.23</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>2. Suggests activities to extend what child is doing</td>
<td>0.45</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>3. Repeats or expands child’s words or sounds</td>
<td>0.34</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>4. Labels objects or actions for child</td>
<td>0.45</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>5. Engages in pretend play with child</td>
<td>0.69</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>6. Does activities in a sequence of steps</td>
<td>0.36</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>7. Talks to activities in a sequence of steps</td>
<td>0.79</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>8. Asks child for information</td>
<td>0.73</td>
<td>87</td>
</tr>
<tr>
<td>Average across all items</td>
<td></td>
<td>0.57</td>
<td>79</td>
</tr>
</tbody>
</table>
As shown in Table 4, weighted kappa values range widely from slight agreement at 0.18 to 0.92, indicating almost perfect agreement. Across all items, average kappa is 0.57, falling into the range of moderate agreement. The average percentage of absolute agreement is 79%, reflecting a good level of agreement. The percentage of absolute agreement ranges between 50% and 97% for individual PICCOLO items. As demonstrated in the table above, the main rater agreed with her own earlier scoring on item 1 in the teaching domain in only half the videos, while she agreed with her own earlier scoring on almost every video under item 1 in the affection domain. Further examination of intra-rater reliability data indicates that, in most cases, when the primary rater disagrees with her own previous scores, the discrepancies are usually limited to just one category of the scale. This means that she sometimes perceived and rated a behaviour as “Absent” (score 0) or “ Barely” (score 1), or as “ Barely” (score 1) or “ Clearly” (score 2), only to change her perception by just one point in the second rating.

To identify potential problems of consistency in item scores (whether the same items showed consistently lower scoring reliability), we correlated the weighted kappa and absolute agreement percentage values for intra-rater reliability and IRR for individual PICCOLO items. A high degree of correlation between intra-rater reliability and IRR indexes would indicate that same items tend to have lower consistency of scoring. The correlation between intra-rater reliability and IRR weighted kappa indexes was moderately strong \( r = .54, p < .001 \), while the correlation between percentage of absolute agreement under intra-rater reliability and IRR samples was \( r = .76 (p < .001) \), pointing to a strong relationship between the two sets of indexes, thus evincing the fact that the same PICCOLO items had lower levels of scoring consistency. The items that posted consistently lower reliability between raters and for primary rater were items 5 and 6 in the encouragement domain, and items 1 and 6 in the teaching domain. One concludes, therefore, that these four items require further analysis of the extent to which the observational guidelines apply to the Brazilian sample, the frequencies of these behaviours in the Brazilian sample, their significance in Brazilian culture and how they are observed in the Brazilian sample. In contrast, items 1 and 4 in the affection domain, and item 8 in the teaching domain showed strong scoring consistency between raters and for the primary rater individually.

**Inter-Rater Reliability of Scale Scores.** Total scores for affection, responsiveness, encouragement and teaching were calculated for each rater. The correlations between the two raters for each domain were as follows: affection \( r = .77 \), responsiveness \( r = .65 \),
encouragement ($r = .63$), and teaching ($r = .69$). For the total score reliability was $r = .76$. Thus, adequate levels of reliability were obtained for all scales.

**Intra-Rater Reliability of Scale Scores.** Total scores for affection, responsiveness, encouragement and teaching were calculated for the primary rater at time 1 and time 2. The intra-rater correlations for each domain were as follows: affection ($r = .92$), responsiveness ($r = .88$), encouragement ($r = .83$), and teaching ($r = .85$). For the total score reliability was high ($r = .92$). Thus, intra-rater reliability was high for all scales.

**Factorial Structure.** Confirmatory factor analyses (CFA) were conducted to investigate whether the structure of the PICCOLO checklist, as suggested in the English version, applies to each of the four domains and whether these four domains are distinct from one another in the Portuguese version. The results of the CFA for each of the four domains are presented in Table 5. This table contains model fit indices - the Comparative Fit Index (CFI; Bentler, 1990), the Tucker-Lewis Index (TLI), and the Root-Mean-Square Error of Approximation (RMSEA; Stieger, 1998) - for each of the four CFA analyses, as well as the item loadings of the individual items within each domain. For comparative purposes with the English version of the PICCOLO checklist, the item loadings from the CFA analyses reported by Roggman and her associates (2013a) were also included in the table.

As evident in Table 5, the model fit indices showed good results only for the teaching domain (CFI and TLI > 0.95, and RMSEA < 0.05) in the Brazilian sample. However, one should stress that the values for the other three domains of the three indices are also quite close to the cut-offs for a good fit. At the same time, the factor loadings are greater than the acceptable minimum of 0.40 (Matsunaga, 2010) for all items except item 5 in the affection domain. Examination of model modification indices reveals that the model fit could have been improved by introducing covariances (correlations) between individual items, indicating that some of the items are correlated at a very high level with one another.
Table 5 Confirmatory Factor Analysis Results for the PICCOLO-BR Checklist and Item Loadings in the Brazilian and US Samples

<table>
<thead>
<tr>
<th>Domain</th>
<th>Item loading (Brazilian sample)</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>Item loading (US sample; Roggman et al., 2013a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affection</td>
<td></td>
<td>0.96</td>
<td>0.93</td>
<td>0.09</td>
<td>0.74</td>
</tr>
<tr>
<td>2. Responsiveness</td>
<td></td>
<td>0.91</td>
<td>0.86</td>
<td>0.14</td>
<td>0.62</td>
</tr>
<tr>
<td>3. Encouragement</td>
<td></td>
<td>0.93</td>
<td>0.89</td>
<td>0.12</td>
<td>0.65</td>
</tr>
<tr>
<td>4. Teaching</td>
<td></td>
<td>0.99</td>
<td>0.98</td>
<td>0.04</td>
<td>0.67</td>
</tr>
</tbody>
</table>

The CFA analysis across all 29 PICCOLO items shows poor model fit (CFI = 0.783, TLI = 0.761, RMSEA = 0.097), indicating that the structure with four distinct domains is not supported for this instrument. Examination of modification indices shows that cross-loadings of the items across the domain would improve the model fit. More specifically, the highest value for the modification index (98.71) occurred in the relationship between item 7 in the responsiveness domain and item 3 in the teaching domain, demonstrating that these items may
well be measuring the same behaviours and are therefore redundant. Other modification indices ranged between 20.55 and 3.86.

The CFA results for the Brazilian sample confirm the findings of the English version. Much the same as the CFA results in the Brazilian sample, Roggman and colleagues (2013a) report a poor fit for the four distinct domains model (RMSE = .12). However, the intention of the PICCOLO authors was to test the structure of the four-predicted theory-based domains and not to prove they are completely distinct from one another. Therefore, the authors examined a single factor structure for each domain separately, and the data met the criteria to support it (L. A. Roggman and G. Cook, personal communication, May 11, 2017). The factor loadings of individual items within each of the four domains are comparable across the English and Portuguese versions of PICCOLO.

Based on the CFA results, it was hypothesized that the PICCOLO checklist might have a unidimensional structure. To further investigate this, EFA were conducted based on the matrix of polychoric correlations. Principal axis factoring was used in EFA analyses as an extraction method. The initial exploratory run extracted five factors with eigenvalues greater than 1, indicating a possible five-dimensional structure. Together, these factors explained 73.3% of variance in the initial 29 items. However, closer observation of eigenvalues indicated the presence of only one dominant factor with an eigenvalue equal to 15.51, while the remaining eigenvalues were between 1.97 and 1.03. Therefore, the next step was to request a one-factor model.

In the one-factor model, a single factor with an eigenvalue equal to 15.51 explained 53.5% of variance in the initial set of items. Factor loadings for individual items in this EFA solution ranged from 0.43 to 0.93 (see Table 6), indicating a fairly strong relationship of the individual items to the scale. The only item with a lower than acceptable factor loading was item 5 in the affection domain. This is the same item that showed a poor fit in the CFA analysis. Thus, EFA analysis suggests a unidimensional structure of the Brazilian version of PICCOLO, supporting the hypothesis of computing the overall PICCOLO checklist scores based on all 29 items. Aside from this, considering that CFA confirms good structures within each of the four domains specified by the authors of the original instrument, the scores for the four domains can also be computed.
**Table 6 Factor Loadings from Exploratory Factor Analysis for the Brazilian Version of PICCOLO**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Item</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affection</td>
<td>1</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0.91</td>
</tr>
<tr>
<td>2. Responsiveness</td>
<td>1</td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0.68</td>
</tr>
<tr>
<td>3. Encouragement</td>
<td>1</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0.93</td>
</tr>
<tr>
<td>4. Teaching</td>
<td>1</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0.81</td>
</tr>
</tbody>
</table>

**Internal Consistency.** Internal consistency or the degree to which PICCOLO-BR items correlated with one another was measured by Cronbach’s $\alpha$. The results of these analyses are compared to the internal consistency indices for domain scores and total scale score, as reported by Roggman et al. (2013a), and are presented in Table 7.
Table 7 *Internal Consistency of the Scale Scores Based on PICCOLO Items in the Brazilian and US Samples*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Cronbach’s Alpha (Brazilian sample)</th>
<th>Cronbach’s Alpha (US sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affection</td>
<td>0.79</td>
<td>0.78</td>
</tr>
<tr>
<td>2. Responsiveness</td>
<td>0.86</td>
<td>0.75</td>
</tr>
<tr>
<td>3. Encouragement</td>
<td>0.86</td>
<td>0.77</td>
</tr>
<tr>
<td>4. Teaching</td>
<td>0.79</td>
<td>0.80</td>
</tr>
<tr>
<td>Total</td>
<td>0.94</td>
<td>0.78</td>
</tr>
</tbody>
</table>

As seen in this table, the values of Cronbach’s α in the Brazilian sample were sufficiently high (above 0.70) and even exceeded the values reported for the US sample for most domains. Investigation of the psychometric properties of the PICCOLO-BR version suggests that the structure of the adapted checklist is similar to the original English version.

**Convergent and Discriminant Validity.** The results of the analyses of convergent and discriminant validity of the PICCOLO-BR version are presented in Table 8. As this table shows, the correlations between measurements in the Convergent Validity section and in most PICCOLO domains, on the one hand, and PICCOLO total score, on the other, are statistically significant, albeit modest in magnitude. The OX-NDA socio-emotional reactivity subscale is the only one not correlated with PICCOLO total score. In contrast, no significant correlations are observed in the Discriminant Validity section of the table below.
Table 8  Correlations Between PICCOLO-BR Scores and Other Measures

<table>
<thead>
<tr>
<th>Type of Validity</th>
<th>Measure</th>
<th>PICCOLO (Affection score)</th>
<th>PICCOLO (Responsiveness score)</th>
<th>PICCOLO (Encouragement score)</th>
<th>PICCOLO (Teaching score)</th>
<th>Piccolo Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convergent</td>
<td>Five Stimulation Markers</td>
<td>.264**</td>
<td>.345**</td>
<td>.342**</td>
<td>.343**</td>
<td>.370**</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Cognition Subscale</td>
<td>.263**</td>
<td>.219**</td>
<td>.290**</td>
<td>.235**</td>
<td>.267**</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Motor Subscale (fine, gross)</td>
<td>.202*</td>
<td>.219**</td>
<td>.238**</td>
<td>.268**</td>
<td>.244**</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Socio-Emotional Reactivity Subscale</td>
<td>-0.122</td>
<td>-0.013</td>
<td>-0.138</td>
<td>-0.057</td>
<td>-0.085</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Total Score</td>
<td>.222**</td>
<td>.206*</td>
<td>.247**</td>
<td>.307**</td>
<td>.260**</td>
</tr>
<tr>
<td>Discriminant</td>
<td>Gender</td>
<td>-0.069</td>
<td>-0.071</td>
<td>-0.037</td>
<td>-0.147</td>
<td>-0.089</td>
</tr>
</tbody>
</table>

3.2.3 Psychometric Properties of the Cognitive Sensitivity-BR Scores in Brazilian Sample

Descriptive statistics for the CS items in the Brazilian and Canadian samples are presented in Table 9. The table shows that the least observed CS item in the Brazilian sample was item 8, namely ‘This caregiver is good at rephrasing what his/her child does not understand.’ On the other hand, the most frequently observed behaviour in this sample was item 1, or more specifically ‘This caregiver gives clear and specific verbal directions.’ It is worth mentioning, however, that item 1 was among the three items (1, 3, and 8) whose coding parameters were recalibrated after the pilot study. In other words, the criteria employed to evaluate this specific behaviour in Brazilian mothers were less strict than those applied to the Canadian sample. Other frequently observed behaviours in the Brazilian sample were item 10 (‘This caregiver gives positive feedback to reinforce his/her child.’), item 2 (‘This caregiver gives positive nonverbal directions.’) and item 4 (‘This caregiver will try to complete the task in a way that is sensitive to the child’s needs and desires.’). In the Canadian sample, the most observed behaviour was item 4 (‘This parent will try to complete the task in a way that is sensitive to the child’s needs and
desires.’), while the least observed behaviour was item 8 (‘This parent is good at rephrasing what his/her child does not understand.’), just as occurred in the Brazilian sample.

Table 9 *Descriptive Statistics of Cognitive Sensitivity Items in the Brazilian and Canadian Samples*

<table>
<thead>
<tr>
<th>Item</th>
<th>Brazilian Sample</th>
<th>Canadian Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>3.27</td>
<td>1.5</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>2.87</td>
<td>0.85</td>
</tr>
<tr>
<td>3. This parent reminds his/her child about goals/rules of the task.</td>
<td>2.65</td>
<td>0.84</td>
</tr>
<tr>
<td>4. This parent will try to complete the task in a way that is sensitive to the child’s needs and desires.</td>
<td>2.71</td>
<td>0.88</td>
</tr>
<tr>
<td>5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.</td>
<td>2.35</td>
<td>1.01</td>
</tr>
<tr>
<td>6. This parent is clear in his/her requests for help.</td>
<td>2.75</td>
<td>0.91</td>
</tr>
<tr>
<td>7. This parent is <em>sensitively</em> responsive to his/her child’s requests for help, even those that are subtle/nonverbal.</td>
<td>2.44</td>
<td>0.9</td>
</tr>
<tr>
<td>8. This parent is good at rephrasing what his/her child does not understand.</td>
<td>1.98</td>
<td>1.06</td>
</tr>
<tr>
<td>9. This parent is sensitive to what his/her child knows and/or understands.</td>
<td>2.43</td>
<td>0.86</td>
</tr>
<tr>
<td>10. This parent gives positive feedback to reinforce his/her child.</td>
<td>2.96</td>
<td>1.37</td>
</tr>
<tr>
<td>11. This parent promotes turn taking within the dyad.</td>
<td>2.41</td>
<td>0.88</td>
</tr>
</tbody>
</table>
Following the methodology described in previous Canadian papers on the CS scale (Prime et al., 2014b; Prime et al., 2015a), a composite scale score was constructed by taking the mean of the items \((N = 11)\) even before establishment of the psychometric properties of the adapted version. Thus, in the Brazilian sample, a maternal CS composite score was created for each participating dyad. The scale ranges from 1 to 5. As seen in Table 10, a breakdown of the Brazilian sample shows a mean 2.62 \((SD = 0.81)\), a minimum observed score of 1.09 and a maximum score of 4.82. A Canadian sample of mothers interacting with 18-month old children posted a CS mean of 3.24 \((SD = 0.70)\), a minimum score of 1.18 and a maximum score of 4.91 (Prime et al., 2015a).

Table 10 Composite, Minimum, and Maximum Cognitive Sensitivity Scores in the Brazilian and Canadian Samples (18-m)

<table>
<thead>
<tr>
<th>Cognitive Sensitivity Scale</th>
<th>Brazilian Sample</th>
<th>Canadian Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>((n = 153))</td>
<td>((n = 283))</td>
</tr>
<tr>
<td>Composite Score (18-m)</td>
<td>2.62</td>
<td>3.24</td>
</tr>
<tr>
<td></td>
<td>0.81</td>
<td>0.70</td>
</tr>
<tr>
<td>Minimum score</td>
<td>1.09</td>
<td>1.18</td>
</tr>
<tr>
<td>Maximum score</td>
<td>4.82</td>
<td>4.91</td>
</tr>
</tbody>
</table>

As seen in Table 11, in the Brazilian sample, we observed different CS composite scores according to the family socioeconomic status. While mothers of the fifth quintile (the wealthiest) had a 3.34 \((SD = .84)\), mean-score for the total sample was 2.63 \((SD = .81)\), and mothers of the first quintile (the poorest) had a score of 2.00 \((SD = .49)\). These data converge with the findings reported by Canadian studies, demonstrating that CS scores are lower for low-income mothers in situations of contextual risk (Browne et al., 2016).
Table 11 *Cognitive Sensitivity-BR Composite Scores by Wealth Quintiles in the Brazilian Sample*

<table>
<thead>
<tr>
<th>Wealth Quintile</th>
<th>Sample (n)</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (the Poorest)</td>
<td>18</td>
<td>2.00</td>
<td>.49</td>
</tr>
<tr>
<td>2</td>
<td>32</td>
<td>2.36</td>
<td>.68</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>2.59</td>
<td>.64</td>
</tr>
<tr>
<td>4</td>
<td>34</td>
<td>2.59</td>
<td>.75</td>
</tr>
<tr>
<td>5 (the Wealthiest)</td>
<td>32</td>
<td>3.34</td>
<td>.84</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td>2.63</td>
<td>.81</td>
</tr>
</tbody>
</table>

**Inter-Rater Reliability.** Inter-rater reliability of the total scale score was high ($r = .83$), well above the acceptable minimum of .70 (Barrett, 2001). Estimates of IRR between the two raters were computed for total scale score. The scale was designed as a screening instrument, with no anticipation for individual item reliability, but we provide individual item reliability for interested readers in Appendix 20. The average IRR correlation across the 11 items was $r = .83$; the range was from $r = .29$ (‘This parent promotes turn taking within the dyad’) and $r = .88$ (‘This parent gives clear and specific verbal directions’).

**Intra-Rater Reliability.** Intra-rater reliability, or the level of consistency among the scores generated individually by the primary rater, was found to be high ($r = .94$). Intra-rater reliability was computed for total scale score and single item scores. The average correlation across the 11 items by the same rater on two occasions was $r = .94$; the range was from $r = .56$ (‘This parent is sensitive to what his/her child knows and/or understands’) and $r = .97$ (‘This parent gives clear and specific verbal directions’). The complete results are shown in Appendix 21.

**Factorial Structure.** Initially, CFA was conducted to investigate whether the unidimensional structure of the CS instrument suggested in the English version also applies to the Portuguese version of the scale. Table 12 contains the model fit indices (CFI and TLI > 0.95, and RMSEA < 0.05) for the CFA analyses, as well as item loadings for individual items of the Brazilian sample.
The CFA results did not reflect an optimal model fit. The Root-Mean-Square Error of Approximation (RMSEA; Stieger, 1989) was 0.12, above the recommended cut-off of 0.05. The Comparative Fit Index (CFI; Bentler, 1990) was 0.93, just below the recommended 0.95, and the Tucker-Lewis Index (TLI) was 0.92, also below the recommended index. However, the range of the individual factor loadings in the Brazilian sample is quite good. The lowest factor loading is 0.63, rising to a high of 0.90. All individual items had factor loadings above 0.40, the recommended cut-off for instrument quality (Matsunaga, 2010). The factor loadings in the Brazilian sample (0.63 to 0.90) were even higher than in the Canadian sample (0.41 to 0.88), when compared to the results put forward by Prime et al. (2015a).

Modification indices were investigated to explore what changes can be made to improve model fit. All modification indices suggested introducing correlations between the items in the model. More precisely, the highest modification index (31.95) suggested that items 3 and 8 are

<table>
<thead>
<tr>
<th>Scale/Item</th>
<th>Item loading</th>
<th>CFI</th>
<th>TLA</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>.65</td>
<td>0.93</td>
<td>0.92</td>
<td>0.12</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. This parent reminds his/her child about goals/rules of the task.</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. This parent will try to complete the task in a way that is sensitive to the child’s needs and desires.</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. This parent is clear in his/her requests for help.</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. This parent is sensitively responsive to his/her child’s requests for help, even those that are subtle/nonverbal.</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. This parent is good at rephrasing what his/her child does not understand.</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. This parent is sensitive to what his/her child knows and/or understands.</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. This parent gives positive feedback to reinforce his/her child.</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. This parent promotes turn taking within the dyad.</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
strongly correlated and potentially may measure the same attribute. The second largest modification index (16.88) suggests a strong relationship between items 1 and 6, while the third largest (13.52) reveals the relationship between items 8 and 10. Consequently, insufficient model fit in the CFA analysis is not due to deficient relationships among the items, but rather to potential redundancies among some of them. The pattern of correlations among items also suggests the possibility of a unidimensional structure.

Therefore, we performed an EFA solely to confirm the above-mentioned finding, i.e. the unidimensional structure of the scale. Exploratory factor analysis was performed using a principal axis factoring extraction method with the request to extract only a single factor with eigenvalue greater than 1. This factor analysis showed that there is indeed only one eigenvalue greater than 1. This eigenvalue is equal to 8 and the single factor solution explains 90% of the variance. The factor loadings for individual items are reported in Table 13. Thus, the CS is truly a unidimensional scale. This analysis suggests that one could downsize this instrument to even fewer items without losing significant information since its item measurements are so closely intertwined among themselves. These 11 behaviours are still not sufficiently distinct, since there are still very strong correlations among the 11 items.
Table 13 *Factor Loadings for Cognitive Sensitivity-BR Scale Items in Exploratory Factor Analysis*

<table>
<thead>
<tr>
<th>Scale/Item</th>
<th>Item loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>.72</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>.81</td>
</tr>
<tr>
<td>3. This parent reminds his/her child about goals/rules of the task.</td>
<td>.88</td>
</tr>
<tr>
<td>4. This parent will try to complete the task in a way that is sensitive to the child’s needs and desires.</td>
<td>.94</td>
</tr>
<tr>
<td>5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.</td>
<td>.95</td>
</tr>
<tr>
<td>6. This parent is clear in his/her requests for help.</td>
<td>.95</td>
</tr>
<tr>
<td>7. This parent is <em>sensitively</em> responsive to his/her child’s requests for help, even those that are subtle/nonverbal.</td>
<td>.91</td>
</tr>
<tr>
<td>8. This parent is good at rephrasing what his/her child does not understand.</td>
<td>.89</td>
</tr>
<tr>
<td>9. This parent is sensitive to what his/her child knows and/or understands.</td>
<td>.92</td>
</tr>
<tr>
<td>10. This parent gives positive feedback to reinforce his/her child.</td>
<td>.67</td>
</tr>
<tr>
<td>11. This parent promotes turn taking within the dyad.</td>
<td>.74</td>
</tr>
</tbody>
</table>

By way of comparison, Prime and colleagues (2015a) extracted a two-factor solution that explained 69% of the variance but concluded that the second factor was not theoretically meaningful. As a result, they resorted to a unidimensional structure. The data analyses presented in this study confirm that the Portuguese version of the CS is a very cohesive single scale. The collected data are in line with the theoretically expected structure of the cognitive sensitivity construct, providing evidence that the CS-BR scale is measuring what it is purported to measure.

**Internal Consistency.** Using Cronbach’s α coefficient, internal consistency of the CS-BR scale was seen to be excellent (α = .94), with item-total correlations ranging between .61 and .88. The internal consistency of the Portuguese version is a bit higher than the coefficient obtained for the original scale (α = .92; Prime et al., 2015a), strongly evincing the reliable overall scale as well as the similarity of the scale in Canada and in Brazil.
Convergent and Discriminant Validity. The results of the analysis of the convergent and discriminant validity of the Portuguese version of the CS measurement are presented in Table 14. As shown in this table, in the Convergent Validity section, the correlations of CS with the stimulation markers, the OX-NDA cognition scale and the OX-NDA emotional reactivity scale were as expected and weak to moderate in magnitude. The CS was not significantly correlated with the OX-NDA total score or the OX-NDA motor scale. With respect to discriminant validity CS was not expected to correlate with gender but it did. Boys received lower levels of cognitive sensitivity.

Table 14 Correlations Between Cognitive Sensitivity Scores and Other Measures in the Brazilian Sample

<table>
<thead>
<tr>
<th>Type of Validity</th>
<th>Measure</th>
<th>Cognitive Sensitivity Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convergent</td>
<td>Five Stimulation Markers</td>
<td>.335**</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Cognition Scale</td>
<td>.184*</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Motor Scale (fine, gross)</td>
<td>.116</td>
</tr>
<tr>
<td></td>
<td>Ox-NDA Socioemotional Reactivity Scale</td>
<td>-.166*</td>
</tr>
<tr>
<td></td>
<td>OX-NDA Total Score</td>
<td>.073</td>
</tr>
<tr>
<td>Discriminant</td>
<td>Gender</td>
<td>-.215**</td>
</tr>
</tbody>
</table>

In establishing the convergent validity for the two measurements in this study, correlation analyses between the Portuguese versions of PICCOLO and CS were also performed. Associations were significant at a level of 0.001 and moderately strong. More precisely, the Pearson correlations of the CS scores are $r = .32$ (p < .001) for the affection domain; $r = .37$ (p < .001) for the responsiveness domain; $r = .41$ (p < .001) for the encouragement domain; and $r = .47$ (p < .001) for the teaching domain, obviously the strongest of the associations targeted. The correlation coefficient between the total PICCOLO score and the CS composite score came to $r = .44$ (p < .001), also considered as moderate. These results further evince the convergent validity of the two adapted instruments.
This research had two aims. The first was to develop a cross-cultural adaptation of the PICCOLO checklist and the CS scale to Brazilian-Portuguese. The second was to conduct a validation study to investigate the psychometric properties of the PICCOLO-BR and CS-BR versions with a sampling of Brazilian mother-child dyads. This is the second psychometric study of the PICCOLO checklist outside the US and the first CS scale validity study in a developing country. The overriding objective of this research was development of culturally adapted and meaningful measurement tools for evaluating early responsivity in Brazil.

The importance of the early responsivity construct to the well-being and brain development of infants and the lack of psychometrically sound responsivity measurement tools in Brazil were decisive factors in my effort to pursue this psychometric study. In recent years, a number of child developmental screening instruments aimed at measuring the individual motor, cognitive, language and social functioning of children in the early years of life have been validated for use in Brazil. Among these instruments are the Bayley Infant Neurodevelopment Screener (BINS; Guedes, Primi, & Kopelman, 2011), the Ages and Stages Questionnaire - 3rd edition (ASQ 3; Filgueiras, Pires, Maissonette, & Landeira-Fernandez, 2013), the Denver Developmental Screening Test (DDST; Drachler, Marshall, & De Carvalho Leite, 2007), and the INTERGROWTH-21st Neurodevelopment Package (INTER-NDA; Fernandes et al., 2014). While these tools represent an advance in child development analysis in Brazil, new research has stressed the importance of responsive relationships based on serve-and-return interactions to improvements in children’s outcomes (Black et al., 2017; Britto et al., 2017; Yousafzai, Rasheed, Rizvi, Armstrong, & Bhutta, 2014). Thus, the scientific principle of ‘support responsive relationships’ (CDC, 2017) should be incorporated into policy, intervention practices and research as an added element capable of generating better outcomes for children in Brazil. With this in mind, I decided to perform the cultural adaptation and validation of PICCOLO and CS, two strengths-based early responsivity measurements with positive psychometric attributes.
4.1 Measurement Challenges

Cross-cultural adaptation and evaluation of psychometric properties are necessary preliminary steps to be completed before an assessment scale can be used meaningfully in a different country, culture, and/or language (Guillemin, Bombardier, & Beaton, 1993; Hambleton & Zenisky, 2010; ITC, 2017). Findings on cross-cultural measurement development suggest that it is preferable to adapt an existing instrument with previously established psychometric properties than to develop a completely new tool. Cross-cultural adaptation is less expensive, easier and faster (Epstein et al., 2015a; Lotzin et al., 2015) than developing an entirely new instrument. Moreover, the cultural adaptation process can produce an equivalent measurement tool provided that the specific construct exists in the target culture and is measured correctly by the original tool (Beaton et al., 2000). Experimental and correlational studies performed in Brazil have shown cultural evidence of the importance of the construct of responsivity in Brazilian society (Alvarenga, Dazzani, Lordelo, Alfaya, & Piccinini, 2013; Piccinini et al., 2007a; Wendland-Carro, Piccinini, & Millar, 1999). Upon conclusion of the cross-cultural adaptation process, the likelihood of the adapted version measuring a construct comparable to the original is greatly increased (Beaton et al., 2000).

This research followed a set of standardized guidelines endorsed by experts in this area of study. The adaptation process included a seven-stage analysis performed by diverse collaborators with significant expertise involving (a) item and observational notes content, (b) test instructions for observers, (c) rating scales and (d) scoring categories. At the same time, standardized procedures were adopted for data collection throughout the pilot and study phases. The end result was a high-quality translation of each measurement tool, both linguistically and semantically. Although this is usually classified as the test translation, it actually accounts for only a narrow segment of the adaptation process. Cross-cultural adaptation is a much broader undertaking involving many and varied steps designed to shift a test from one language and cultural reality to another. A measurement tool that is not properly adapted can generate grave distortions in the conclusions of the study. A guiding reference on this topic is the ITC Guidelines for Translating and Adapting Tests (ITC, 2017).

However, while acknowledging that there is a wealth of research on how to conduct cross-cultural adaptation of measurement instruments, one should also recognize that most
adaptations are performed on self-report instruments (Beaton et al., 2000; Epstein et al., 2015a, 2015b; Terwee et al., 2007). Research literature that discusses the cross-cultural adaptation of observational measurements is scarce. More methodological studies are clearly needed to shed light on ways to improve the adaptation process of observational tools from one culture to another.

To minimize bias and error while coding observational data, methodological issues must be taken into account. Some critical methodological aspects are described briefly below, with comments on how they apply to the current study. First off, follow standardized procedures for recording interactions. In this study, detailed procedures for data collection were observed by trained interviewers. Secondly, train raters to agree on scores before initiating data coding procedures. In this regard, two factors may have impacted the moderate levels of inter- and intra-rater reliability of PICCOLO-BR data. One was the reduced percentage of time devoted to video practice during the initial training of Brazilian raters at Utah State University. Only 25 per cent of the time was reserved for video coding (4 out of 16 hours), against a reported total of 72 per cent dedicated to video-based training of observers in the US measurement study according to PICCOLO developers (8 out of 11 total hours) in pursuit of the desired reliability level (Roggman et al., 2013a). Consequently, one should adopt a more rigorous PICCOLO reliability process in future training, especially for non-American raters. Training should devote substantial time and effort to attenuating individual interpretative biases and augmenting compliance with objective guidelines. The other factor was the time lag between initial training in August 2015 and the first phase of Brazilian video coding in the first semester of 2017. In the future, the gap between training and coding must be sharply reduced. Third, establish and maintain reliability levels between raters throughout the coding process. Although the criterion agreement requested by the PICCOLO authors for independent coding was met by Brazilian raters before commencing data coding procedures and levels of agreement/disagreement were periodically checked as recommended, related methodological issues may have occurred. For instance, ‘observer drift’ describes subtle changes in code definitions introduced unintentionally by raters over time (Smith, 1986) and may certainly jeopardize the accuracy of an observer’s performance. Given that disagreements did not occur randomly, but were mainly focused on four items in the encouragement domain, a formal consultation with an expert PICCOLO coder could well have been a useful strategy for resolving discrepancies. Moreover, the ‘halo effect’ is a systematic bias
in attribute ratings resulting from raters’ tendency to rely on overall effect rather than carefully discriminating among conceptually distinct and potentially independent attributes. Such a bias is frequently correlated with viewer assumptions, beliefs or personal inclinations. Furthermore, raters may be unconsciously tempted to make parents from their own culture look good. However, researchers must be aware of the low-frequency items. As a final remark, one should recognize that, to be reliably employed in research, observational measurements require much more training and standardization of procedures for collecting and coding interactions than indirect methods.

4.2 Measurement Challenges related to Cultural Differences

While direct observations are valuable tools for examining the mechanisms involved in social interaction, the construct validity of observational methods depends partly on whether the findings are representative of the participant’s typical everyday behaviours (Gardner, 2000). Thus, when developing measurements for different cultures, it is essential that one give due consideration to the comparability or equivalence of the various items across distinct contexts. In the case at hand, is it correct to assume that items developed in North America - as occurs with PICCOLO and CS measurements - are in some way universal and therefore relevant to less developed countries? Is it reasonable to expect that what is conceptualized as early responsivity and positive parenting in developed, high income countries would take a similar form in a developing, upper middle-income country such as Brazil? Going beyond this, when observing culturally diverse samples, a critical question that arises is: “How different will parenting behaviours - operationalized in the items of each instrument - look in terms of meaning and frequency when viewed across cultural groups and how normative will the behaviours be in the target population?” Well reflected answers to these and other similar queries may well be the key to making the jump from one cultural milieu to another.

Coding observational items demands that observers have a deep understanding of the meaning of interactional behaviours within the specific culture. Consequently, for reasons of cultural appropriateness and to avoid cultural bias, it is essential that one train raters from the same population under investigation and to which the observational measuring tool will be applied. In the current study, development of cultural adaptations designed to guide Brazilian
raters in the task of coding each instrument was an attempt to address cross-cultural issues while adapting some additional observation notes to Brazilian culture.

Although this study was not designed to answer questions about the parenting differences between Brazilian and North American mothers, the items on which Brazilian mothers are rated high and low provide some indication of parenting goals in the Brazilian context. According to the CS scale, the most frequently observed behaviours were ‘This caregiver gives clear and specific verbal directions.’ and ‘This caregiver gives positive feedback to reinforce his/her child.’ The two least frequently observed items were ‘This caregiver is good at rephrasing what his/her child does not understand.’ and ‘This caregiver promotes turn taking within the dyad.’ According to the PICCOLO checklist, Brazilian mothers prioritize physical proximity to their young children, pay close attention to what the children are doing, encourage them to handle toys and label objects and actions of the child. Behaviours shown less frequently are overt praise and supportiveness during play, flexibility to changes in their children’s interests and engagement in sequential teaching activities. These PICCOLO behaviours tend to support the interdependent orientation usually observed in Latino families (Halgunseth, Ispa, & Rudy, 2006). Moreover, Okagaki and Frensch (1998), who investigated parenting and children’s school achievement in a multiethnic sample, reported that Latino parents rated children’s socioemotional characteristics as more important than academic aspects of school achievement. This finding is consistent with other research that has shown low levels of cognitive stimulation practices in comparison to socioemotional caregiving in developing countries (Bornstein & Putnick, 2012). Qualitative data gathered among health professionals in the focus group supports this finding.

Several issues emerged from my study of the Brazilian CS scale. During piloting, it became clear that we would have a floor effect on several items if we used the same criteria of average used in the Canadian sample: what was average for Canadian mothers was not average for Brazilian mothers. We recalibrated our notion of average on three items to reflect the underlying normal distribution of response in the Brazilian sample. Had we not recalibrated to the Brazilian mean we would have ended up with low inflated distribution marked by low levels of variability. This would not have yielded a useful measurement tool in the context of Brazil. Theoretically, it makes sense to presume that the frequency and normativeness of parental behaviours are meaningfully different between Brazil and Canada, where the scale was developed.
In the Brazilian sample, the CS mean was 2.62, while in the Canadian sample it was 3.24. Individuals with higher CS scale scores are considered more adept at providing cognitively-attuned input to their partners. The present finding is consistent with prior research showing lower levels of cognitive sensitivity in contextual risk settings (Browne et al., 2016; Prime et al., 2015a). This evidence is supported both by contrasting the Brazilian context of a developing country with a developed country like Canada and by comparing the CS scale scores of caregiver-child dyads from different SES in the same society. Investigation on the CS-BR scores confirms SES-related differences in caregiving practices among Brazilian mothers. In the Brazilian sample, the CS composite score was 3.34 among financially better off mothers (fifth quintile), while the poorest mothers (first quintile) showed a score of 2.00. These findings corroborate the fact that social class is one of the strongest predictors of parenting quality (Bradley & Caldwell, 1995; Bradley & Corwyn, 2002) and that poverty generally underlies less stimulating and responsive parenting.

4.3 Considerations on the Validation Study

The results of this research provide satisfactory evidence that both parenting measurements can be used effectively in the Brazilian context. Evidence was obtained for the content and construct validity, reliability estimates and internal consistency of the Brazilian versions of the PICCOLO and CS instruments, as well as convergent and discriminant validity.

4.3.1 PICCOLO-BR Version

Moderate levels of intra- and inter-rater reliability at the item level were observed in this study. At the scale level, however, intra- and inter-rater reliability was strong ($r > .70$). While, in the US measurement study, IRR correlations between pairs of raters averaged $r = .77$ (ranging from $r = .74$ for the responsiveness domain to $r = .80$ for the affection domain), in the Brazilian sample, IRR correlations between the two raters for the total scale score was $r = .76$ (ranging from $r = .63$ for the encouragement domain to $r = .77$ for the affection domain). Consequently, if the measure was ever to be used at the item level, raters would have to be trained to a much greater degree. In the Brazilian sample, four items in the encouragement domain (items 2, 4, 5 and 6, respectively) showed consistently low scoring reliability between the two raters. What this means is that further attention must be focused on these four items and, more specifically, on the extent to which the observational guidelines apply to the Brazilian sample, the meaning and
frequency of these behaviours in Brazilian culture and precisely how these behaviours are observed in the Brazilian sample.

The results of factor analysis revealed the unidimensional structure of the Brazilian version of PICCOLO. Although all four domains were marked by high degrees of internal consistency (αs > .79, and α = .94 for total scale score) and moderate intra- and inter-rater reliability, the true strength of the measurement is found at the total level. In both the CFA and EFA analyses, factor loadings for individual items indicated the strong relationships of individual items to the scale, thus supporting the hypothesis that the PICCOLO-BR checklist is psychometrically strongest as a total scale. This evidence of construct validity has implications on how one should apply this measurement tool. While it could be used by practitioners to talk to parents about what behaviours and/or domains require strengthening in their relationship with young children, it should be administered for research purposes as a single instrument since the four domains are not well differentiated from one another. This recommendation is also supported by the PICCOLO developers who wrote the following in the US measurement paper “The data did not, however, reflect a four-factor structure as suggested by the conceptual framework (…) we recommend the use of all four domains of the PICCOLO measure” (Roggman et al., 2013a, p. 301).

4.3.2 Cognitive Sensitivity-BR Version

The CS scale was designed to measure a unitary construct of cognitive sensitivity. The Brazilian data showed support for a unitary construct, as well as strong inter- and intra-rater reliability at the total scale level supporting the use of the total scale score. As expected, inter- and intra-rater reliability at the item level was not sufficiently strong for use of individual items and the CS-BR should only be used as a total score. The high estimate of CS-BR internal consistency (α = .94) and factor analyses support unidimensionality.

With respect to convergent validity, Canadian studies have produced theoretical and empirical evidence that the CS scale is associated with the cognitive and socioemotional outcomes of the child. The same pattern was evident in the CS-BR, albeit more weakly. Although significantly related to the stimulation markers, cognitive and socioemotional development, as expected, was not related to the OX-NDA total score. This may be because the total score contains aspects of development (e.g. fine and gross-motor) that would not be
expected to correlate with cognitive sensitivity. It may also be related to the fact that the OX-NDA was not related to the gold standard developmental tool (Bayley) against which it was validated (A. Barros, personal communication, January 04, 2018), and that the CS was developed as a screening tool. The advantage of a rapidly administered screening tool is its quickness, while the disadvantage is that there will be more error in the measurement than a gold standard measurement (Lavigne, 2016).

4.4 Limitations

This research has limitations that should be considered when interpreting the results. First of all, although the study tested the instruments using an adequate sample in terms of size ($n = 156$) and socioeconomic variability, thus ensuring its statistical power, the age range of the children in the sample was limited to 18-month old babies. While this age group had the positive feature of allowing for a comparison between Brazilian and Canadian data for the CS scale, the Brazilian and American PICCOLO validation samples were less similar. The PICCOLO-BR had less variation in terms of age than the American PICCOLO (18m versus 14-, 24-, and 36-months, respectively). In future studies in Brazil, it would be helpful to extend the PICCOLO-BR to a wider age-range.

Secondly, though we had sufficient socioeconomic variation and numbers for a reliability and validity study, our numbers were not sufficient for a standardization sample. Thus, the mean and standard deviation from the current study cannot be generalized to the whole population and a large study would be necessary for standardization and, therefore, for clinical use.

Thirdly, for purposes of criterion validity, although a gold standard should obviously be used to compare measurement scores (Terwee et al., 2007), a gold standard for early responsivity does not yet exist in Brazil. To mitigate this problem, we examined relationships with child outcomes, as well as other indices of parenting. Although we found the expected relationships with child outcomes, these were more modest than expected. The explanation for this may relate to the internal consistency observed in the OX-NDA subscales ($\alpha < .70$). The reliability and validity of the OX-NDA assessment tool in Brazil are still under analysis, but preliminary results show a weak correlation with the gold standard. Consequently, we also presented other data to support criterion validity. We examined relationships of our two parenting measurements with one another and found that they do measure similar constructs. We also found that both
measurements were significantly related to a measurement of parenting stimulation (Barros et al., 2010).

Finally, the small number of raters used in this study (a primary and a secondary rater per instrument) may have limited the assessment of their psychometric properties. In the future, it will be important to train and engage more Brazilian raters.

4.5 Implications for Future Research

Because early parenting has been shown to be so important to brain development, governments (including in Brazil) are introducing home visiting programs for the most disadvantaged families. This will be important to determining the sensitivity of the PICCOLO-BR and CS-BR in measuring change.

Taken together, our qualitative and statistical findings suggest that both PICCOLO-BR and CS-BR are reliable and valid cross-cultural tools for evaluating parenting interactions with young children in Brazil. The PICCOLO checklist encompasses parental expressivity and responsivity in both socio-emotional and cognitive caregiving. Structured around 29 relatively common behaviours observed in mother-child interactions and moderately associated to child outcomes in the Brazilian sample, PICCOLO-BR provides a unitary and psychometrically sound measurement tool for assessing early responsivity in Brazil. This is a strong measurement for use in research and by using the total scale it would also be a very good tool for screening and identifying parents who could benefit from receiving help in early responsivity. The set of checklist items can support practitioners in efforts to strengthen the caregiver’s early responsivity capability. Based on evidence that enriched and sensitive adult-child interaction is essential to early brain development and child well-being (CDC, 2017; Swingler et al., 2017; Young, 2017), the CS scale is a science-based tool for measuring responsivity in the cognitive domain. This is a very coherent and strong unitary measurement for use in research and as a screening tool. Evidently, the sample in the current study is much too small to provide the normative data that would be required to use those tools clinically. This will be the goal of future research. Nevertheless, the existence of such strength-based instruments capable of assessing the relationship environment that envelops the child development process represents a significant advance in the ECD field in Brazil.
By furnishing two culturally adapted and psychometrically sound measuring instruments appropriate to large-scale interventions, this study has added to current knowledge on observational tools for measuring early responsivity in parent-infant interactions in Brazil. Though they measure similar parenting constructs, both PICCOLO and the CS scale represent a significant advance in the assessment of early responsivity. Obviously, this could generate enormous impacts for field practitioners who will henceforward have valid measurement tools at their fingertips, allowing them to identify the extent to which parenting interactions so critical to early child development are affectively and cognitively responsive. Empirical evidence exists that maternal sensitivity can be improved through intervention (Bakermans-Kranenburg et al., 2003; Landry et al., 2008). Moreover, increasing parental knowledge of effective parenting strategies at the population level is more beneficial to parents than increasing their knowledge of child development processes and milestones (Winter, Morawska, & Sanders, 2012).

Such evidence-based knowledge will certainly advance the quality of research on parenting interactions in Brazil, as well as the development and monitoring of public social policies and programs targeted to families with young children. This is seen to be particularly important when viewed in the framework of the “Happy Child Program” (Programa Criança Feliz), a nationwide initiative launched in October 2016. The Brazilian government intends to register the poorest four million under 3-year old children and their caregivers in this parenting program. Fostering quality interactions through responsive and nurturing caregiving and play-based learning is the main strategy adopted to further early child development and reduce inequalities.

Parallel to this, the Brazilian National Congress has passed legislation targeted at early childhood. This law (No. 13.257, dated March 8, 2016) defines the principles and guidelines for elaboration and implementation of public policies for early childhood, taking due account of the specificities and relevance of the early years of life for child and human development (Frente Parlamentar Mista da Primeira Infância, 2016). This new legal framework determines that ‘public policies shall necessarily have monitoring components and systematic data collection (…) and dissemination of its results and conclusions’ (Article 11).

Indeed, valid measuring instruments of early parental responsivity appropriate to primary care settings are essential tools to advancing ECD policies and programs. This study is one of the
first of its kind designed to provide culturally adapted, reliable and valid strengths-based measurements of positive parenting interactions with children under three years of age in Brazil.
References


in Chile. Poster symposium presented at the 15th World Congress of the World Association for Infant Mental Health, Prague, Czech Republic.


Appendix 1: Cognitive Sensitivity Scale Protocol (English)

Prime, Rodrigues, Perlman, & Jenkins, 2015

**Cognitive Sensitivity**

**Parent-Child Thin Slice Dyadic Interaction**

**Coding**

- To answer each of the questions below, think about how it applies to the parent interacting with this specific child.
- Code based on initial reactions / general impressions; don’t over think any of the items; code quickly.
- Use all available information to form a reaction including nonverbals
- Try to use the entire 5-point scale, do not leave items blank (give each item your best guess)
- Watch **five minutes only** (if it goes on beyond five minutes, discontinue)

<table>
<thead>
<tr>
<th>Give your impression of how this parent would interact with his/her child on a day-to-day basis, based on what you have seen:</th>
<th>(Not at all true)</th>
<th>(Very True)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communicative Clarity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. This parent reminds his/her child about goals/rules of the task.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. This parent will try to complete the task in a way that is sensitive to the child’s needs and desires.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. This parent is clear in his/her requests for help</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Mind-Reading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. This parent is <em>sensitively</em> responsive to his/her child’s requests for help, even those that are subtle/nonverbal.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>8. This parent is good at rephrasing what his/her child does not understand.</td>
<td>1</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>9. This parent is sensitive to what his/her child knows and/or understands.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Mutuality-Building</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. This parent gives positive feedback to reinforce his/her child.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>11. This parent promotes turn taking within the dyad.</td>
<td>1</td>
</tr>
</tbody>
</table>

Updated: May 2016
Appendix 2: Author’s Permission to use PICCOLO for Research Purposes

Logan/Utah, August 7th, 2015.

PERMISSION FOR USING THE PICCOLO MEASURE FOR RESEARCH PURPOSE

I, Ms. Lori Roggman, PhD, Professor at the Utah State University/United States, and the main author of the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO) grant permission to Ms. Alessandra Schneider, Brazilian, and PhD student at the University of Toronto/Canada, to use the PICCOLO measure (Roggman et al., 2013) for her doctoral thesis which intends to do a cross-cultural adaptation and validation of the PICCOLO in Brazil.
Appendix 3: Publisher’s Permission to Use PICCOLO for Research Purposes

LETTER OF AGREEMENT

This Letter of Agreement ("Agreement") is made the 18th day of November, 2015, ("Effective Date") by and between Paul H. Brookes Publishing Co., Inc., of P.O. Box 10624, Baltimore, Maryland 21203, U.S.A., a body corporate, incorporated under the laws of the State of Maryland, U.S.A. ("Brookes"), of the one part, and Alessandra Schneider, of QTS 111, Bloco G, Apto. 201, Asa Sul, Brasília, DF, 70.374-970, BRAZIL ("SCHNEIDER"), of the other part.

Brookes is in receipt of Schneider’s request to translate and adapt into Portuguese (for Brazil) ("Portuguese") the following text from Parenting Interactions with Children: Checklist of Observations Limited to Outcomes (PICCOLO™), by Lori A. Fogelman, Gina A. Cook, Mark S. Innocenti, and Vonda Jamp Norman ("Authors"). Specifically, and limited to the:

1. The 4-page observational tool ("Tool"); and
2. Chapters 1, 2, and 3 (pp. 1-31) of the PICCOLO™ User’s Guide ("UG").

Together, the Tool and UG are called the "Works." 

The permission granted below and by this Agreement is for translation, adaptation, and use of only the Works described above, and does not apply or extend to any other items from the PICCOLO product line. Schneider must request and receive permission from Brookes to translate, adapt, and use any other portion or product of PICCOLO.

Brookes grants Schneider non-exclusive, non-transferable permission to translate and adapt the Works into the Portuguese language ("Translation") for one-time, not-for-profit, limited use in the research study titled "Cross-Cultural Adaptation and Validation of the PICCOLO™ Parenting Interactions with Children: Checklist of Observations Limited to Outcomes in Brazil" ("Study"), provided that Schneider accepts the following terms and conditions, which shall also apply to Schneider’s faculty advisor, Dr. Jennifer Jenkin, also of the University of Toronto ("Jenkin"), and the rates assisting Schneider at the sites participating in the Study ("Raters"): 

1. OWNERSHIP OF PICCOLO MATERIALS. Schneider must own at least 1 PICCOLO™ Provider Starter Kit (ISBN 978-1-59857-995-7) ("Kit") and attach 1 copy of The PICCOLO™ Training DVD: Implementation and Scoring (ISBN 978-1-59857-304-6) ("DVD"). Neither the Kit nor the DVD may be reproduced or shared amongst Raters participating in the Study.

2. TRANSLATION AND ADAPTATION. Schneider will make a faithful and accurate translation of the Works, with no abbreviations, additions, deletions, or changes without written approval from Brookes. This means...
106

a. Schneider may adapt content from the Works to make the Translation more useful to the Bahasa Portuguese-speaking population participating in the Study.

b. Schneider will have the Translation proofread by another Portuguese speaker.

c. Schneider will make a "back" translation of the Portuguese Tool to check for accuracy (that is, translate the Portuguese version of the Tool back into English).

However, Schneider may not use the photographs that appear on each page of the Tool. Other photographs may be used, provided that Schneider has secured the appropriate permissions and obtained Brooks' written approval prior to selecting the new photographs for the Portuguese Tool. There is no requirement for Schneider to use any photographs in the Portuguese Tool.

3. PERMISSION TO USE TRADEMARK AND LOGO

a. Schneider will use the trademark and logo shown below on every copy of the Translation:

[Image of Trademark]

b. Schneider agrees that using the trademark and logo does not give Schneider any ownership interest.

c. Schneider will not use the trademark or logo for any purpose other than those described in this Agreement.

d. Schneider may not change, alter, or replace the trademark or logo in any way. Neither the PICCOLO® nor the logo may be translated or adapted.

4. CREDITS AND NOTES

 Schneider will put the following statement in Portuguese and in English on all copies of the Translation, as follows:

On every page of every copy of the Portuguese Tool:


On the first page of each chapter of the Portuguese UG:


5. APPROVAL OF TRANSLATION

Schneider will email the Translation and the back translation of the Portuguese Tool to rjriggs@brookscole.com after the trademark, logo, and photographs (if Schneider chooses to use new photographs as described in Paragraph 2 above) have been added to the Translation. Schneider shall receive Brooks’s written approval before using the Translation in the Study.

6. USE OF TRANSLATION IN STUDY

Schneider may photocopy and distribute paper copies of the Translations only as part of the Study to 10 neighborhood sites in Pelotas, Rio Grande do Sul, Brazil, through the end of the Study on August 31, 2017.

a. Schneider may make photocopies as follows:

  a. approximately 200, but no more than 250, copies of the Portuguese Tool; and
  b. approximately, but no more than, 50 copies of the Portuguese UG.

b. Schneider will use the Translation with approximately 200 children and their parents during the course of the Study.

c. Schneider will distribute the copies of the Portuguese UG only to jerkins and theRates.

d. Schneider will distribute the photocopies of the Translation free of charge.

7. DATA

Schneider agrees to provide Brooks with any de-identified data collected with the Translation so that the data may be shared with the Authors. The data files must be emailed to rjriggs@brookscole.com within 66 days after the end of the Study, or by October 31, 2017, whichever comes first.

8. PERMISSION FEE

In exchange for the permission granted herein, including the use of the trademark and logo, a nonrefundable permission fee of U.S. $400.00 is due to Brooks.
10. ADDITIONAL PERMISSION. If Schneider needs more time (in other words, beyond August 31, 2017) and/or more copies of the Translation (in other words, more than number of copies permitted in Paragraph 9 above) to complete the Study, Schneider shall write to Brookes to request additional time and/or copies. Brookes and Schneider shall agree upon the extension needed. Otherwise, this Agreement shall automatically expire after August 31, 2017, or when Schneider has made the number of copies permitted in Paragraph 9 above, whichever comes first.

11. NON-EXCLUSIVE, NON-TRANSFERABLE, ONE-TIME PERMISSION. (See Paragraph 1.)
   a. "Non-exclusive" means that Brookes may allow at any time other persons, organizations, and/or companies to make and use Portuguese-language versions of part or all of the Works and/or other items in the PICCLO Product Line.
   b. "Non-transferable" means the permission described in this Agreement is only for Schneider. Schneider may not give this permission to another person, organization, or company unless Schneider asks Brookes and Brookes provide that approval in writing.
   c. "One-time" means that Schneider may use the Translation in and for the single research study described above.

12. INTELLECTUAL PROPERTY. All intellectual property associated with the Works and the Translation is held by Brookes. All rights not explicitly described in this Agreement are retained by Brookes.

13. COMMERCIAL PUBLICATION. Schneider agrees that no commercial publication of the Translation may be made by Schneider or with a publisher without the involvement and written consent of Brookes.

To indicate your agreement to the terms outlined above, initial and date all pages of this agreement, sign and date below, and return 1 copy to Brookes. A fully executed copy of the Agreement will be sent to you.

I, Alessandra Schneider, on behalf of myself and my faculty advisor, Dr. Jennifer Jenkins, agree to the terms and conditions outlined above for the Portuguese (for Brazil)-language translation, adaptation, and use of the selected content, as described above, from Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCLO™).
Appendix 4: Cognitive Sensitivity Scale – Forward Translations (T1 & T2) and Written Reports, in Portuguese

[T1]

Sensibilidade Cognitiva

Codificação em interações breves em dúadas pais-criança

- Responda às perguntas abaixo com base na interação do pai/mãe especificamente com esta criança.

- Codifique rapidamente, de acordo com suas reações iniciais e impressões gerais; não se detenha demais em nenhum item.

- Use todas as informações disponíveis para formar uma impressão, incluindo as informações não verbais.

- Tente usar toda a escala de 5 pontos; não deixe itens em branco

<table>
<thead>
<tr>
<th>Clareza na comunicação</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. O pai/mãe dá instruções verbais claras e específicas.</strong></td>
</tr>
<tr>
<td>Este item se refere a comandos verbais com informações específicas e não genéricas. O pai/mãe dá informações suficientes para que a criança complete a tarefa, sem ser vago ou ambíguo.</td>
</tr>
<tr>
<td><strong>Exemplos:</strong> &quot;Coloque o bloco azul grande ao lado do bloco amarelo pequeno&quot;, &quot;Conte quatro círculos e depois coloque aqui&quot;, &quot;É o bloco verde-claro&quot;, &quot;Vamos separar os blocos: você pega os azuis-claros e eu pego os azuis-escuros&quot;; <strong>mas não</strong> &quot;Coloque esse lá&quot;, &quot;Me dê aquele&quot;, &quot;Separe os blocos&quot;.</td>
</tr>
</tbody>
</table>

| **2. O pai/mãe dá instruções não verbais positivas.** |
| Este item se refere ao uso de ações físicas para comunicar o que a criança deve fazer a seguir, incluindo também a modelagem. As ações são consideradas "positivas" na medida em que promovem a realização da tarefa de forma colaborativa, não agressiva e não hostil. |
| **Exemplos:** Guiar a mão da criança, apontar para o lugar correto, apontar para a figura, apontar para um objeto e sugerir que a criança o pegue, modelar ("Olha o que a mamãe vai fazer" ou "Olha só [mostra como completar a ação]"). |

| **3. O pai/mãe lembra a criança dos objetivos/regras da tarefa.** |
| O pai/mãe cria um contexto para a atividade, comunicando à criança a ideia geral da tarefa, os objetivos e os passos a seguir. |
| **Exemplos:** "Lembra que nós estamos tentando copiar esta figura", "A gente quer construir uma casa", "Agora vamos montar o braço", "Não esqueça que só temos mais 5
4. **O pai/mãe procura completar a tarefa de maneira sensível às necessidades e aos desejos da criança.**

Este item descreve a clareza com que o pai/mãe comunica à criança que há uma tarefa a ser feita na qual ele está engajado, estimulando assim a participação da criança. O pai/mãe demonstra envolvimento na atividade e esforço em completá-la. Se a criança não parece muito interessada na tarefa ou demonstra dificuldade, o pai/mãe procura contemplar com sensibilidade tanto os desejos/necessidades da criança quanto o objetivo da tarefa. Não é necessário que a atividade seja realizada corretamente, mas o pai/mãe deve tentar seguir a estrutura da tarefa. Um pai/mãe que desconsidera as necessidades da criança para completar a tarefa terá pontuação mais baixa nesse item, assim como um pai/mãe que não tenta modelar a estrutura e os objetivos da atividade. Um pai/mãe que leva em conta as necessidades da criança e também as exigências da tarefa deverá ter pontuação mais alta.

5. **O pai/mãe procura seguir as regras de maneira sensível às necessidades e aos desejos da criança.**

O pai/mãe segue as instruções do entrevistador, incluindo quaisquer regras mencionadas (p. ex., tocar nas cores certas), levando em consideração as necessidades da criança. Se a criança não compreende ou não demonstra interesse em seguir as regras, o pai/mãe procura explicá-las de maneira sensível. Um pai/mãe que desconsidera as necessidades da criança para seguir rigidamente as regras terá pontuação mais baixa nesse item, assim como um pai/mãe que leva em conta as necessidades da criança e também as regras da tarefa deverá ter pontuação mais alta.

6. **O pai/mãe pede ajuda de maneira clara.**

O pai/mãe se comunica de uma forma que a criança consiga compreender. Este item não se refere especificamente a instruções verbais ou não verbais, mas à clareza geral da comunicação.

<table>
<thead>
<tr>
<th>Leitura da mente</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. <strong>O pai/mãe responde sensivelmente aos pedidos de ajuda da criança, mesmo os sutis ou não verbais.</strong></td>
</tr>
</tbody>
</table>

Quando a criança demonstra precisar de ajuda (de modo verbal ou não verbal), o pai/mãe percebe e responde adequadamente. O pai/mãe não ignora sinais sutis ou óbvios de que a criança precisa de ajuda. Este item não inclui respostas em tom irritado, frustrado ou hostil.

**Exemplos:** "[a criança não consegue achar o bloco] Esse está difícil de achar, né?", "[a criança não consegue achar o bloco] Olha o bloco ali!", [puxa para perto o bloco que a criança está procurando].

8. **O pai/mãe consegue reformular as instruções que a criança não entende.**

Quando a criança tem dificuldade em entender as instruções ou a tarefa, o pai/mãe perdece e ajusta a linguagem para que ela compreenda melhor.

**Exemplos:** O pai/mãe vê que a criança não está conseguindo achar o bloco amarelo pequeno, e diz "Procure o que tem só 4 círculos", [ao construir o robô] a criança não responde quando o pai/mãe diz "Vamos começar de baixo", e o pai/mãe reformula,
dizendo "De que cor são os pês do robô?"

**9. O pai/mãe é sensível ao que a criança sabe e/ou compreende.**

O pai/mãe é capaz de avaliar o nível de compreensão da criança e que tipo de ajuda ela precisa em cada tarefa, identificando a **zona de desenvolvimento próximo/proximal** (isto é, o nível em que as instruções são mais proveitosas para a criança - nem muito fáceis, nem muito difíceis).

**Exemplos:** Dividir a tarefa em partes menores, usar linguagem adequada para o nível de desenvolvimento da criança, dar instruções básicas e apropriadas, perceber quando a criança não compreende algo, incentivar a independência da criança quando apropriado.

**Desenvolvimento da Mutualidade**

**10. O pai/mãe oferece feedback positivo para reforçar o comportamento da criança.**

O pai/mãe responde às ações da criança com afirmações, vocalizações e/ou comportamentos positivos.

**Exemplos:** "Muito bem!", "É assim mesmo!", "Beleza!", "Êee!", [balança a cabeça seguindo as ações da criança].

**11. O pai/mãe incentiva a alternância na interação com a criança.**

Este item é codificado quando o pai/mãe incentiva a alternância e a reciprocidade na interação, verbalmente ou não, e de modo explícito (p. ex., "Agora é a sua vez") ou sutil (p. ex., "O que a gente vai fazer agora?").

**Exemplos:** "O próximo é você quem faz", "Agora é a sua/minha vez", [apontar para a criança para indicar que é a vez dela], "Onde será que esse bloco vai... [estimulando a criança a dar sua opinião]". Em interações altamente recíprocas/mútuas, isto pode ser sutil (p. ex., o pai/mãe se inclina levemente para trás e/ou olha para a criança quando termina sua vez).

Justificativa da tradutora sobre a adoção das expressões indicadas abaixo:

**Formar uma impressão:** o original fala em "formar uma reação", mas "impressão" me parece mais adequado ao contexto.

**Colaborativa:** o original usa "helpful", que significa solícito, prestativo ou útil, mas o contexto parece se referir à colaboração entre a diade.

**Contemplar:** O original fala em "balance" os desejos/necessidades da criança e o objetivo da tarefa, mas a tradução literal (equilibrar) não me parece clara em português.

**Mutualidade:** "Reciprocidade" soa melhor para mim, mas imagino que se trate de um termo utilizado na área com sentido específico.

**Reforçar o comportamento da criança:** O original fala em "reforçar a criança", mas o que deve ser reforçado é o comportamento, não a criança.
Sensibilidade Cognitiva

Protocolo de Análise em Pequenos Intervalos da Interação Diádica Pais-Filhos

- Para responder a cada uma das perguntas abaixo, pense em como isso se aplica aos pais interagindo especificamente com esse(a) filho(a).
- Pontue baseando-se nas reações iniciais / impressões gerais; não pense muito sobre os itens; pontue rapidamente.
- Use todas as informações disponíveis para a formação de uma reação, incluindo as não verbais.
- Tente usar toda escala de 5 pontos, não deixe itens em branco.

<table>
<thead>
<tr>
<th>Comunicação Clara</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Esse pai/mãe dá instruções verbais claras e específicas.</strong></td>
</tr>
<tr>
<td>Esse é um comando verbal com informações específicas e não genéricas. Esse pai ou essa mãe fornece a seu(sua) filho(a) informação verbal suficiente para completar a tarefa ao invés de ser vago ou ambíguo.</td>
</tr>
<tr>
<td><strong>Exemplos:</strong> “Ponha o bloco azul e grande ao lado do bloco amarelo e pequeno”; “Conte os quatro círculos e então os coloque dentro”; “É o bloco verde!”; “Vamos separar os blocos, você pega os azuis claro e eu pego os azuis escuro”; <strong>ao invés de</strong> “Ponha isso lá”; “Dê-me aquilo”; “Separe os blocos.”</td>
</tr>
<tr>
<td><strong>2. Esse pai/mãe dá instruções não verbais positivas.</strong></td>
</tr>
<tr>
<td>Envolve usar a ação física para transmitir à criança o que ela precisa fazer em seguida. Isso envolve também fazer ações que sirvam como modelo. Essas ações são consideradas “positivas” porque estão promovendo a conclusão da tarefa de uma forma não agressiva, não hostil e útil.</td>
</tr>
<tr>
<td><strong>Exemplos:</strong> Guiando a mão da criança; apontando para o lugar correto; apontando para a figura; apontando para o objeto, sugerindo que a criança o pegue; servindo como modelo: “Veja como a mamãe faz” ou “Veja (e mostrare como a criança deve fazer).”</td>
</tr>
<tr>
<td><strong>3. Esse pai/mãe lembra seu(sua) filho(a) sobre objetivos/regras da tarefa.</strong></td>
</tr>
<tr>
<td>Proporciona ao(à) filho(a) informações sobre a perspectiva geral e os objetivos da tarefa. A ideia é que o genitor está passando para a criança o contexto para a atividade – tanto o que está sendo feito a cada passo do caminho, como em geral.</td>
</tr>
<tr>
<td><strong>Exemplos:</strong> “Lembre-se, estamos tentando copiar essa figura”; “Estamos construindo uma casa”; “Nós queremos colocar todos os blocos azuis para baixo”; Vamos construir o braço em seguida”; “Lembre-se, temos apenas 5 minutos.”</td>
</tr>
</tbody>
</table>
4. **Esse pai/mãe tenta completar a tarefa de uma forma sensível às necessidades e desejos do(a) filho(a).**

Descreve o quanto o genitor está comunicando a seu(sua) filho(a) que existe uma tarefa a ser concluída e que ele está dedicado em completar a tarefa e, ao realizá-la, faz de forma a envolver seu(sua) filho(a). Esse genitor está empenhado na atividade orientada e trabalhando para concluir a tarefa. Se a criança não está particularmente interessada na tarefa, ou está tendo dificuldades com as exigências, o genitor é sensível a isso e trabalha para equilibrar os desejos/necessidades do(a) filho(a) e o objetivo de completar a tarefa. Não se trata de realizar a tarefa corretamente, mas se o genitor está tentando ficar dentro da estrutura da tarefa. O genitor que compromete as necessidades de seu(sua) filho(a) para completar a tarefa irá pontuar menos nesse item, assim como um genitor que não se manter dentro da estrutura e das expectativas da tarefa. Um genitor que equilibra as necessidades de seu(sua) filho(a) e as demandas da tarefa irá pontuar mais.

5. **Esse pai/mãe tenta seguir as regras de forma sensível às necessidades e desejos do(a) filho(a).**

Esse genitor segue as instruções dadas pelo entrevistador, inclusive seguindo as ordens dadas (tocando as cores apropriadas). O genitor está tentando seguir as regras e ao mesmo tempo atender às necessidades do(a) filho(a). Se a criança não entende, então o genitor explica as regras. Se a criança não está interessada em seguir as regras, o genitor sensivelmente tenta fazer com que a criança siga as regras. O genitor que prejudica as necessidades do(a) filho(a) para seguir estritamente as regras irá pontuar menos nesse item. O genitor que é capaz de equilibrar as necessidades de seu(sua) filho(a) e as regras da tarefa irá pontuar mais.

6. **Esse pai/mãe é claro em seus pedidos de ajuda.**

Esse genitor se comunica de forma que seu(sua) filho(a) possa entender. Não é específico a instruções verbais ou não verbais, mas, sim, a uma clareza geral na comunicação.

7. **Esse pai/mãe é sensivelmente responsivo aos pedidos de seu(sua) filho(a) por ajuda, mesmo aos pedidos sutis e/ou não verbais.**

Quando a criança mostra que precisa de ajuda (verbalmente ou não verbalmente), o genitor percebe e responde apropriadamente. Esse genitor não ignora os sinais sutis ou óbvios de que a criança precisa de ajuda. Isso não inclui responder de uma forma irritada, frustrada ou hostil.

**Exemplos:** “[A criança não consegue achar o bloco] “Esse está difícil de encontrar, não é?”; “[A criança não consegue achar o bloco] Olhe aqui.”; [leva o bloco que a criança está procurando para mais perto dela].

8. **Esse pai/mãe é bom em reformular aquilo que seu(sua) filho(a) não entende.**

Quando a criança está tendo dificuldade em entender as orientações ou a tarefa, esse genitor percebe e ajusta suas instruções de forma que a criança possa entender melhor.

**Exemplos:** Genitor vê que a criança não consegue encontrar o pequeno bloco amarelo e diz: “Encontre aquele que tem apenas 4 círculos nele”; [Ao construir o modelo de robô] a criança não responde quando o genitor diz “Vamos começar pela parte de baixo” e o genitor ajusta dizendo: “Qual é a cor dos pés do robô?”
9. Esse pai/mãe é sensível ao que seu(sua) filho(a) sabe e/ou entende.

O genitor adota a perspectiva de seu(sua) filho(a) em relação ao que ele(a) sabe em qualquer tarefa dada. O genitor pode medir o nível de entendimento da criança e o que ela precisa para ser ajudada. Isso se refere a encontrar a *zona de desenvolvimento proximal* (isto é, o nível em que as instruções são mais benéficas para a criança- não tão fácil e não tão difícil).

**Exemplos:** dividindo a tarefa em pequenas partes; usando linguagem que é apropriada para o nível de desenvolvimento da criança; dando orientações básicas e apropriadas; percebendo quando a criança não entende; apoiando a independência da criança quando apropriado.

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### Construindo Mutualidade

10. Esse pai/mãe dá feedback positivo para apoiar seu(sua) filho(a).

O genitor responde às ações do(a) filho(a) com declarações, vocalizações e/ou comportamentos positivos.

**Exemplos:** “Bom trabalho”; “É isso aí”; “Sim, isso mesmo”; “Certo”; “Toca aqui! ”; [acenando que sim junto com as ações da criança.]

11. Esse pai/mãe promove a troca de turnos dentro da diade.

Este item é pontuado quando os genitores promovem a troca de turnos e a reciprocidade durante a interação (ao invés de interação unilateral). Isso pode ser explícito (por exemplo, “É a sua vez”) ou sutil (por exemplo, “O que devemos fazer agora?”). Isso pode ser feito de forma verbal ou não.

**Exemplos:** “Agora você tem que fazer o próximo”; “É a sua/minha vez”; Apontando para a criança de forma a transmitir que ela deveria jogar”; “Eu me pergunto, onde este vai...[ tentando obter uma opinião da criança].” Em interações altamente mutualistas/recíprocas, isso poderá ser sutil (por exemplo, os genitores sentam-se ligeiramente para trás e/ou olham para a criança quando terminam seu turno.)
Nota Técnica sobre a Tradução – Ana Laura Becker Aguiar


Para realizar a tradução foram pesquisados artigos acadêmicos específicos da área a fim de manter o mesmo padrão da linguagem técnica utilizada no Brasil.

A principal referência acadêmica utilizada foi o Núcleo de Infância e Família (NUDIF) da Universidade Federal do Rio Grande do Sul, que desenvolveu o Protocolo de Análise dos Comportamentos Parentais e Infantis e o Protocolo de Sequências responsivas e Não-Responsivas, que são instrumentos similares ao que se está traduzindo.

Além disso, os artigos do professor Cesar Augusto Piccinini são citados e referenciados em praticamente toda literatura brasileira encontrada sobre o tema. Por esse motivo, buscou-se seguir os termos utilizados por esse autor como principal referência.

O principal artigo utilizado para embasar a tradução foi um artigo do Piccinini sobre Diferentes Perspectivas na Análise da Interação Pais-Bebê/Criança (PICCININI et al., 2001) no qual é feita uma revisão de literatura apresentando as diferentes perspectivas de análise da interação pais-bébe/criança, inclusive apresentando as linguagens, termos e conceitos mais utilizados nos principais grupos de pesquisa brasileiros sobre a matéria.

Abaixo seguem destacados os principais termos técnicos traduzidos e a justificativa das escolhas de tradução.

- “Cognitive Sensitivity”: “Sensibilidade Cognitiva”

No artigo de Piccinini sobre Diferentes Perspectivas na Análise da Interação Pais-Bebê/Criança (PICCININI et al., 2001), o autor fala especificamente sobre uma escala de “sensibilidade materna” desenvolvida por Ainsworth, Blehar, Waters e Wall, em 1978, e ligada ao conceito de sensitividade, intrusividade e envolvimento. Nesse caso, o termo “sensitividade” pareceu referir-se especificamente a um método e/ou perspectiva específica de análise. Por outro lado, o termo “sensibilidade” materna também é citado neste mesmo artigo em diversas vezes tratando-se de diferentes perspectivas de análise da interação pais-bébe-criança, assim como em outros artigos. (WENDLAND, 2001; MENEGATTI, 2015; PICCININI et al., 2007).

Optou-se, portanto, em utilizar o termo “sensibilidade cognitiva” por ser um termo já utilizado pela literatura e que não necessariamente está relacionado a uma perspectiva de análise específica, evitando equívocos.

Além disso, a tradução de “sensitivity” como sensibilidade é explicitamente utilizada no artigo sobre a “Abordagem clínica das interações pais-bebé: perspectivas teóricas e metodológicas” (WENDLAND, 2001).

- “Coding”: “Protocolo”.

Segundo a literatura, a principal referência de sistema de codificação desenvolvido aqui no Brasil integra os instrumentos conhecidos como: “Protocolo de Análise dos Comportamentos Parentais e Infantis” e o “Protocolo de Sequências responsivas e Não-Responsivas” (PICCININI et al., 2007).

Nos artigos também encontrei referência aos termos “Folha de Registro de Interação e Atividades” e “sistema de codificação” (PICCININI et al., 2001; MENEGATTI, 2015).

Optei por “Protocolo” por me parecer um termo mais corriqueiro e rigoroso tecnicamente para referir-se a esse tipo de instrumento. Logo, seria possível traduzir esse documento como “Protocolo de Análise em Pequenos Intervalos da Interação Diádica Pais-Filhos” uma vez que é uma proposta de codificação específica.
Nota Técnica sobre a Tradução – Ana Laura Becker Aguiar

- “Thin Slice”: é um método de análise em “pequenos intervalos de tempo”.

A tradução como “pequenos intervalos de tempo” foi utilizada no artigo de Patrícia Alvarenga e Maria Ângela Cerezo para se referir ao artigo de Nalini Ambody e Robert Rosenthal intitulado “Thin Slices of Expressive behavior as Predictors of Interpersonal Consequences: a Meta-Analysis”. (ALVARENGA & CEREZO, 2014.)

Parece que não há em português um termo técnico consolidado para referir-se a esse método, pois não foi encontrada nenhuma outra tradução.

Optou-se por usar “pequenos intervalos”, especialmente para o título: “Protocolo de Análise em Pequenos Intervalos da Interação Diádica Pais-Criança”, uma vez que “pequenos intervalos de tempo” beira o pleonasmo.

- “Dyadic Interaction”: “interação diádica”.


Acredita-se que utilizar um termo diferente para a tradução comprometeria a rigor técnico.

- “This parent”: “Esses pais/mães” ou “genitores”.

No artigo altamente referenciado do Piccinini sobre Responsividade como foco de interação mãe-bebê e pai-bebê, em que apresenta o Protocolo de Análise dos Comportamentos parentais e Infantis, o autor utilizou o termo “pai/mãe” e “genitor”. (PICCININI et al., 2007).

Piccinini parece ser uma grande referência sobre o tema e, portanto, optou-se por seguir a mesma linguagem que autor utilizou nos seus artigos e pesquisas.

Esse termo também é reproduzido na recente tese de doutorado que utilizou/adaptou o protocolo de Interação Pais-filhos. (MENEGATTI, 2015).

Notas-se que o termo cuidador também é utilizado, mas com menos frequência e em uma literatura que é mais atenta para a diversidade dos arranjos familiares – o que não pareceu ser o caso desses autores especificamente. De qualquer forma, para optar pela utilização do termo “cuidador” seria preciso analisar com mais profundidade a linha dos autores e, o contrário, ou seja, utilizar os termos “pai/mãe” não pareceu prejudicar a tradução. Tanto mais porque não pareceu haver um rigor e uniformidade acadêmica na referência “aos pais” (“parents”) nesse contexto.

Notas-se ainda, que quando a literatura é focada na mãe essa informação fica explícita (mother-child) – o que não é o caso desses textos.

Ressalta-se que se optou por usar o termo “pai/mãe” abreviado para facilitar a compreensão, dado que se refere a um questionário.

Quanto ao documento com as orientações para utilização do Protocolo, optou-se por usar sempre o termo “genitor” para evitar o desgaste de escrever sempre “esse pai ou essa mãe” ou “ele/ela”, o que poderia prejudicar a compreensão do texto e cansar o leitor. Como Piccinini utilizou o termo “genitor” em seu artigo no mesmo contexto, achou-se adequado seguir a mesma linha – que também é perseguida por outros autores.

A literatura parece preferir a utilização do termo interação “pais-filhos”, no plural. Como o questionário está direcionado especificamente para um pai ou mãe específico e no singular (this
Nota Técnica sobre a Tradução – Ana Laura Becker Aguiar

parent), optou-se por usar o termo mais específico “esse pai/mãe” nas perguntas do Protocolo para manter o mesmo tom da linguagem.

Uma possível sugestão, que parece ser comum no campo dos protocolos de psicologia, seria preparar dois documentos diferentes um para o pai e outro para a mãe.

- “Responsive”: “responsivo”.

O termo é utilizado vastamente utilizado na literatura especializada. Inclusive, um dos principais artigos de Piccinini sobre o tema está intitulado como “Responsividade como foco de interação mãe-bebê e pai-bebê”. (PICCININI et al., 2007).

- “Child”: “criança”

A literatura utiliza o termo “interação Pais-Bebê/Criança”, no genérico, mas também “pais-filhos”. Optou-se por sempre que possível usar o termo “filhos” por refletir melhor a relação de afeto (parental) que se está analisando, pois o termo “criança” em alguns contextos não detona a relação de afeto que se está tentando captar. (PICCININI et al., 2001; MENEGATTI, 2015)

Não se utilizou o termo bebê por entender que se fosse esse o caso o termo utilizado em inglês teria que ser “infant” e não “child”, como em outros artigos.

- “Zone of proximal development”: “zona de desenvolvimento proximal”.


- Sugestões de forma:

O último item do documento de orientações sobre a pergunta 11 é o único que está no plural, todos os demais itens estão se referindo a “this parent”. Sugiro deixar os itens todos no singular. Optou-se por deixar a tradução como estava no original, portanto, no plural.

Além disso, parece faltar paralelismo entre os sub-títulos dos itens “Communicative Clarity”, “Mind-reading” e “Mutuality-Building”. Sugere-se deixar todos os sub-títulos no gerúndio. De qualquer forma, a tradução foi realizada conforme o original.
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Referências Bibliográficas:


Appendix 5: Consent Form/Information Sheet for Potential Raters (English and Portuguese)

CONSENT FORM FOR POTENTIAL RATERS – FOCUS GROUP

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada
Faculty Supervisor: Dr. Jennifer Jenkins, University of Toronto, Canada
Co-investigator: Dr. Aluísio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPel), Pelotas, Brazil

A signed and dated copy of this consent form will be left with you. Together with the information sheet, it should give you the basic idea of what the research is about and what you are being asked to do. Please take the time to read these documents carefully. Feel free to ask questions about anything that is unclear before you sign.

I, ____________________________________, understand that this study is looking at the cross-cultural adaptation and validation of the PICCOLO checklist and the Maternal Cognitive Sensitivity scale in Brazil. They are parenting observational measures developed in the United States and in Canada, respectively. This work will help us understand whether the PICCOLO and the Maternal Cognitive Sensitivity scale are culturally appropriate tools for measuring mother-child interaction in Brazil, especially for children between 12 and 24 months.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPel – Federal University of Pelotas), Brazil.

I understand I will take part in a focus group, a form of group interview, which will explore participant’s comprehension of the Brazilian-Portuguese adapted tools. This stage will help us test the adapted versions for content validity. This group discussion will last around 2 hours. With my permission, the focus group discussion will be audio recorded. I understand that this will allow researchers to listen to this record later and remember the key points in more detail than is possible taking notes during a group discussion. I am assured that all the information collected will be used only by the research team for this study.

I am assured that all information collected will be securely stored and will be kept confidential by researchers. Identification numbers will be used so that my name will not be stored with the information collected. I understand that the audio records will be stored for 5 years, and after this period they will be destroyed. I understand that in order to maintain confidentiality among participants, I must refrain from discussing and mentioning the focus group debate outside of the group.

I have received answers to all questions I have asked about the study. I understand that taking part in this study is voluntary. I can get services from the local public health department or from the Medical School of Universidade Federal de Pelotas (UFPel) whether or not I take part in the study. I know that I can stop taking part at any time without explanation, even after I have signed this form. If this happens, my contributions will not be included in the study results.

I understand if I have questions about this form or the study, I can call the principal investigator.

I agree to take part in this study.

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**TERMOS DE CONSENTIMENTO LIVRE E ESCLARECIDO DO POTENCIAL AVALIADOR – GRUPO FOCAL**

**Título do Projeto de Pesquisa:** Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

**Pesquisadora:** Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá  
**Supervisora acadêmica:** Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá  
**Co-investigador:** Dr. Aluíso J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Uma cópia assinada e datada desse Termo de Consentimento Livre e Esclarecido permanecerá com você. Junto com a carta informativa, esse Termo proporcionará uma ideia básica sobre a pesquisa e o que você está sendo solicitado(a) a fazer. Leia esses documentos com atenção. Sinta-se à vontade para esclarecer suas dúvidas antes de assinar.

Eu, ___________________________________________, compreendendo que esse estudo objetiva a adaptação transcultural e a validação dos instrumentos: PICCOLO e Sensibilidade Cognitiva Materna no Brasil. Eles são instrumentos para avaliar interações parentais, a partir de observação, desenvolvidos nos Estados Unidos e no Canadá, respectivamente.

Esse trabalho permitirá compreender se o PICCOLO e o instrumento Sensibilidade Cognitiva Materna são medidas culturalmente adequadas para avaliar as interações mãe-criança no Brasil, especialmente para crianças entre 12 e 24 meses de idade.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil.

Eu compreendo que eu vou participar em 1 (um) grupo focal, uma forma de entrevista grupal, que vai discutir se as versões adaptadas para o Português, dos instrumentos, estão compreensíveis para os participantes. Esse estágio ajudará a testar a validade de conteúdo das versões adaptadas. Essa discussão grupal vai durar cerca de 2 (duas) horas. Com a minha permissão, a discussão do grupo focal será gravada em áudio. Eu compreendo que isso permitirá que os pesquisadores ouçam a gravação posteriormente e recordem-se dos pontos principais com mais detalhes do que seria possível se apenas tomassem nota durante a discussão. Eu fui informada(o) de que todas as informações coletadas serão usadas apenas pela equipe de pesquisa desse estudo e para fins científicos.

Eu fui informada(o) de que todas as informações coletadas serão armazenadas com segurança e serão mantidas em sigilo pelos pesquisadores. Números de identificação serão utilizados de modo que meu nome não será mantido junto com a informação coletada. Eu compreendo que as gravações de áudio serão armazenadas por 5 (cinco) anos e destruídas depois desse período. Eu compreendo que para manter o sigilo entre os participantes, eu devo me abster de discutir e mencionar o debate do grupo focal fora do grupo.

Tive oportunidade de esclarecer minhas dúvidas, sendo que todas as minhas perguntas foram respondidas claramente. Eu compreendo que minha participação nesse estudo é voluntária. Se eu resolver não participar mais do estudo isto não vai me causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Eu sei que posso interromper a minha participação a qualquer momento sem que dar qualquer justificativa para tal, mesmo depois de ter assinado esse Termo do Consentimento Livre e Esclarecido. Se isso ocorrer, minhas contribuições não serão incluídas nos resultados do estudo.

Eu compreendo que se eu tiver alguma dúvida sobre esse Termo ou estudo, eu posso ligar para a pesquisadora principal.

Eu concordo em participar desse estudo.

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STUDY INFORMATION SHEET FOR POTENTIAL RATERS – FOCUS GROUP

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada
Faculty Supervisor: Dr. Jennifer Jenkins, Ontario Institute for Studies in Education, University of Toronto, Canada
Co-investigator: Dr. Aluísio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPel), Pelotas, Brazil

You are being invited to take part in this research project that will investigate whether the PICCOLO checklist, developed in the United States of America, and the Maternal Cognitive Sensitivity scale, developed in Canada, are valid in Brazil. They are observational parent-child interaction assessment tools designed to be used by primary health practitioners and home visitors.

Specifically, the objective of this focus group is to evaluate the Brazilian-Portuguese PICCOLO and Maternal Cognitive Sensitivity first versions by the target population, i.e., the potential raters. This stage will help us test the adapted versions for content validity.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPel – Federal University of Pelotas), Brazil. About 8 (eight) Brazilian primary health care practitioners are being invited to take part in this focus group.

Why this study is important:
Parent-child interaction impacts child development and well-being. The PICCOLO checklist and the Maternal Cognitive Sensitivity scale measure what parents can do to support their children’s development and learning.

What we are asking you to do:
You will be asked to take part in one (1) focus group that will last for about 2 hours, and will take place at the Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), UFPel. Address: Rua Marechal Deodoro 1160, 3º piso, Centro, Pelotas, RS, Brazil. You will be asked to read the instrument items, their labels, and the response scale, and decide on a 5-point scale the extent to which each item is clear and understandable. Then, the group will be asked to discuss the items that were scored as 1, 2 or 3 on the comprehensibility scale. With your permission, we will audio record the focus group discussion. This will allow researchers to listen to this record later and remember the key points in more detail than is possible taking notes during a group discussion.

What are the risks?
There are no known risks connected with this study, as all collected information will be confidential.

What are the benefits?
Primary health care providers can benefit for easy-to-administer and easy-to-score measures of parenting. We will prepare a final report at the end of the study, which will give results without identifying participants. We will mail this report to you.

What are your rights and how is your privacy protected?
You are under no obligation to take part in this study. Whether you take part or not will not affect any services you might receive from your local public health department or from the Medical School of Universidade Federal de Pelotas (UFPel). If you agree to take part, you may change your mind at any time and stop. All the information collected will be kept confidential by researchers and will be used only by the research team for this study. In order to maintain confidentiality among participants, we kindly ask you to refrain from discussing and mentioning the focus group debate outside of the group. You will receive a signed copy of the consent to keep.

Your name will not be stored with any information collected. The audio records will be kept in a locked cabinet in the principal researcher’s office. They will be stored by identification number. We will keep this information securely stored for 5 years, and then the information collected will be destroyed.

If you have any questions about the study, please call.
CARTA INFORMATIVA PARA POTENCIAL AVALIADOR – GRUPO FOCAL

Título do Projeto de Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisadora: Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá
Supervisora acadêmica: Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá
Co-investigador: Dr. Aluísio J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Você está sendo convidado(a) a participar desse projeto de pesquisa que investigará se os instrumentos PICCOLO, desenvolvido nos Estados Unidos, e Sensibilidade Cognitiva Materna, desenvolvido no Canadá, são válidos no Brasil. Eles são instrumentos para avaliar as interações mãe-criança, a partir de observação, e próprios para uso por profissionais da atenção primária à saúde e visitadores domiciliares.

Especificamente, o objetivo desse grupo focal é submeter a primeira versão em português dos instrumentos PICCOLO e Sensibilidade Cognitiva Materna à avaliação da população alvo, isto é, de potenciais avaliadores. Essa etapa ajudará a testar a validade de conteúdo das versões adaptadas.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil. Cerca de 8 (oito) profissionais brasileiros da atenção primária à saúde estão sendo convidados para participar desse grupo focal.

Porque esse estudo é importante:
Interações mãe-criança impactam no bem-estar e desenvolvimento infantil. Os instrumentos PICCOLO e Sensibilidade Cognitiva Materna avaliam o que as mães (principais cuidadores) fazem para apoiar a aprendizagem e o desenvolvimento de suas crianças.

O que você está sendo solicitado a fazer:
Você será solicitado(a) a participar de um grupo focal de, aproximadamente, 2 horas de duração que será realizado no Centro de Pesquisas Epidemiológicas da Universidade Federal de Pelotas (UFPel). Endereço: Rua Marechal Deodoro 1160, 3º piso, Centro, Pelotas, RS, Brasil. Você será solicitado(a) a ler cada um dos instrumentos (itens, descrições dos itens, escala de resposta) e decidir a partir de uma escala de 5 pontos o nível de clareza e compreensão de cada item. Após, o grupo será solicitado a discutir os itens que obtiveram escores 1, 2 ou 3 na escala de compreensão. Com a sua permissão, nós iremos gravar em áudio a discussão do grupo focal. Isso permitirá que os pesquisadores ouçam a gravação posteriormente e recordem-se dos pontos principais com mais detalhes do que se apenas tomassem nota durante a discussão.

Quais são os riscos? Não há riscos conhecidos vinculados a esse projeto. Todas as informações coletadas serão confidenciais.

Quais são os benefícios?
Profissionais da atenção primária à saúde poderão se beneficiar com a disponibilização de instrumentos de parentalidade de fácil aplicação e avaliação. Nós vamos elaborar um relatório ao final do estudo o qual apresentará os resultados sem identificar individualmente os participantes. Nós enviaremos uma cópia desse relatório pelo correio para você.

Quais são seus direitos e como a sua privacidade é protegida?
A sua participação no estudo é voluntária. Se você resolver não participar mais do estudo isto não vai lhe causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Se você concordar em participar, você ainda poderá mudar de ideia e, a qualquer momento, interromper sua participação. Toda a informação coletada será mantida em sigilo pelos pesquisadores e será usada apenas pela equipe de pesquisadores desse estudo. Visando manter o sigilo entre os participantes, nós gentilmente pedimos que você se abstenha de discutir ou mencionar o debate do grupo focal fora do grupo. Você receberá uma cópia do Termo de Consentimento Livre e Esclarecido assinada para guardar com você. Seu nome não será mantido com nenhuma informação coletada. Os arquivos de áudio serão guardados em um armário chaveado no escritório da pesquisadora responsável pelo estudo. Eles serão armazenados com um número de identificação. Nós manteremos essa informação armazenada e confidencial por 5 (cinco) anos, e posteriormente, os dados serão destruídos.

Se você tem alguma dúvida sobre o estudo, por favor ligue.

SENSIBILIDADE COGNITIVA
Protocolo de codificação de interações breves em diades pais-criança

Prezado especialista,

Estamos realizando a adaptação transcultural da escala de “Sensibilidade Cognitiva” (no original, em inglês, Cognitive Sensitivity). Trata-se de um instrumento observacional cujo preenchimento é realizado a partir da filmagem, durante 5 minutos, da interação mãe/pai/cuidador criança a partir de 18 meses de idade.

Elaborado por pesquisadores da Universidade de Toronto, no Canadá, o instrumento avalia comportamentos parentais em relação à criança pequena, mais especificamente o quanto a mãe/pai/cuidador principal é sensível e responde de maneira apropriada às cognições que infere ter seu filho(a) quando ambos estão envolvidos em uma tarefa de cooperação cognitivamente desafiadora. O construto ‘sensibilidade cognitiva’, elaborado pelos autores desse instrumento, é composto por três aspectos que se sobrepõem: clareza na comunicação, leitura da mente e desenvolvimento da mutualidade. A escala utiliza um sistema de codificação baseado em avaliações impressionistas (thin slice judgments), isto é, observações breves da interação mãe/pai/cuidador principal com a criança. O instrumento tem 11 itens.

Gostaríamos de convidá-lo(a) para participar como juiz deste instrumento, em fase de Análise de Conteúdo. Este estágio objetiva verificar se a versão adaptada do instrumento para o português (os itens, as instruções e a escala de resposta) está compreensível para os potenciais avaliadores/codificadores, ou seja, aqueles que farão o preenchimento da escala logo após assistirem aos vídeos das interações. O instrumento foi desenvolvido para ser utilizado em programas de atenção primária à saúde.

Você será solicitado(a) a ler os itens do instrumento e decidir, em uma escala de 5 pontos (1 = Impossível compreender, 2 = Confuso, 3 = Em dúvida, 4 = Compreensível, 5 = Compreendido), o grau de clareza/compreensão de cada item. Na etapa seguinte, você lerá o título, as instruções e a escala de pontuação do instrumento e decidirá, com base na mesma escala de 5 pontos, em que medida eles são compreensíveis. Comentários (sugestão de nova redação; indicação da palavra que não está compreensível, etc) são bem vindos e devem ser feitos no próprio instrumento de avaliação.

No fim, o grupo será solicitado a discutir os itens que foram pontuados como 1, 2 ou 3 na escala de clareza/compreensão. Com base nas sugestões e comentários dos participantes, será desenvolvida uma versão intermediária da escala de Sensibilidade Cognitiva.

Com o instrumento você também está recebendo um Termo de Consentimento Livre e Esclarecido (TCLE) e uma Carta Informativa. Pedimos a gentileza de devolver o TCLE assinado, junto com a sua avaliação. Pedimos para não divulgar os itens deste instrumento, por se tratar de um teste que ainda está em fase de adaptação cultural, e reforçamos a necessidade de total sigilo dos itens avaliados.
Muito obrigada pela contribuição!

Alessandra Schneider [estudante de doutorado – U. of T.]

**SENSIBILIDADE COGNITIVA**
Protocolo de codificação de interações breves em diádes pais-criança

<table>
<thead>
<tr>
<th>Nº</th>
<th>Dimensão/Item</th>
<th>Análise Semântica</th>
<th>Comentários</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>compreender</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>DIMENSÃO: Clareza na Comunicação</strong></td>
<td></td>
<td>[Sugestão de nova redação; indicação da palavra que não está compreensível, etc]</td>
</tr>
<tr>
<td>1</td>
<td>A mãe/pai dá instruções verbais claras e específicas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>A mãe/pai dá instruções não verbais positivas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>A mãe/pai lembra a criança dos objetivos/regras da tarefa.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A mãe/pai procura completar a tarefa de maneira sensível às necessidades e desejos da criança.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>A mãe/pai procura seguir as regras de maneira sensível às necessidades e desejos da criança.</td>
<td></td>
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<tr>
<td>6</td>
<td>A mãe/pai pede ajuda de maneira clara.</td>
<td></td>
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<tr>
<td></td>
<td><strong>DIMENSÃO: Leitura da Mente</strong></td>
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<tr>
<td>7</td>
<td>A mãe/pai responde sensivelmente aos pedidos de ajuda da criança, mesmo os sutis ou não verbais.</td>
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<tr>
<td>8</td>
<td>A mãe/pai consegue reformular instruções que a criança não entende.</td>
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<tr>
<td>9</td>
<td>A mãe/pai é sensível quanto ao que a criança sabe e/ou compreende.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>DIMENSÃO: Desenvolvimento da Mutualidade</strong></td>
<td></td>
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<tr>
<td>10</td>
<td>A mãe/pai oferece <em>feedback</em> positivo para reforçar o comportamento da criança.</td>
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</tbody>
</table>
A mãe/pai incentiva a alternância na interação com a criança.

**SENSIBILIDADE COGNITIVA**
Protocolo de codificação de interações breves em diáades pais-criança

<table>
<thead>
<tr>
<th>Análise Semântica</th>
<th>Comentários</th>
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</table>

**TÍTULO:** SENSIBILIDADE COGNITIVA
Protocolo de codificação de interações breves em diáades pais-criança

**INSTRUÇÕES**
Responda às perguntas abaixo com base na interação da mãe/pai especificamente com esta criança.

Pontue rapidamente, de acordo com suas reações iniciais e impressões gerais; não se detenha demais em nenhum item.

Usetodas as informações disponíveis para formar uma reação, incluindo as não verbais.

Tente usar toda escala de 5 pontos, não deixe itens em branco (dê a cada item seu melhor palpite/avaliação).

Observe somente por 5 minutos. Se ultrapassar 5 minutos, interrompa.

**ESCALA DE PONTUAÇÃO**

[Dica] Dê sua impressão de como a mãe/pai interage com a criança no dia-a-dia, com base no que você observou:

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<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nada verdadeiro</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>Muito verdadeiro</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Nunca ocorre</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>Ocorre intensamente</td>
</tr>
</tbody>
</table>
CONSENT FORM FOR EXPERT COMMITTEE MEMBERS

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada
Faculty Supervisor: Dr. Jennifer Jenkins, University of Toronto, Canada
Co-investigator: Dr. Aluísio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPe), Pelotas, Brazil

A signed and dated copy of this consent form will be left with you. Together with the information sheet, it should give you the basic idea of what the research is about and what you are being asked to do. Please take the time to read these documents carefully. Feel free to ask questions about anything that is unclear before you sign.

I, ____________________________, understand that this study is looking at the cross-cultural adaptation and validation of the PICCOLO checklist and the Maternal Cognitive Sensitivity scale in Brazil. They are parenting observational measures developed in the United States and in Canada, respectively.

This work will help us understand whether the PICCOLO and the Maternal Cognitive Sensitivity scale are culturally appropriate tools for measuring mother-child interaction in Brazil, especially for children between 12 and 24 months.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPe – Federal University of Pelotas), Brazil.

I understand I will take part in an expert committee. I, as a committee member, will be responsible for reviewing all of the previous translations and written reports, making decisions on the items, and contributing to consolidate a revised instruments versions. I understand I will have to make decisions between the original tools, in English, and the revised versions, in Portuguese, in four areas of equivalence: (1) Semantic equivalence, which encompasses these questions: (i) do the words mean the same thing?; (ii) are there multiple meanings to a given item?; and (iii) are there grammatical difficulties in the translation?; (2) Idiomatic equivalence: colloquialisms are difficult to translate and the committee may have to formulate or identify an equivalent expression in the target version; (3) Experiential equivalence: the checklist item may have to be replaced by a similar item that is experienced in the target culture; and (4) Conceptual equivalence: often words hold a different conceptual meaning between cultures. I understand I will have to dedicate around 4 (four) hours to complete the above described tasks.

I am assured that all information collected will be securely stored and will be kept confidential. Identification numbers will be used so that my name will not be stored with the information collected. I understand that the information will be stored for 5 years, and after this period it will be destroyed.

I have received answers to all questions I have asked about the study. I understand that taking part in this study is voluntary. I know that I can stop taking part at any time without explanation, even after I have signed this form. If this happens, my contributions will not be included in the study results.

I understand if I have questions about this form or the study, I can call the principal investigator.

I agree to take part in this study.

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<th>Signature:</th>
<th>Name:</th>
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<th>Date (DD/MM/YY): <strong><strong>/</strong></strong>/____</th>
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</table>
TERMOS DE CONSENTIMENTO LIVRE E ESCLARECIDO DE MEMBRO DO COMITÊ DE ESPECIALISTAS

**Título do Projeto de Pesquisa:** Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

**Pesquisadora:** Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá

**Supervisora acadêmica:** Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá

**Co-investigador:** Dr. Aluíso J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Uma cópia assinada e datada desse Termo de Consentimento Livre e Esclarecido permanecerá com você. Junto com a carta informativa, esse Termo proporcionará uma ideia básica sobre a pesquisa e o que você está sendo solicitado a fazer. Leia esses documentos com atenção. Sinta-se à vontade para esclarecer suas dúvidas antes de assinar.

Eu, __________________________________________, compreendo que esse estudo objetiva a adaptação transcultural e a validação dos instrumentos: PICCOLO e Sensibilidade Cognitiva Materna no Brasil. Eles são instrumentos para avaliar interações parentais, a partir de observação, desenvolvidos nos Estados Unidos e no Canadá, respectivamente.

Esse trabalho permitirá compreender se o PICCOLO e o instrumento Sensibilidade Cognitiva Materna são medidas culturalmente adequadas para avaliar interações mãe-criança no Brasil, especialmente para crianças entre 12 e 24 meses de idade.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil.

Eu compreendo que eu vou participar de um comitê de especialistas. Eu, como membro do comitê, serei responsável por: revisar as versões em português dos instrumentos e os relatórios das traduções correspondentes, tomar decisões sobre a redação dos itens em português, além de contribuir para a consolidação da versão revisada, em português, dos instrumentos. Eu compreendo que eu terei que tomar decisões entre a versão original dos instrumentos, em inglês, e suas versões adaptadas, em português, em quatro (4) áreas de equivalência: (1) **Equivalência Semântica**, envolve responder a essas perguntas: (i) As palavras, em inglês e português, têm o mesmo significado? (ii) Existem múltiplos significados para um mesmo item? e (iii) Existem erros gramaticais na tradução?; (2) **Equivalência Idiomática**: coloquialismos são difíceis de traduzir. Talvez o comitê tenha que identificar uma expressão equivalente na cultura local; (3) **Equivalência Experiencial**: pode ocorrer que itens dos instrumentos originais necessitem ser substituídos por itens similares que sejam vivenciados na cultura brasileira; e (4) **Equivalência Conceitual**: frequentemente palavras têm significados conceituais diferentes em culturas diferentes. Eu compreendo que terei que dedicar cerca de 4 (quatro) horas para realizar as tarefas descritas acima.

Eu fui informada(o) que todas as informações coletadas serão armazenadas com segurança e serão mantidas em sigilo. Números de identificação serão utilizados de modo que meu nome não será mantido junto com a informação coletada. Eu compreendo que as informações serão arquivadas por 5 (cinco) anos e destruídas depois desse período.

Tive oportunidade de esclarecer minhas dúvidas, sendo que todas as minhas perguntas foram respondidas claramente. Eu compreendo que minha participação nesse estudo é voluntária. Eu sei que posso interromper a minha participação a qualquer momento sem ter que dar qualquer justificativa para tal, mesmo depois de ter assinado esse Termo do Consentimento Livre e Esclarecido. Se isso ocorrer, minhas contribuições não serão incluídas nos resultados do estudo.

Eu compreendo que se eu tiver alguma dúvida sobre esse Termo ou estudo, eu posso ligar para a pesquisadora principal.

Eu concordo em participar desse estudo.

<table>
<thead>
<tr>
<th>Assinatura:</th>
<th>Nome completo:</th>
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<tbody>
<tr>
<td>Assinatura da testemunha:</td>
<td>Data (D/M/A): <strong>/</strong>/___</td>
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</tbody>
</table>
STUDY INFORMATION SHEET FOR EXPERT COMMITTEE MEMBERS

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada
Faculty Supervisor: Dr. Jennifer Jenkins, Ontario Institute for Studies in Education, University of Toronto, Canada
Co-investigator: Dr. Aluísio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPe), Pelotas, Brazil

You are being invited to take part in this research project that will investigate whether the PICCOLO checklist, developed in the United States of America, and the Maternal Cognitive Sensitivity scale, developed in Canada, are valid in Brazil. These measures were designed to be used by primary health practitioners for observing parent-child interaction.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPe) – Federal University of Pelotas, Brazil. About 5 (five) Brazilian specialists are being invited to take part in this committee.

Specifically, you are being invited to take part in an Expert Committee which will evaluate whether the original instruments, in English, and their adapted versions, in Portuguese, are conceptually and functionally equivalent, i.e. whether the translations will be understandable and elicit the same answers in the new setting.

Why this study is important:
Mother-child interaction impacts child development and well-being. Parenting behaviours, however, reflect cultural values, customs, and beliefs. Primary health care staff can benefit from culturally adapted, easy-to-administer measures of parenting.

What we are asking you to do:
You will be asked to take part in an expert committee group. You, as a committee member, will be responsible for reviewing all of the previous translations and written reports, making decisions on the items, and contributing to consolidate a revised instruments version. You will have to make decisions between the original tools, in English, and the revised versions, in Portuguese, in four areas of equivalence: (1) Semantic equivalence, which encompasses these questions: (i) do the words mean the same thing? (ii) are there multiple meanings to a give item? (iii) are there grammatical difficulties in the translation?; (2) Idiomatic equivalence: colloquialisms are difficult to translate and the committee may have to formulate or identify an equivalent expression in the target version; (3) Experiential equivalence: the checklist item may have to be replaced by a similar item that is experienced in the target culture; and (4) Conceptual equivalence: often words hold a different conceptual meaning between cultures. You will have to dedicate around 4 (four) hours to complete the above described tasks.

What are the risks?
There are no known risks connected with this study, as all collected information will be confidential.

What are the benefits?
This work will help us understand how Brazilian parents engage in with their up to two years old child. That knowledge will help us to plan better services for young children and their parents to promote positive relationships. We will prepare a final report at the end of the study. It will give results without identifying participants. We will mail a copy of this report to you.

What are your rights and how is your privacy protected?
You are under no obligation to take part in this study. Whether you take part or not will not affect any services you might receive from your local public health department or from the Medical School of Universidade Federal de Pelotas (UFPe). If you agree to take part, you may change your mind at any time and stop. All the information collected will be kept confidential and will be used only by the research team for this study. You will receive a signed copy of the consent to keep.

Your name will not be stored with any information collected. We will keep this information securely stored for 5 years, and then the information collected will be destroyed.

If you have any questions about the study, please call.
CARTA INFORMATIVA PARA MEMBRO DO COMITÊ DE ESPECIALISTAS

Título do Projeto de Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisadora: Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá
Supervisora acadêmica: Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá
Co-investigador: Dr. Aluísio J.D. Burros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Você está sendo convidado(a) a participar desse projeto de pesquisa que investigará se os instrumentos PICCOLO, desenvolvido nos Estados Unidos, e Sensibilidade Cognitiva Materna, desenvolvido no Canadá, são válidos no Brasil. Eles são instrumentos próprios para uso por profissionais da atenção primária à saúde para observar as interações mãe-criança.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil. Cerca de 5 (cinco) especialistas brasileiros estão sendo convidados para participar desse comitê.

Especificamente, você está sendo convidado(a) a participar de um Comitê de Especialistas que irá avaliar se os instrumentos originais, em inglês, e suas versões adaptadas, em português, são conceitualmente e funcionamente equivalentes, ou seja, se as traduções são compreensíveis e adequadas à cultura brasileira.

Porque esse estudo é importante:
Interações mãe-criança impactam no bem-estar e desenvolvimento infantil. Comportamentos parentais, entretanto, refletem valores culturais, costumes e crenças. Profissionais da atenção primária à saúde podem se beneficiar com a disponibilização de instrumentos de parentalidade adaptados culturalmente e de fácil aplicação.

O que você está sendo solicitado a fazer:
Vocẽ será solicitado(a) a participar de um comitê de especialistas. Você, como membro do comitê, será responsável por: revisar as versões em português dos instrumentos e os relatórios das traduções correspondentes, tomar decisões sobre a redação dos itens em português, além de contribuir para a consolidação da versão revisada, em português, dos instrumentos. Você terá que tomar decisões entre a versão original dos instrumentos, em inglês, e suas versões adaptadas, em português, em quatro (4) áreas de equivalência: (1) Equivalência Semântica, envolve responder a essas perguntas: i) As palavras, em inglês e português, têm o mesmo significado? (ii) Existem múltiplos significados para um mesmo item? e (iii) Existem erros gramaticais na tradução?; (2) Equivalência Idiomática: coloquialismos são difíceis de traduzir. Talvez o comitê tenha que identificar uma expressão equivalente na cultura local; (3) Equivalência Experencial: pode ocorrer que itens dos instrumentos originais necessitem ser substituídos por itens similares que sejam vivenciados na cultura brasileira; e (4) Equivalência Conceitual: frequentemente palavras têm significados conceituais diferentes em culturas diferentes. Você terá que dedicar cerca de 4 (quatro) horas para realizar as tarefas descritas acima.

Quais são os riscos?
Não há riscos conhecidos vinculados a esse projeto. Todas as informações coletadas serão confidenciais.

Quais são os benefícios?
Esse trabalho nos ajudará a compreender como as mães (principais cuidadores) interagem com suas crianças de até 2 (dois) anos de idade. Esse conhecimento ajudará a planejar serviços mais adequados para crianças pequenas e suas famílias para promover relacionamentos positivos. Nós vamos elaborar um relatório ao final do estudo o qual apresentará os resultados sem identificar individualmente os participantes. Nós enviaremos uma cópia desse relatório pelo correio para você.

Quais são os seus direitos e como a sua privacidade é protegida?
A sua participação no estudo é voluntária. Se você resolver não participar mais do estudo isto não vai lhe causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Se você concordar em participar, você ainda poderá mudar de ideia e, a qualquer momento, interromper sua participação. Toda a informação coletada será mantida em sigilo e será usada apenas pela equipe de pesquisadores desse estudo. Você receberá uma cópia do Termo de Consentimento Livre e Esclarecido assinada para guardar com você.

Seu nome não será mantido com nenhuma informação coletada. Nós manteremos essa informação armazenada e confidencial por 5 (cinco) anos, e posteriormente, os dados serão destruídos.

Se você tem alguma dúvida sobre o estudo, por favor ligue.
Appendix 8: Back Translation of Cognitive Sensitivity-BR Scale

I, JOHN STEPHEN MORRIS, a Certified Public Translator registered at the “Junta Comercial do Distrito Federal” under no. 032, do hereby declare for all due purposes and effects that the text below is a true and exact translation of the document submitted to me.

Communicative clarity; Thought-reading; Development of mutuality.

The caregiver provides clear and specific verbal instructions. This item refers to verbal commands with specific and nongeneric information. The caregiver provides information that is sufficient for the child to complete the task, while avoiding vagueness or ambiguity.

Examples: “Place the large blue block alongside the small yellow block”, “Count four circles and then put it here”, “It is the light green block”, “Let’s separate the blocks: you take the light blue blocks and I’ll take the dark blue blocks”; instead of “Put this one there”, “Give me that one”, “Separate the blocks”.

Additional information for Brazilian coders: If the caregiver cites the color or shape at least once, score “2”; if the color or shape is cited more than once, score “3”. Score “5” if the caregiver cites the color AND shape at least once or cites the color or shape several times.

The caregiver provides positive nonverbal instructions. This item refers to the use of physical actions to communicate what the child should then do, including
modeling. The actions are considered “positive” to the extent in which they foster task realization in a collaborative, nonaggressive and nonhostile manner.

Examples: Guide the child’s hand; point to the correct place; point to the figure; point to an object and suggest that the child pick it up; serve as a model for the child (“Look what mommy is going to do” or “Look here [show how the child should do something]”).

The caregiver reminds the child of the objectives/rules of the task. The caregiver creates a context for the activity, explaining the general idea of the task to the child, together with the objectives and steps to be followed.

Examples: “Remember that we are trying to copy this figure”; “We want to build a house”; “We want to place all the blue blocks down below”; “Now let’s assemble the arm”; “Don’t forget that we only have 5 minutes”.

Additional information for Brazilian coders: When the caregiver provides only a general idea of the task over the course of 5 minutes, stating, for example, “Put it here”, “Put it inside here”, “Don’t remove it, fit it in”, score “2”. If the caregiver divides the task and provides step-by-step instructions aligned with the objectives/rules, score “3”. Examples include: “Put the heart here together with mommy’s”; “Where is the one equal to this one? Where is the yellow one [piece]? Put it here”;
"Where do you have to put this one?"; [mother points to the peg and says] "Here is the matching one". Scoring "4" or "5" demands that the caregiver verbalize the objectives/rules of the task (Example: "We have to place the pieces with the same shape together" AND/OR "We have to place the pieces of the same color together in the same peg") aside from giving step-by-step instructions.

The caregiver seeks to complete the task in a manner that is sensitive to the child’s needs and desires. This item describes the clarity with which the caregiver informs the child that there is a task to be completed in which he/she is involved, thus stimulating the child’s participation. The caregiver demonstrates involvement in the activity and effort to complete it. If the child does not seem particularly interested in the task or experiences difficulty, the caregiver will seek to reflect as much on the desires/needs of the child as on the objective of the task in a highly sensitive manner. The activity does not have to be performed correctly, but the caregiver should try to follow the structure of the task. A caregiver who ignores the child’s need to complete the task will have a lower score in this item, as will a caregiver who does not try to model the structure and objectives of the activity. A caregiver who duly considers the needs of the child, together with the demands of the task should receive a
Additional information for Brazilian coders: Observe whether the caregiver is engaged in the task and in interaction with the child. A caregiver who simply allows the child to do as he/she pleases without providing instructions or guidance will receive a lower score. Observe whether the caregiver’s behavior shows a balance between allowing the child to explore and experiment the task and guiding the child on how to perform the task. When the child has a difficult temperament and, despite this, the caregiver moves forward trying to keep the child involved in the task without adopting negative attitudes in relation to the child, this means that the caregiver is sensitive and should receive a higher score.

The caregiver seeks to follow the rules in a manner sensitive to the child’s needs and desires. The caregiver follows the instructions of the interviewer, including any rules cited (e.g., touch the correct colors), while giving due consideration to the needs of the child. If the child does not understand, the caregiver will then explain the rules. If the child does not show interest in following the rules, the caregiver will seek in a sensitive way to lead the child to follow the rules. A caregiver who ignores the needs of the child in order to strictly follow the rules will
receive a lower score under this item. A caregiver who gives due consideration to the needs of the child and to the rules of the task at hand should receive a higher score.

The caregiver asks for help in a clear manner. The caregiver communicates in such a way that the child is able to understand. This item does not refer specifically to verbal or nonverbal instructions, but rather to the general clarity of communications.

The caregiver responds to the child’s requests for help in a sensitive manner, even when they are subtle and/or nonverbal. When the child demonstrates a need for help (in a verbal or nonverbal way), the caregiver perceives this and responds in an adequate manner. The caregiver does not ignore subtle or obvious signs that the child needs help. This item does not include answers in an irritated, frustrated or hostile tone.

Examples: “[The child is unable to find the block] This one’s difficult to find, isn’t it?”; “[The child is unable to find the block] Look, there’s the block!”; [Pull the block the child is looking for closer to the child].

The caregiver manages to reformulate the instructions that the child does not understand. When the child experiences difficulty in understanding the instructions, the caregiver perceives this and adjusts the language so
that the child can better understand them.

Examples: The caregiver perceives that the child is experiencing difficulty in finding the small yellow block, and says “Look for the one that has only four circles”; [on building the robot] the child does not respond when the caregiver says “Let’s start from the bottom”, and the caregiver reformulates this, saying “What color are the robot’s feet?”

Additional information for Brazilian coders: Different verbal and nonverbal languages (such as modeling), can be used by the caregiver to facilitate the understanding of the child and can be codified as “reformulating instructions”. Examples include: “Where is the other star? It’s not here. It’s there” [point to the peg]; “Let’s put [a piece] like this one? Where is the little ball?”. Higher scores (“4” and “5”) demand that, aside from modeling, the caregiver verbally reformulates the instructions that the child did not understand.

The caregiver is sensitive to what the child knows and/or understands. The caregiver is capable of evaluating the level of the child’s understanding and what type of help the child needs in each task, identifying the zone of proximal development (that is, the level at which the instructions are more beneficial to the child – not overly easy, nor overly difficult).
Examples: Divide the task into smaller parts; use language appropriate to the child’s development level; provide basic and appropriate instructions; perceive when the child does not understand something; stimulate the child’s independence when appropriate.

The caregiver offers positive feedback in order to reinforce the child’s behavior. The caregiver responds to the child’s actions with affirmations, vocalizations and/or positive behaviors.

Examples: “Very good!”, “That’s the way!”, “Great!”; “That’s it!”, “Right on!”, “Yeah!”, “Congratulations!”, “What a beauty!”; “Wonderful!”; [claps; shakes his/her head, following the child’s actions].

The caregiver stimulates reciprocity/alternation in interactions with the child. This item is codified when the caregiver stimulates reciprocity and alternation in the interaction, whether verbally or not, and in an explicit manner (e.g., “Now it’s your turn”) or more subtly (e.g., “What are we going to do now?”).

Examples: “You do the next one”; “Now it’s your/my turn”; [point to the child to indicate that it is his/her turn]; “Where will this block go... [stimulating the child to give his/her opinion]”. In highly reciprocal interactions, this may be subtle (e.g., the caregiver leans backward a bit and/or looks at the child when he/she completes his/her
Additional information for Brazilian coders: Other examples include: “Now mommy places... now Maria places”; “Mommy is going to put it there first and then you have to do it the same way”; [The child placed the piece in the upper part of the peg and the mother says] “The mother pushes it to you”; “Now you put it there”.

Give your impression of how the caregiver interacts daily with the child, based on what you have observed.

Not at all true/I totally disagree; Sometimes true/I partially agree; Very true/I totally agree

Respond to the questions below based on the caregiver’s interaction, specifically with this child. Score rapidly, following your initial reactions and general impressions; do not focus too much on a single item. Use all the information available, including nonverbal information, to form your reaction and impressions. Try to use the entire five-point scale, don’t leave any blank items (give your best guess/evaluation to each item). Observe for only 5 minutes. If you go beyond 5 minutes, interrupt. Codification of brief interactions in caregiver-child dyads. Cognitive Sensitivity.

I hereby declare for all due purposes that the text above is a true and exact translation of the document submitted to me.
Appendix 9: Consent Form/Information Sheet for Practitioners – Focus Group (English and Portuguese versions)

CONSENT FORM FOR PRACTITIONERS – FOCUS GROUP

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada
Faculty Supervisor: Dr. Jennifer Jenkins, University of Toronto, Canada
Co-investigator: Dr. Aluísio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPel), Pelotas, Brazil

A signed and dated copy of this consent form will be left with you. Together with the information sheet, it should give you the basic idea of what the research is about and what you are being asked to do. Please take the time to read these documents carefully. Feel free to ask questions about anything that is unclear before you sign.

I, ____________________________________, understand that this study is looking at the cross-cultural adaptation and validation of the PICCOLO checklist and the Maternal Cognitive Sensitivity scale in Brazil. They are parent involvement observational measures developed in the United States and in Canada, respectively.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPel – Federal University of Pelotas), Brazil.

I understand I will take part in 1 (one) focus group, a form of group interview, which will explore participants’ knowledge and experiences on cultural values, customs, and beliefs that impact parenting behaviours in Brazil. The aim is to discuss and answer these questions, based on my experience working with mothers of one year old and two years old children.

a. What do Brazilian parents think are the most important activities to engage in with their child up to two years of age?
b. What are the most common mother-child interaction behaviours you observe with one year old children in Brazil?
c. What are the most common mother-child interaction behaviours you observe with two year old children in Brazil?
d. What are the cultural values, customs, and beliefs that support these behaviours?
e. What are the less common mother-child interaction behaviours you observe with one year old children in Brazil? Why do you think mothers engage less frequently in these behaviours?
f. What are the less common mother-child interaction behaviours you observe with two year old children in Brazil? Why do you think mothers engage less frequently in these behaviours?
g. Affection refers to warmth, physical closeness, and positive expressions toward the child. How do Brazilian mothers show affection? What are the most common ways that Brazilian mothers show affection?
h. Responsiveness means responding to child’s cues, emotions, words, interests, and behaviours. How do Brazilian mothers show responsiveness? What are the most common ways that Brazilian mothers show responsiveness?
i. Encouragement means active support of exploration, effort, skills, initiative, curiosity, creativity, and play. How do Brazilian mothers demonstrate encouragement? What are the most common ways that Brazilian mothers demonstrate encouragement?
j. Teaching encompasses shared conversation and play, cognitive stimulation, explanations, and questions. What are the most common ways that Brazilian mothers demonstrate teaching behaviours?

I understand this group discussion will last around 2 hours. With my permission, the focus group discussion will be audio recorded. I understand that this will allow researchers to listen to this record later and remember the key points in more detail than is possible taking notes during a group discussion. I am assured that all the information collected will be used only by the research team for this study.

I am assured that all information collected will be securely stored and will be kept confidential by researchers. Identification numbers will be used so that my name will not be stored with the information collected. I understand that the audio records will be stored for 5 years, and after this period they will be destroyed. I understand that in order to maintain confidentiality among participants, I must refrain from discussing and mentioning the focus group debate outside of the group.

I have received answers to all questions I have asked about the study. I understand that taking part in this study is voluntary. I can get services from the local public health department or from the Medical School of Universidade Federal de Pelotas (UFPel) whether or not I take part in the study. I know that I can stop taking part at any time without explanation, even after I have signed this form. If this happens, my contributions will not be included in the study reports.

I understand if I have questions about this form or the study, I can call the principal investigator.

I agree to take part in this study.

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TERMOS DE CONSENTIMENTO LIVRE E ESCLARECIDO DE PROFISSIONAL
– GRUPO FOCAL

Título do Projeto de Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisadora: Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá

Supervisora acadêmica: Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá

Co-investigador: Dr. Aluísio J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Uma cópia assinada e datada desse Termo de Consentimento Livre e Esclarecido permanecerá com você. Junto com a carta informativa, esse Termo proporcionará uma ideia básica sobre a pesquisa e o que você está sendo solicitado a fazer. Leia esses documentos com atenção. Sinta-se à vontade para esclarecer suas dúvidas antes de assinar.

Eu, ___________________________________________, compreendo que esse estudo objetiva a adaptação transcultural e a validação dos instrumentos: PICCOLO e Sensibilidade Cognitiva Materna no Brasil. Eles são instrumentos para avaliar interações parentais, a partir de observação, desenvolvidos nos Estados Unidos e no Canadá, respectivamente. Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil.

Eu compreendo que eu vou participar de 1 (um) grupo focal, uma forma de entrevista grupal, que vai discutir experiências e conhecimentos dos participantes sobre valores culturais, costumes e crenças que interferem nas práticas e comportamentos parentais no Brasil. O objetivo do grupo focal é discutir e responder as seguintes questões, com base na sua experiência de trabalho com mães de crianças de 1 (um) e 2 (dois) anos de idade.

a. Quais são as atividades e as práticas parentais mais importantes na interação de mães brasileiras com seus filhos de até dois (2) anos de idade?
b. Quais são os comportamentos e as práticas parentais mais comuns na interação de mães com suas crianças de 12 meses (1 ano) de idade no Brasil?
c. Quais são os comportamentos e as práticas parentais mais comuns na interação de mães com suas crianças de 24 meses (2 anos) de idade no Brasil?
d. Quais são os valores culturais, costumes e crenças que sustentam esses comportamentos e práticas parentais?
e. Quais são os comportamentos e as práticas parentais menos frequentes na interação das mães com as suas crianças de 12 meses (1 ano) de idade no Brasil? Porque você acha que as mães não realizam esse(s) tipo(s) de comportamento(s) e práticas parentais?
f. Quais são os comportamentos e as práticas parentais menos frequentes na interação das mães com as suas crianças de 24 meses (2 anos) de idade no Brasil? Porque você acha que as mães não realizam esse(s) tipo(s) de comportamento(s) e práticas parentais?
g. Demonstrações de afeto envolvem expressões positivas, calorosas e proximidade física em relação à criança. Como as mães brasileiras demonstram afeto na relação com seus filhos? Quais são as formas mais comuns de demonstração de afeto por elas utilizadas?
h. Responsividade/sensibilidade materna significa responder aos sinais da criança, suas emoções, palavras, interesses e comportamentos. Como as mães brasileiras demonstram responsividade/sensibilidade na relação com suas crianças? Quais são as formas mais comuns de responsividade/sensibilidade materna das mães brasileiras?
i. Encorajamento significa dar à criança um suporte ativo para a exploração, o esforço, as habilidades, a iniciativa, a curiosidade, a criatividade e a brincadeira. Como as mães brasileiras demonstram encorajamento na relação com seus filhos?
j. Práticas educativas compreendem conversas e brincadeiras compartilhadas, estimulação cognitiva, perguntas e explicações. Quais são as práticas educativas que as mães brasileiras mais frequentemente utilizam na relação com seus filhos(as)?

Eu compreendo que essa discussão em grupo vai durar cerca de 2 (duas) horas. Com a minha permissão, a discussão do grupo focal será gravada em áudio. Eu compreendo que isso permitirá que os pesquisadores ouçam a gravação posteriormente e recorde-se dos pontos principais com mais detalhes do que se apenas tomasssem nota durante a discussão. Eu fui informada que todas as informações coletadas serão utilizadas somente pela equipe de pesquisa desse estudo e para fins científicos.

Eu fui informada que todas as informações coletadas serão armazenadas com segurança e serão mantidas em sigilo pelos pesquisadores. Números de identificação serão utilizados de modo que meu nome não será mantido junto com a informação coletada. Eu compreendo que as gravações de áudio serão armazenadas por 5 (cinco) anos e destruídas depois desse período. Eu compreendo que para manter o sigilo entre os participantes, eu devo me abster de discutir e mencionar o debate do grupo focal fora do grupo. Tive oportunidade de esclarecer minhas dúvidas, sendo que todas as minhas perguntas foram respondidas claramente.

Eu compreendo que minha participação nesse estudo é voluntária. Se eu resolver não participar mais do estudo isto não vai me causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Eu sei que posso interromper a minha participação a qualquer momento sem ter que dar qualquer justificativa para tal, mesmo depois de ter assinado esse Termo do Consentimento Livre e Esclarecido. Se isso ocorrer, minhas contribuições não serão incluídas nos resultados do estudo.

Eu compreendo que se eu tiver alguma dúvida sobre esse Termo ou estudo, eu posso ligar para a pesquisadora principal.

Eu concordo em participar desse estudo.

Assinatura: ________________________________
Nome completo: ____________________________

Assinatura da testemunha: ____________________
Data (D/M/A): ____/____/____
STUDY INFORMATION SHEET FOR PRACTITIONERS – FOCUS GROUP

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada
Faculty Supervisor: Dr. Jennifer Jenkins, Ontario Institute for Studies in Education, University of Toronto, Canada
Co-investigator: Dr. Aluísio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPel), Pelotas, Brazil

You are being invited to take part in this research project that will investigate whether the PICCOLO checklist, developed in the United States of America, and the Maternal Cognitive Sensitivity scale, developed in Canada, are valid in Brazil. These measures were designed to be used by primary health practitioners for observing parent-child interaction.

Specifically, the objective of this focus group is to better understand the cultural values, customs, and beliefs that impact parenting behaviours and parent-child interactions in Brazil based on your experiences working with mothers and young children. We are especially interested in the parenting behaviour of mothers of one and two-year old children, and in your reflections on what Brazilian mothers have told you and/or what you’ve directly observed in your practice.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPel – Federal University of Pelotas), Brazil. About 8 (eight) Brazilian practitioners are being invited to take part in this focus group.

Why this study is important:
Mother-child interaction impacts child development and well-being. Primary health care services can benefit for easy-to-administer and easy-to-score measures of parenting.

What we are asking you to do:
You will be asked to take part in one (1) focus group that will last for about 2 hours, and will take place at the Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), UFPel. Address: Rua Marechal Deodoro 1160, 3º piso, Centro, Pelotas, RS, Brazil. With your permission, we will audio record the focus group discussion. This will allow researchers to listen to this record later and remember the key points in more detail than is possible taking notes during a group discussion.

What are the risks? There are no known risks connected with this study, as all collected information will be confidential.

What are the benefits?
This work will help us understand how Brazilian parents engage in with their one-year old and/or two-year old child. That knowledge will help us to plan better services for young children and their parents to promote positive relationships. We will prepare a final report at the end of the study. It will give results without identifying participants. We will mail a copy of this report to you.

What are your rights and how is your privacy protected?
You are under no obligation to take part in this study. Whether you take part or not will not affect any services you might receive from your local public health department or from the Medical School of Universidade Federal de Pelotas (UFPel). If you agree to take part, you may change your mind at any time and stop. All the information collected will be kept confidential by researchers and will be used only by the research team for this study. In order to maintain confidentiality among participants, we kindly ask you to refrain from discussing and mentioning the focus group debate outside of the group. You will receive a signed copy of the consent to keep.

Your name will not be stored with any information collected. The audio records will be kept in a locked cabinet in the principal researcher’s office. They will be stored by identification number. We will keep this information securely stored for 5 years, and then the information collected will be destroyed.

If you have any questions about the study, please call.
CARTA INFORMATIVA PARA PROFISSIONAIS – GRUPO FOCAL

Título do Projeto de Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisadora: Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá

Supervisora acadêmica: Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá

Co-investigador: Dr. Aluísio J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Você está sendo convidado(a) a participar desse projeto de pesquisa que investigará se os instrumentos PICCOLO, desenvolvido nos Estados Unidos, e Sensibilidade Cognitiva Materna, desenvolvido no Canadá, são válidos no Brasil. Eles são instrumentos próprios para uso por profissionais da atenção primária à saúde para observar as interações mãe-criança.

Especificamente, o objetivo desse grupo focal é ampliar a compreensão sobre os valores culturais, costumes e crenças que influenciam os comportamentos e as práticas parentais de mães (principais cuidadores) na interação com suas crianças no Brasil, baseado na sua experiência de trabalho com mães e crianças pequenas. Nós estamos especialmente interessados nos comportamentos parentais de mães com crianças de 1 e 2 anos de idade, e em suas reflexões sobre o que mães brasileiras falaram para você ou que você tenha observado na sua prática profissional.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil. Cerca de 8 (oito) profissionais brasileiros estão sendo convidados para participar desse grupo focal.

Porque esse estudo é importante:
Interações mãe-criança impactam no bem-estar e desenvolvimento infantil. Profissionais da atenção primária à saúde podem se beneficiar com a disponibilização de instrumentos de parentalidade de fácil aplicação e avaliação.

O que você está sendo solicitado a fazer:
Você será solicitado a participar de um grupo focal de, aproximadamente, 2 horas de duração que acontecerá no Centro de Pesquisas Epidemiológicas da Universidade Federal de Pelotas (UFPel). Endereço: Rua Marechal Deodoro 1160, 3º piso, Centro, Pelotas, RS, Brasil. Com a sua permissão, nós iremos gravar em áudio a discussão do grupo focal. Isso permitirá que os pesquisadores ouçam a gravação posteriormente e recordem-se dos pontos principais com mais detalhes do que se apenas tómassem nota durante a discussão.

Quais são os riscos? Não há riscos conhecidos vinculados a esse projeto. Todas as informações coletadas serão confidenciais.

Quais são os benefícios?
Esse trabalho nos ajudará a compreender como as mães (principais cuidadores) interagem com suas crianças de até 2 (dois) anos de idade. Esse conhecimento ajudará a planejar serviços mais adequados para crianças pequenas e suas famílias para promover relacionamentos positivos. Nós vamos elaborar um relatório ao final do estudo o qual apresentará os resultados sem identificar individualmente os participantes. Nós enviaremos uma cópia desse relatório pelo correio para você.

Quais são os seus direitos e como a sua privacidade é protegida?
A sua participação no estudo é voluntária. Se você resolver não participar mais do estudo isto não vai lhe causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Se você concordar em participar, você ainda poderá mudar de ideia e, a qualquer momento, interromper sua participação. Toda a informação coletada será mantida em sigilo pelos pesquisadores e será usada apenas pela equipe de pesquisa desse estudo. Visando manter o sigilo entre os participantes, nós gentilmente pedimos que você se abstenha de discutir ou mencionar o debate do grupo focal fora do grupo. Você receberá uma cópia do Termo de Consentimento Livre e Esclarecido assinada para guardar com você.

Seu nome não será mantido com nenhuma informação coletada. Os arquivos de áudio serão guardados em um armário chaveado no escritório da pesquisadora responsável pelo estudo. Eles serão armazenados com um número de identificação. Nós manteremos essa informação armazenada e confidencial por 5 (cinco) anos e, posteriormente, os dados serão destruídos.

Se você tem alguma dúvida sobre o estudo, por favor ligue.
Appendix 10: Focus Group Guide

Introduction: Thanks for accepting our invitation to participate in this focus group which is part of the research entitled: “Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity”. The purpose of this focus group is to explore your knowledge and experience as health professionals regarding cultural values, customs and beliefs capable of impacting parenting behaviours in Brazil. We are specifically interested in behaviours demonstrated by mothers while interacting with their one- and two-year-old daughter/son. So, please focus on this age-group. In order to maintain confidentiality, we kindly ask each of you to not mention or comment the group’s discussion outside of the group. Confidentiality cannot be guaranteed, however we count on your support to keep this discussion confidential and just known by the study’s participants and researchers.

Questions:

a. What do Brazilian mothers think are the most important activities to engage in with their child up to two years of age?

b. What are the most common mother-child interaction behaviours you observe with one year old children in Brazil?

c. What are the most common mother-child interaction behaviours you observe with two year old children in Brazil?

d. What are the cultural values, customs, and beliefs that support these behaviours?

e. What are the less common mother-child interaction behaviours you observe with one year old children in Brazil? Why do you think mothers engage less frequently in these behaviours?

f. What are the less common mother-child interaction behaviours you observe with two year old children in Brazil? Why do you think mothers engage less frequently in these behaviours?

g. Affection refers to warmth, physical closeness, and positive expressions toward the child. How do Brazilian mothers show affection? What are the most common ways that Brazilian mothers show affection?

h. Responsiveness means responding to child’s cues, emotions, words, interests, and behaviours. How do Brazilian mothers show responsiveness? What are the most common ways that Brazilian mothers show responsiveness?

i. Encouragement means active support of exploration, effort, skills, initiative, curiosity, creativity, and play. How do Brazilian mothers demonstrate encouragement? What are the most common ways that Brazilian mothers demonstrate encouragement?

j. Teaching encompasses shared conversation and play, cognitive stimulation, explanations, and questions. What are the most common ways that Brazilian mothers demonstrate teaching behaviours?
Authorization Letter from the Principal Investigator for the 2015 Pelotas Birth Cohort Study

142

Universidade Federal de Pelotas
Centro de Pesquisas Epidemiológicas
Programa de Pós-graduação em

Pelotas, 22 March, 2016.

AUTHORIZATION LETTER

I, Dr. Pedro C. Hallal, PhD, faculty at the Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPe), Brazil, and principal investigator of the 2015 Pelotas Birth Cohort study, grant permission to Ms. Alessandra Schneider, Brazilian, PhD student at the University of Toronto, Ontario Institute for Studies in Education (OISE), Canada, to study a subsample of 150 mother-child dyads of the 2015 Pelotas Birth Cohort study, and to have access to relevant data related to those families. Ms. Schneider research study is titled “Cross-Cultural Adaptation and Validation of the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO) in Brazil”, supervised by Dr. Jennifer Jenkins.
Appendix 12: PICCOLO-BR Data Collection Kit

[Bag 1]
Appendix 12: PICCOLO-BR Data Collection Kit (cont.)
Por favor, organize as peças de acordo com o seu formato/forma. Escolha uma forma específica e coloque as peças da mesma forma em cada um dos pisos de madeira. Veja um exemplo abaixo (a cor não importa).

Depois, pede para o seu filho/filha colocar as peças da mesma forma em cima das suas.

Se a criança conseguir colocar a mesma forma em cima das suas peças, passe para a Tarefa 3.
Appendix 14: Cognitive Sensitivity Scale in Portuguese (Authorized Version)

Sensibilidade Cognitiva
Codificação de interações breves em duplas cuidador-criança

- Responda às perguntas abaixo com base na interação do cuidador especificamente com esta criança.
- Pinte rapidamente, de acordo com suas reações iniciais e impressões gerais; não se detenha demais em nenhum item.
- Use todas as informações disponíveis, incluindo as não verbais, para formar sua reação e impressões.
- Tente usar toda escala de 5 pontos, não deixe itens em branco (dê a cada item seu melhor palpite/avaliação).
- Observe somente por 5 minutos. Se ultrapassar 5 minutos, interrompa.

<table>
<thead>
<tr>
<th>ID</th>
<th>Cód. Autor:</th>
<th>Hora/hora:</th>
<th>Data/codificação:</th>
<th>/</th>
</tr>
</thead>
</table>

Dê sua impressão de como o cuidador interage com a criança no dia-a-dia, com base no que você observou:

<table>
<thead>
<tr>
<th>Meda verdadeiro (Gostei totalmente)</th>
<th>Algumas vezes verdadeiro (Gostei parcialmente)</th>
<th>(Muito verdadeiro) Gostei totalmente</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clareza na Comunicação</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. O cuidador dá instruções claras e específicas.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. O cuidador dá instruções não verbais positivas.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. O cuidador lembra a criança dos objetivos/regras da tarefa.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. O cuidador procura completar a tarefa de maneira sensível às necessidades e aos desejos da criança.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. O cuidador procura seguir as regras de maneira sensível às necessidades e aos desejos da criança.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. O cuidador pede ajuda de maneira clara.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Leitura do Pensamento</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. O cuidador responde sensivelmente aos pedidos de ajuda da criança, mesmo os sutis e/ou não verbais.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. O cuidador consegue reformular instruções que a criança não entende.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. O cuidador é sensível ao que a criança sabe e/ou compreende.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Desenvolvimento da Mutualidade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. O cuidador oferece feedback positivo para reforçar o comportamento da criança.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. O cuidador incentiva a reciprocidade/alternância na interação com a criança.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

146
Appendix 15: Consent Form/Information Sheet for Mothers (English and Portuguese versions)

CONSENT FORM FOR MOTHERS

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada

Faculty Supervisor: Dr. Jennifer Jenkins, University of Toronto, Canada

Co-investigator: Dr. Aluisio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPel), Pelotas, Brazil

A signed and dated copy of this consent form will be left with you. Together with the information sheet, it should give you the basic idea of what the research is about and what you are being asked to do. Please take the time to read these documents carefully. Feel free to ask questions about anything that is unclear before you sign.

I, ____________________________________, understand that this study is looking at whether the PICCOLO and the Maternal Cognitive Sensitivity instruments are useful tools to observe mother-child interaction in Brazil. This work will help us understand how Brazilian mothers interact with their one-year-old and two years old children.

This study is being carried out by a Brazilian PhD student and her faculty supervisor from the University of Toronto, Canada, in partnership with researchers from the Universidade Federal de Pelotas (UFPel – Federal University of Pelotas), Brazil.

I understand I will now take part in a home visit that will last around 45 minutes. I know I will be asked to interact and play with my child for 15 minutes and this will be video recorded. Some mothers can feel uncomfortable, embarrassed or upset when being filmed in interaction with their young child. I may stop the interview at any time. I understand that the tape will be confidential and will be used only by the research team for this study. I know that my child will receive an age appropriate toy (approximate cost of R$ 20,00 or 5 U$) at the end of the observation, as a compensation for our participation.

I am assured that all information collected about my family will be securely stored and will be kept confidential. Identification numbers will be used so that my name and the name of my child will not be stored with the information collected. I understand that the video records will be stored for 5 years, and after this period they will be destroyed. There is one exception to the confidentiality rule. By law, suspected child abuse must be reported, where failure to do so is likely to cause harm to the child.

I understand that the principal researcher will share the PICCOLO scores with the instrument’s publisher (Brookes Publishing) without identifying any individual mothers or children. Neither my name nor the name of my child will be used in connection with this study. All results will be reported about groups of children and will not identify any single child or family.

I have received answers to all questions I have asked about the study. I understand that taking part in this study is voluntary. I can get services from the local public health department or from the Medical School of Universidade Federal de Pelotas (UFPel) whether or not I take part in the study. I know that I can stop taking part at any time without explanation, even after I have signed this form, and my data will be withdrawn.

I understand if I have questions about this form or the study, I can call the principal investigator.

I agree to take part in this study.

<table>
<thead>
<tr>
<th>Signature:</th>
<th>Mother’s Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s Name:</td>
<td>Child’s Birth Date (DD/MM/YY): <em><strong>/</strong></em>/___</td>
</tr>
<tr>
<td>Witness Signature:</td>
<td>Date (DD/MM/YY): <em><strong>/</strong></em>/___</td>
</tr>
</tbody>
</table>
TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO DA MÃE

Título do Projeto de Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisadora: Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá

Supervisora acadêmica: Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá

Co-investigador: Dr. Aluísio J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Uma cópia assinada e datada desse Termo de Consentimento Livre e Esclarecido permanecerá com você. Junto com a carta informativa, esse Termo proporcionará uma ideia básica sobre a pesquisa e o que você está sendo solicitada a fazer. Leia esses documentos com atenção. Sinta-se à vontade para esclarecer suas dúvidas antes de assinar.

Eu, ___________________________________________, compreendo que esse estudo objetiva investigar se os instrumentos PICCOLO e Sensibilidade Cognitiva Materna são úteis para observar a interação mãe-criança no Brasil. Esse trabalho permitirá compreender como mães brasileiras interagem com seus filhos(as) de um (1) e dois (2) anos de idade.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil.

Eu compreendo que eu vou participar agora de uma visita domiciliar de aproximadamente 45 minutos de duração. Eu sei que eu serei solicitada a interagir e brincar com meu/ minha filho/a por 15 minutos e que isso será filmado. Algumas mães podem se sentir pouco à vontade, constrangidas ou chateadas durante a filmagem com sua criança. Eu posso interromper a minha participação a qualquer momento. Eu compreendo que essa filmagem será confidencial e será utilizada somente pela equipe de pesquisa. Eu fui informada que minha criança receberá um brinquedo apropriado à sua idade (de valor aproximado a R$20,00) no final da observação, como uma retribuição à nossa participação.

Eu compreendi que todas as informações coletadas sobre a minha família serão armazenadas com segurança e serão mantidas em sigilo. Números de identificação serão utilizados de modo que meu nome e o da minha criança não serão mantidos junto com a informação coletada. Eu compreendo que as gravações de vídeo serão armazenadas por 5 (cinco) anos e destruidas depois desse período. Existe uma única exceção para a regra de confidencialidade. Por lei, suspeita de abuso infantil deve ser reportado, já que a omissão em fazê-lo pode causar danos à criança.

Eu compreendo que a pesquisadora principal irá compartilhar os resultados do PICCOLO com a editora do instrumento (Brookes Publishing) sem identificar individualmente qualquer mãe ou criança. O meu nome e o da minha criança não serão usados por esse estudo. Todos os resultados serão reportados sobre o grupo de crianças e não irão identificar individualmente nenhuma criança ou família.

Tive oportunidade de esclarecer minhas dúvidas, sendo que todas as minhas perguntas foram respondidas claramente. Eu compreendo que a minha participação nesse estudo é voluntária. Se eu resolver não participar mais do estudo isto não vai me causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Eu sei que posso interromper a minha participação a qualquer momento sem ter que dar qualquer justificativa para tal, mesmo depois de ter assinado esse Termo de Consentimento Livre e Esclarecido, e meus dados serão retirados do estudo.

Eu compreendo que se eu tiver alguma dúvida sobre esse Termo ou estudo, eu posso ligar para a pesquisadora principal.

Eu concordo em participar desse estudo.

<table>
<thead>
<tr>
<th>Assinatura:</th>
<th>Nome completo da mãe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nome completo da criança:</td>
<td>Data Nascimento da Criança (D/M/A): <strong><strong>/</strong></strong>/____</td>
</tr>
<tr>
<td>Assinatura da testemunha:</td>
<td>Data (D/M/A): <strong><strong>/</strong></strong>/____</td>
</tr>
</tbody>
</table>
STUDY INFORMATION SHEET FOR MOTHERS

Research Project Title: Cross-Cultural Adaptation and Validation of Parenting Measures in Brazil: PICCOLO and Maternal Cognitive Sensitivity

Researcher: Alessandra Schneider, PhD student at the University of Toronto, Canada

Faculty Supervisor: Dr. Jennifer Jenkins, University of Toronto, Canada

Co-investigator: Dr. Aluisio J.D. Barros, Centre for Epidemiological Research (Centro de Pesquisas Epidemiológicas), Universidade Federal de Pelotas (UFPel), Pelotas, Brazil

You and your one/two year(s) old child are being invited to participate in this project that will investigate whether the PICCOLO checklist, developed in the United States of America, and the Maternal Cognitive Sensitivity scale, developed in Canada, are useful for the assessment of parenting in Brazil. They are tools for health practitioners (community-health agents, general doctors, paediatricians) for observing parent-child interaction.

This study is being carried out by a Brazilian PhD student and her faculty supervisor in Canada in partnership with researchers from the Universidade Federal de Pelotas (UFPel - Federal University of Pelotas), Brazil. About 150 mothers from Pelotas, with a one/two year(s) old child enrolled in the 2015 Pelotas Birth Cohort study, are being asked to take part in this study.

Why this study is important: Mother-child relationship impacts child development and well-being. PICCOLO and the Maternal Cognitive Sensitivity scale measure what parents can do to support their children’s development and learning. We need a way of measuring parent-child interactions in Brazil which is the goal of the current study.

What we are asking you and your child to do: You will be asked to take part in one (1) home visit which will take place in your house, and will last about 45 minutes. With your permission, we will videotape a play activity interaction between you and your child for 15 minutes. The interviewer will provide all the necessary toys and equipment. This will allow expert coders to look at these videos later and record behaviours in more detail than is possible during an in-home observation. These tapes will be confidential and will be used only by the research team for this study.

What are the risks? Some mothers can feel uncomfortable, embarrassed or upset when being filmed in interaction with their young child. As this research involves videotaping mother-child interaction, and there is a duty to report suspicion of child abuse, there could be risks to the parent of social stigma and investigation of child abuse. Please remember that you can stop participating at any time.

What are the benefits? We hope that this study will benefit current and future Brazilian parents, and their children. The results will help us to advise governments in the provision of better services for young children and their parents. We will prepare a final report at the end of the study. It will give results for all the children in the study as a group. We will mail a copy of this report to you. We will also be giving an age appropriate toy for your child (approximate cost of R$ 20.00 or 5 U$) at the end of the observation.

What are your rights and how is your privacy protected? You are under no obligation to take part in this study. Whether you take part or not will not affect any services you might receive from your local public health department or from the Medical School of Universidade Federal de Pelotas (UFPel). If you agree to take part, you may change your mind at any time and stop. All the information collected will be kept confidential. There is one exception to the confidentiality rule. By law, suspected child abuse must be reported, where failure to do so is likely to cause harm to the child. You will receive a signed copy of the consent to keep.

All results will be reported about groups of children and will not identify any single child or mother. Your name and the name of your child will be stored separately from any other information that we collect about your family. The videotapes will be kept in a locked cabinet in the principal researcher’s office. They will be stored by identification number. We will keep this information securely stored for 5 years, and then the information collected will be destroyed.

If you have any questions about the study, please call.
CARTA INFORMATIVA PARA MÃES

Título do Projeto de Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisadora: Alessandra Schneider, estudante de doutorado da Universidade de Toronto (University of Toronto), Canadá

Supervisora acadêmica: Dra. Jennifer Jenkins, Instituto de Estudos Educacionais de Ontario (Ontario Institute for Studies in Education), Universidade de Toronto, Canadá

Co-investigador: Dr. Aluíso J.D. Barros, Centro de Pesquisas Epidemiológicas, Universidade Federal de Pelotas (UFPel), Pelotas, Brasil

Você e seu filho(a) de um/dois anos de idade estão sendo convidados a participar desse projeto de pesquisa que investigará se os instrumentos PICCOLO, desenvolvido nos Estados Unidos, e Sensibilidade Cognitiva Materna, desenvolvido no Canadá, são úteis para avaliar parentalidade no Brasil. Eles são instrumentos próprios para uso por profissionais de saúde (agentes comunitários de saúde, médicos, pediatras) para observar as interações mãe-criança.

Esse estudo está sendo desenvolvido por uma estudante de doutorado brasileira e sua orientadora da Universidade de Toronto, no Canadá, em parceria com pesquisadores da Universidade Federal de Pelotas (UFPel), no Brasil. Cerca de 150 (cento e cinquenta) mães de Pelotas, com seu filho(a) de um/dois anos de idade e que participa do estudo de Coorte de Nascimentos de Pelotas de 2015, estão sendo convidadas a participar desse estudo.

Porque esse estudo é importante: Interações mãe-criança impactam no bem-estar e desenvolvimento infantil. Os instrumentos PICCOLO e Sensibilidade Cognitiva Materna avaliam o que as mães (principais cuidadores) podem fazer para apoiar a aprendizagem e o desenvolvimento de suas crianças. Nós precisamos de medidas para compreender as interações mãe-criança no Brasil que é o objetivo do presente estudo.

O que estamos pedindo para você e sua criança fazerem: Você será solicitada a participar de uma visita domiciliar que ocorrerá na sua casa e terá duração de, aproximadamente, 45 minutos. Com a sua permissão, nós iremos filmar uma atividade de interação entre você e sua criança por 15 minutos. O entrevistador vai levar todos os equipamentos e brinquedos necessários. A filmagem permitirá que especialistas devidamente treinados para preencher os instrumentos olhem os vídeos posteriormente e recordem-se dos comportamentos com mais detalhes do que seria possível no momento da observação. As filmagens serão confidenciais e serão utilizadas apenas pela equipe de pesquisadores desse estudo.

Quais são os riscos? Algumas mães podem se sentir pouco à vontade, constrangidas ou chateadas durante a filmagem com o seu filho(a). Como essa pesquisa envolve filmagem da interação entre a mãe e a criança, existe a obrigação de reportar suspeita de abuso infantil, existindo risco de estigma social da família e investigação de abuso. Por favor, lembre-se que a Sra. poderá deixar de participar a qualquer momento.

Quais são os benefícios? Nós esperamos que esse estudo beneficie mães/pais brasileiros atuais e futuros, e suas crianças. Os resultados nos ajudarão a recomendar aos governantes a oferta de serviços mais adequados para crianças pequenas e suas famílias. Nós vamos elaborar um relatório ao final do estudo que apresentará os resultados para o grupo de crianças, sem identificar individualmente os participantes. Nós enviaremos uma cópia desse relatório pelo correio para você. Nós também vamos dar um brinquedo apropriado à idade da sua criança (de valor aproximado a R$20,00) no final da observação.

Quais são os direitos e como a sua privacidade é protegida? A sua participação no estudo é voluntária. Se você resolver não participar mais do estudo isto não vai lhe causar nenhum problema de atendimento médico na Faculdade de Medicina da UFPel ou em qualquer outro serviço público de saúde. Se você concordar em participar, você ainda poderá mudar de ideia e, a qualquer momento, interromper sua participação. Toda a informação coletada será mantida em sigilo. Existe uma única exceção para a regra de confidencialidade. Por lei, suspeita de abuso infantil deve ser reportado, já que a omissão em fazê-lo pode causar danos à criança. Você receberá uma cópia do Termo de Consentimento Livre e Esclarecido assinada para guardar com você.

Todos os resultados serão para o grupo de crianças e não identificarão individualmente nenhuma criança ou mãe. Seu nome e o de sua criança serão mantidos separadamente de qualquer outra informação coletada sobre a sua família. As filmagens serão guardadas em um armário chaveado no escritório da pesquisadora responsável pelo estudo. Eles serão armazenados com um número de identificação. Nós manteremos essa informação armazenada e confidencial por 5 (cinco) anos, e posteriormente, os dados serão destruídos.

Se você tem alguma dúvida sobre o estudo, por favor ligue.
Appendix 16: Ethics Approval Letter issued by the University of Toronto, Canada

PROTOCOL REFERENCE # 33024

June 27, 2016

Dr. Jennifer Jenkins
DEPT OF APPL. PSYCHOLOGY & HUMAN
DEVEL.
OISE/UT

Alessandra Schneider
DEPT OF APPL. PSYCHOLOGY & HUMAN
DEVEL.
OISE/UT

Dear Dr. Jenkins and Alessandra Schneider,

Re: Your research protocol entitled, "Cross-cultural adaptation and validation of parenting measures in Brazil: PICCOLO and maternal cognitive sensitivity"

ETHICS APPROVAL

Original Approval Date: June 27, 2016
Expiry Date: June 26, 2017
Continuing Review Level: 1

We are writing to advise you that the Social Sciences, Humanities, and Education Research Ethics Board (REB) has granted approval to the above-named research protocol under the REB’s delegated review process. Your protocol has been approved for a period of one year and ongoing research under this protocol must be renewed prior to the expiry date.

Any changes to the approved protocol or consent materials must be reviewed and approved through the amendment process prior to its implementation. Any adverse or unanticipated events in the research should be reported to the Office of Research Ethics as soon as possible.

Please ensure that you submit an Annual Renewal Form or a Study Completion Report 15 to 30 days prior to the expiry date of your current ethics approval. Note that annual renewals for studies cannot be accepted more than 30 days prior to the date of expiry.

If your research is funded by a third party, please contact the assigned Research Funding Officer in Research Services to ensure that your funds are released.

Best wishes for the successful completion of your research.

Yours sincerely,
Appendix 17: Ethics Approval Letter issued by the Federal University of Pelotas, Brazil

FACULDADE DE MEDICINA DA UNIVERSIDADE FEDERAL DE PELOTAS

PARECER CONSUBSTANTIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Adaptação transcultural e validação de instrumentos de parentalidade no Brasil: PICCOLO e Sensibilidade Cognitiva Materna

Pesquisador: Aluisio Jardim Dornellas de Barros

Área Temática:

Versão: 1

CAAE: 58999316.1.0000.5317

Instituição Proponente: Faculdade de Medicina da Universidade Federal de Pelotas

Patrocinador Principal: UNIAO BRASILEIRA DE EDUCACAO E ASSISTENCIA

DADOS DO PARECER

Número do Parecer: 1.717.977

Apresentação do Projeto:

O objetivo do presente estudo é realizar a adaptação transcultural de dois instrumentos de interação parental desenvolvidos na América do Norte para o contexto brasileiro, e investigar se seus escores são válidos e precisos para avaliar interações mãe-filho(a) no Brasil. Os instrumentos observacionais Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO), desenvolvido nos Estados Unidos, e Maternal Cognitive Sensitivity (CS), desenvolvido no Canadá, serão objeto de análise. A primeira fase do estudo é o processo de adaptação transcultural (PAT) dos instrumentos originais para o contexto brasileiro e o idioma português. Essa fase compreende oito etapas e contará com a participação de profissionais de saúde, potenciais avaliadores e especialistas brasileiros. A segunda fase da investigação envolve análise e evidências de validade e precisão/fidedignidade dos escores dos instrumentos adaptados.

Cento e cinquenta duplas mãe-criança participantes do estudo de Coorte de Nascimentos de Pelotas de 2015 (C2015), coordenado pelos Programas de Pós-Graduação em Epidemiologia e em Educação Física da Universidade Federal de Pelotas (UFPe), participarão do presente estudo. As duplas serão filmadas, a domicílio, em uma situação semiestruturada de interação até 2 semanas após a visita de acompanhamento dos 12 e 24 meses quando será realizada a avaliação do desenvolvimento infantil. Os instrumentos observacionais serão pontuados a partir dos vídeos. Este estudo
fornecerá evidências de precisão/fidedignidade, ou seja, consistência interna e concordância entre os observadores (entre- e intra-observador), bem como de validade externa e validade de construto dos instrumentos de parentalidade.

**Objetivo da Pesquisa:**
Objetivo Primário:
Investigar se as propriedades psicométricas de dois instrumentos de parentalidade, a saber, Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO; Roggman et al., 2013a) e Maternal Cognitive Sensitivity (CS; Prime et al., 2015), desenvolvidos nos Estados Unidos e no Canadá respectivamente, são adequadas para avaliar interações parentais no Brasil.

Realizar a adaptação cultural dos respectivos instrumentos originais, em inglês, para a cultura brasileira e o idioma português Analisar a precisão e fidedignidade da validade das versões em português-brasileiro do PICCOLO e do CS (PICCOLO-BR e CS-BR).

**Avaliação dos Riscos e Benefícios:**
Avaliação de riscos e benefícios adequados.

**Riscos:**
Algumas mães podem se sentir pouco à vontade, constrangidas ou chateadas durante a filmagem com o seu filho(a), mas em geral esse desconforto inicial diminui rapidamente. Como essa pesquisa envolve filmagem da interação entre a mãe e a criança, existe a obrigação de reportar suspeita de abuso infantil, existindo risco de estigma social da família e investigação de abuso. Entretanto, estimamos esse risco como muito baixo já que as mães serão informadas previamente da obrigação legal de reportar ao Conselho Tutelar suspeita de abuso ou maus-tratos infantil, e estarão conscientes de que a interação será filmada. Os participantes dos grupos focais (profissionais de saúde e potenciais avaliadores) serão orientados a se abstiver de discutir ou mencionar o debate do grupo focal fora do grupo visando manter o sigilo dos dados coletados apenas entre os participantes e a equipe de pesquisa.

**Benefícios:**
O presente estudo ajudará a compreender como as mães brasileiras interagem com suas crianças de até dois anos de idade. Interações mãe-criança impactam no bem-estar e desenvolvimento infantil. Os instrumentos PICCOLO e Sensibilidade Cognitiva Materna avaliam o que as mães (principais cuidadores) podem fazer para apoiar a aprendizagem e o desenvolvimento de suas crianças. Esse conhecimento permitirá planejar serviços mais adequados para crianças pequenas e suas famílias com vistas à promoção de relacionamentos positivos e responsivos. Além disso, esse
estudo trará uma importante contribuição a pesquisas futuras sobre interações parentais no Brasil, pois disponibilizará dois instrumentos culturalmente adaptados para avaliação das interações parentais com crianças pequenas no Brasil.

**Comentários e Considerações sobre a Pesquisa:**
Pesquisa importante para a validação de dois instrumentos de avaliação da interação mãe-bebê. Projeto de Pesquisa bem escrito e claro sobre os objetivos do trabalho.

**Considerações sobre os Termos de apresentação obrigatória:**
Termos de apresentação obrigatória adequados, incluindo o projeto de pesquisa, os TCLEs e informações básicas do projeto.

**Recomendações:**
OK

**Conclusões ou Pendências e Lista de Inadequações:**
Projeto considerado sem pendências.
Aprovar o trabalho.

**Considerações Finais a critério do CEP:**

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

<table>
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<tr>
<th>Tipo Documento</th>
<th>Arquivo</th>
<th>Postagem</th>
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**Situação do Parecer:**
Aprovado

**Necessita Apreciação da CONEP:**
Não
PELOTAS, 08 de Setembro de 2016

Assinado por:
Patricia Abrantes Duval
(Coordenador)
## Appendix 18: Cognitive Sensitivity Scale: Original Descriptions for the 11 Items and Cultural Adaptations to Guide Brazilian Observers for Coding, in English and Portuguese

<table>
<thead>
<tr>
<th>Construct / Construto Item / Item</th>
<th>Descriptions / Descrições</th>
<th>Cultural Adaptations to Guide Brazilian Observers for Coding / Adaptações Culturais para Orientar Observadores Brasileiros</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMUNICATIVE CLARITY / CLAREZA NA COMUNICAÇÃO</td>
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<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>This is a verbal command with specific, non-generic information. This parent provides his/her child with sufficient verbal information to complete the task as opposed to being vague or ambiguous. <strong>Examples:</strong> “Put the big blue block beside the small yellow block”; “Count four circles and then put it on”; “It’s the light green block”; “Let’s sort the blocks, you take the light blue ones and I’ll take the dark blue ones”; rather than “Put that there”; “Give me that”; “Sort the blocks.”</td>
<td>If the caregiver cites the color or shape at least once, score “2”, if the color or shape is cited more than once, score “3”. Score “5” if the caregiver cites the color AND shape at least once or cites the color or shape several times.</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>Involves the use of a physical action to convey what the child needs to do next. This also includes modeling. These actions are considered “positive” in that they are promoting completion of the task in a non-aggressive, non-hostile and helpful manner. <strong>Examples:</strong> Guiding the child’s hand; pointing to the correct spot; pointing to the picture; pointing to an object, suggesting the child pick it up; modeling: “Watch what mommy does” or “Look [shows child how to do it].”</td>
<td></td>
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<tr>
<td>2. O cuidador dá instruções não</td>
<td>Este item se refere ao uso de ações físicas para comunicar o que a criança deve fazer a seguir, incluindo também a modelagem. As ações são</td>
<td></td>
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<tr>
<td>Verbais positivas.</td>
<td>Consideradas &quot;positivas&quot; na medida em que promovem a realização da tarefa de forma colaborativa, não agressiva e não hostil. <strong>Exemplos:</strong> Guiar a mão da criança, apontar para o lugar correto, apontar para a figura, apontar para um objeto e sugerir que a criança o pegue; servir de modelo para a criança, modelar (&quot;Olha o que a mamãe vai fazer&quot; ou &quot;Olha só [mostrar como a criança deve fazer]&quot;).</td>
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<td></td>
</tr>
<tr>
<td><strong>3. This parent reminds his/her child about goals/rules of the task.</strong></td>
<td>Provides the child with information about the &quot;big picture&quot; and goals of the task. The idea is that the parent is giving the child a context for the activity – what are we doing each step of the way as well as overall. <strong>Examples:</strong> &quot;Remember, we are trying to copy this picture&quot;; &quot;We are building a house&quot;; &quot;We want to put all the blue blocks down&quot;; &quot;Let’s build the arm next&quot;; &quot;Remember, we only have 5 minutes.&quot; When the caregiver provides only a general idea of the task over the course of 5 min., stating, for example, &quot;Put it here&quot;, &quot;Put it inside here&quot;, &quot;Don’t remove it, fit it in&quot;, score &quot;2&quot;. If the caregiver divides the task and provides step-by-step instructions aligned with the objectives/rules, score &quot;3&quot;. Examples include: &quot;Put the heart here together with mommy’s&quot;; &quot;Where is the one equal to this one? Where is the yellow one [piece]? Put it here&quot;; &quot;Where do you have to put this one?&quot;; [mother points to the peg and says] &quot;Here is the matching one&quot;. Scoring &quot;4&quot; or &quot;5&quot; demands that the caregiver verbalize the objectives/rules of the task (Example: &quot;We have to place the pieces with the same shape together&quot; AND/OR &quot;We have to place the pieces of the same color together in the same peg&quot;) aside from giving step-by-step instructions.</td>
<td></td>
</tr>
<tr>
<td><strong>3. O cuidador lembra a criança dos objetivos/regras da tarefa</strong></td>
<td>O cuidador cria um contexto para a atividade, comunicando à criança a ideia geral da tarefa, os objetivos e os passos a seguir. <strong>Exemplos:</strong> &quot;Lembra que nós estamos tentando copiar esta figura&quot;; &quot;A gente quer construir uma casa&quot;; &quot;Nós queremos colocar todos os blocos azuis para baixo&quot;; &quot;Agora vamos montar o braço&quot;; &quot;Não esqueça que só temos 5 minutos&quot;. Quando o cuidador comunica, ao longo dos 5 minutos, apenas a ideia geral da tarefa dizendo, por exemplo, “Bota aqui”, “Coloca aqui dentro”, “Não é pra tirar, é pra encaixar”, pontuar com “2”. Se o cuidador divide a tarefa e dá instruções passo a passo alinhadas aos objetivos/regras pontuar com “3”. Exemplos incluem: “Coloca o coração aqui junto com o da mamãe”; “Onde está o igual a esse? Cadê a [peça de] cor amarela? Coloca aqui”; “Onde tu tens que botar esse? [mãe aponta para o pino e diz] “Aquí que é igual”. Pontuação “4” ou “5” requer que o cuidador verbalize os objetivos/regras da tarefa (Exemplo: “Nós temos que colocar as peças da mesma forma juntas” E/OU “Nós temos que colocar as peças da mesma cor no mesmo pino”) além de prover instruções passo a passo.</td>
<td></td>
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<tr>
<td><strong>4. This parent will try to complete the task in a way that is</strong></td>
<td>Describes the extent to which this parent is communicating to his/her child that there is a task to be completed and that he/she is invested in completing the task, and doing so in a way that is bringing the child along. This parent is <strong>Observe whether the caregiver is engaged in the task and in interaction with the child. A caregiver who simply allows the child to do as he/she pleases without providing instructions</strong></td>
<td></td>
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</tbody>
</table>
sensitive to the child’s needs and desires. 

engaging in the instructed activity and working to complete the task. If the child is not particularly interested in the task, or is struggling with the demands, the parent is sensitive to this and works to balance the desires/needs of the child with the goal of completing the task. This isn’t about doing the task correctly, but the parent is trying to stay within the structure of the task. A parent who undermines his/her child’s needs in order to complete the task will score lower on this item, as will a parent who does not attempt to model the structure and expectations of the task. A parent who balances the needs of his/her child and the demands of the task will score higher.

or guidance will receive a lower score. Observe whether the caregiver’s behaviour shows a balance between allowing the child to explore and experiment the task and guiding the child on how to perform the task. When the child has a difficult temperament and, despite this, the caregiver moves forward trying to keep the child involved in the task without adopting negative attitudes in relation to the child, this means that the caregiver is sensitive and should receive a higher score.

4. O cuidador procura completar a tarefa de maneira sensível às necessidades e aos desejos da criança.

Este item descreve a clareza com que o cuidador comunica à criança que há uma tarefa a ser feita na qual ele está engajado, estimulando assim a participação da criança. O cuidador demonstra envolvimento na atividade e esforço em completá-la. Se a criança não parece muito interessada na tarefa ou demonstra dificuldade, o cuidador procura contemplar com sensibilidade tanto os desejos/necessidades da criança quanto o objetivo da tarefa. Não é necessário que a atividade seja realizada corretamente, mas o cuidador deve tentar seguir a estrutura da tarefa. Um cuidador que desconsidera as necessidades da criança para completar a tarefa terá pontuação mais baixa nesse item, assim como um cuidador que não tenta modelar a estrutura e os objetivos da atividade. Um cuidador que leva em conta as necessidades da criança e também as exigências da tarefa deverá ter pontuação mais alta.

Observe se o cuidador está engajado na tarefa e na interação com a criança. Um cuidador que simplesmente deixa a criança fazer do jeito dela sem dar alguma instrução ou orientação terá pontuação mais baixa. Observe se há, no comportamento do cuidador, um equilíbrio entre deixar a criança explorar e experimentar a tarefa, e orientá-la sobre como realizar a tarefa. Quando a criança tem temperamento difícil e mesmo assim o cuidador segue tentando mantê-la engajada na tarefa e o cuidador não é negativo com a criança, isso significa que o cuidador é sensível e deverá receber pontuação mais alta.

5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.

This parent follows the directions given by the interviewer, including following any given rules (i.e., touching the appropriate colours). The parent is trying to follow the rules, while also balancing the needs of the child. If the child does not understand, then the parent is explaining the rules. If the child is not interested in following the rules, the parent is sensitively trying to get the child to follow the rules. A parent who undermines his/her child’s needs in order to strictly follow the rules will score lower on this item. A parent who is able to balance the needs of his/her child and the rules of the task will score higher.

O cuidador segue as instruções do entrevistador, incluindo quaisquer regras mencionadas (p. ex., tocar nas cores certas), levando em consideração as necessidades da criança. Se a criança não compreende, então o cuidador explica as regras. Se a criança não demonstra interesse em seguir as regras, o cuidador procura de maneira sensível fazer com que a criança siga as regras. Um cuidador que desconsidera as necessidades da criança para seguir
<p>| | | |</p>
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</thead>
<tbody>
<tr>
<td>6. <strong>This parent is clear in his/her requests for help.</strong></td>
<td>6. O cuidador pede ajuda de maneira clara.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This parent is communicating in a way that his/her child can understand. Not specific to verbal or nonverbal directions but, rather, a general clarity in communication.</td>
<td>O cuidador se comunica de uma forma que a criança consegue compreender. Este item não se refere especificamente a instruções verbais ou não verbais, mas à clareza geral da comunicação.</td>
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<td></td>
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<tr>
<td><strong>MIND-READING / LEITURA DO PENSAMENTO</strong></td>
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<tr>
<td>7. <strong>This parent is sensitively responsive to his/her child’s request for help, even those that are subtle and/or nonverbal.</strong></td>
<td>7. O cuidador responde sensitivelmente aos pedidos de ajuda da criança, mesmo os sutis e/ou não verbais.</td>
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<td></td>
<td>When the child shows that he/she needs help (verbally or nonverbally), this parent notices and responds appropriately. This parent does not ignore subtle or obvious signs that the child needs help. This does not include responding in an irritated, frustrated, or hostile manner.</td>
<td>Quando a criança demonstra precisar de ajuda (de modo verbal ou não verbal), o cuidador percebe e responde adequadamente. O cuidador não ignora sinais sutis ou óbvios de que a criança precisa de ajuda. Este item não inclui respostas em tom irritado, frustrado ou hostil.</td>
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<td></td>
<td><strong>Examples:</strong> “[child cannot find block] That is a hard one to find isn’t it?”; “[child cannot find block] Look over here.”; [moves block that child is looking for closer to child].</td>
<td><strong>Exemplos:</strong> &quot;[a criança não consegue achar o bloco] Esse está difícil de achar, né?&quot;; &quot;[a criança não consegue achar o bloco] Olha o bloco ali!&quot;; [puxa para perto o bloco que a criança está procurando].</td>
</tr>
<tr>
<td>8. <strong>This parent is good at rephrasing what his/her child does not understand.</strong></td>
<td>8. O cuidador consegue reformular</td>
<td></td>
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<tr>
<td></td>
<td>When the child is having difficulty understanding directions or the task, this parent notices and adjusts his/her instructions in a way that the child can better understand.</td>
<td>Quando a criança tem dificuldade em entender as instruções ou a tarefa, o cuidador percebe e ajusta a linguagem para que ela compreenda melhor.</td>
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<tr>
<td></td>
<td><strong>Examples:</strong> Parent sees child cannot find the small, yellow block and says “Find the one that has just 4 circles on it”; [when building the robot model] the child does not respond when the parent says “Let’s start at the bottom” and parent adjusts by saying “What colour are the robot’s feet?”</td>
<td>Diferentes linguagens, verbal e não verbal (como a modelagem), podem ser utilizadas pelo cuidador para facilitar a compreensão da</td>
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<tr>
<td></td>
<td>Different verbal and nonverbal languages (such as modeling), can be used by the caregiver to facilitate the understanding of the child and can be codified as “reformulating instructions”. Examples include: “Where is the other star? It’s not here. It’s there” [point to the peg]; “Let’s put [a piece] like this one? Where is the little ball?”. Higher scores (“4” and “5”) demand that, aside from modeling, the caregiver verbally reformulates the instructions that the child did not understand.</td>
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<tr>
<td><strong>MUTUALITY-BUILDING / DESENVOLVIMENTO DE MUTUALIDADE</strong></td>
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<td>--------------------------------------------------------</td>
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<tr>
<td><strong>9. This parent is sensitive to what his/her child knows and/or understands.</strong></td>
<td><strong>Exemplos:</strong> O cuidador vê que a criança não está conseguindo achar o bloco amarelo pequeno, e diz: “Procure o que tem só 4 círculos”; [ao construir o robô] a criança não responde quando o cuidador diz: “Vamos começar de baixo”, e o cuidador reformula, dizendo: “De que cor são os pés do robô?” criança, e serem codificadas como “reformular instruções”. Exemplos incluem: “Aonde tem a outra estrela? Não é aqui. É lá” [aponta para o pino]; “Vamos botar [uma peça] igual a essa? Cadê a bolinha?”: Pontuações mais altas (“4” e “5”) requerem que o cuidador, além da modelagem, reformule verbalmente as instruções que a criança não entendeu.</td>
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<tr>
<td><strong>This parent can take his/her child’s perspective with respect to what he/she knows in any given task. The parent can gauge the child’s level of understanding and what the child needs to be helped. This is about finding the zone of proximal development (i.e., the level at which instructions are most beneficial to the child- not too easy and not too hard).</strong></td>
<td><strong>Examples:</strong> breaking down the task into small parts; using language that is appropriate to the child’s developmental level; giving basic and appropriate directions; picking up when his/her child does not understand; supporting the child’s independence when appropriate.</td>
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<tr>
<td><strong>9. O cuidador é sensível ao que a criança sabe e/ou compreende.</strong></td>
<td><strong>O cuidador é capaz de avaliar o nível de compreensão da criança e que tipo de ajuda ela precisa em cada tarefa, identificando a zona de desenvolvimento proximal (isto é, o nível em que as instruções são mais proveitosas para a criança - nem muito fáceis, nem muito difíceis).</strong></td>
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<tr>
<td><strong>Exemplos:</strong> Divide a tarefa em partes menores; usa linguagem adequada para o nível de desenvolvimento da criança; dá instruções básicas e apropriadas; percebe quando a criança não compreende algo; incentiva a independência da criança quando apropriado.</td>
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<tr>
<td><strong>10. This parent gives positive feedback to reinforce his/her child.</strong></td>
<td><strong>This parent responds to the child’s actions with positive statements, vocalizations, and/or behaviours.</strong></td>
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<td><strong>Examples:</strong> “Good work”, “That’s it”, “Yes, like that”; “Right”; “High five!”; [nodding along with child’s actions.]</td>
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<tr>
<td><strong>10. O cuidador oferece feedback positivo para reforçar o comportamento da criança.</strong></td>
<td><strong>O cuidador responde às ações da criança com afirmações, vocalizações e/ou comportamentos positivos.</strong></td>
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<tr>
<td><strong>Exemplos:</strong> “Muito bem!”; “Ê assim mesmo!”; “Belezinha!”; “Isso mesmo!”, “Isso!”, “Éee!”, “Parabéns!”, “Que bonito!”, “Que legal!”; [bate palmas; balança a cabeça seguindo as ações da criança].</td>
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</table>
### 11. This parent promotes turn-taking within the dyad.

This is coded when parents promote turn-taking and reciprocity within the interaction (rather than a one-sided interaction). This can be explicit (e.g., "It’s your turn") or subtle (e.g., "What should we do next?"). This can be done either verbally or non-verbally.

**Examples:** “Now you have to do the next one”; “It’s your/my turn”; [Pointing at the child to convey that he/she should take a turn]; “I wonder where this one goes… [attempting to elicit an opinion from the child].” In highly mutual/reciprocal interactions, this may be subtle (e.g., parent sits back slightly and/or looks to child when they finish their turn).

**Other examples include:** “Now mommy places... now Maria places”; “Mommy is going to put it there first and then you have to do it the same way”; [The child placed the piece in the upper part of the peg and the mother says] “The mother pushes it to you”; “Now you put it there”.

### 11. O cuidador incentiva a reciprocidade/alternância na interação com a criança.

Este item é codificado quando o cuidador incentiva a reciprocidade e a alternância na interação, verbalmente ou não, e de modo explícito (p. ex., "Agora é a sua vez") ou sutil (p. ex., "O que a gente vai fazer agora?").

**Exemplos:** "O próximo é você quem faz"; "Agora é a sua/minha vez"; [apontar para a criança para indicar que é a vez dela]; "Onde será que esse bloco vai... [estimulando a criança a dar sua opinião]". Em interações altamente recíprocas, isto pode ser sutil (p. ex., o cuidador se inclina levemente para trás e/ou olha para a criança quando termina a sua vez).

**Outros exemplos incluem:** “Agora a mãe coloca… agora a Maria coloca”; “A mãe vai botar primeiramente e depois tu tens que fazer igual”; [A criança colocou a peça na parte de cima do pino e a mãe diz] “A mãe empurra pra ti”; “Agora bota tu”.

### Appendix 19: PICCOLO-BR: Item Distribution per Category in the Brazilian Sample

<table>
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<tr>
<th>Domain</th>
<th>Item</th>
<th>Category 0 (Absent)</th>
<th>Category 1 (Barely)</th>
<th>Category 2 (Clearly)</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Affection</strong></td>
<td>1</td>
<td>0.6</td>
<td>21.3</td>
<td>78.1</td>
<td>1.77</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9.7</td>
<td>49.0</td>
<td>41.3</td>
<td>1.32</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>17.4</td>
<td>48.4</td>
<td>34.2</td>
<td>1.17</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.0</td>
<td>21.9</td>
<td>78.1</td>
<td>1.78</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>22.6</td>
<td>29.7</td>
<td>47.7</td>
<td>1.25</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.2</td>
<td>25.8</td>
<td>71.0</td>
<td>1.68</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>7.7</td>
<td>27.7</td>
<td>64.5</td>
<td>1.57</td>
<td>0.64</td>
</tr>
<tr>
<td><strong>2. Responsiveness</strong></td>
<td>1</td>
<td>0.6</td>
<td>21.9</td>
<td>77.4</td>
<td>1.77</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9.0</td>
<td>41.3</td>
<td>49.7</td>
<td>1.41</td>
<td>0.65</td>
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<td>61.3</td>
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</table>
Appendix 20: Inter-Rater Reliability Estimates for the Cognitive Sensitivity Items and Scale Score in Brazilian Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>Pearson Correlation (N = 39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>.88</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>.49</td>
</tr>
<tr>
<td>3. This parent reminds his/her child about goals/rules of the task.</td>
<td>.51</td>
</tr>
<tr>
<td>4. This parent will try to complete the task in a way that is sensitive to the child’s needs and desires.</td>
<td>.61</td>
</tr>
<tr>
<td>5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.</td>
<td>.67</td>
</tr>
<tr>
<td>6. This parent is clear in his/her requests for help.</td>
<td>.86</td>
</tr>
<tr>
<td>7. This parent is sensitively responsive to his/her child’s requests for help, even those that are subtle/nonverbal.</td>
<td>.60</td>
</tr>
<tr>
<td>8. This parent is good at rephrasing what his/her child does not understand.</td>
<td>.60</td>
</tr>
<tr>
<td>9. This parent is sensitive to what his/her child knows and/or understands.</td>
<td>.67</td>
</tr>
<tr>
<td>10. This parent gives positive feedback to reinforce his/her child.</td>
<td>.76</td>
</tr>
<tr>
<td>11. This parent promotes turn taking within the dyad.</td>
<td>.29</td>
</tr>
<tr>
<td>Total</td>
<td>.83</td>
</tr>
</tbody>
</table>
## Appendix 21: Intra-Rater Reliability Estimates for the Cognitive Sensitivity Items and Scale Score in Brazilian Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>Pearson correlation (N = 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This parent gives clear and specific verbal directions.</td>
<td>.97</td>
</tr>
<tr>
<td>2. This parent gives positive nonverbal directions.</td>
<td>.87</td>
</tr>
<tr>
<td>3. This parent reminds his/her child about goals/rules of the task.</td>
<td>.75</td>
</tr>
<tr>
<td>4. This parent will try to complete the task in a way that is sensitive to the child’s needs and desires.</td>
<td>.90</td>
</tr>
<tr>
<td>5. This parent will try to follow the rules in a way that is sensitive to the child’s needs and desires.</td>
<td>.83</td>
</tr>
<tr>
<td>6. This parent is clear in his/her requests for help.</td>
<td>.77</td>
</tr>
<tr>
<td>7. This parent is <em>sensitively</em> responsive to his/her child’s requests for help, even those that are subtle/nonverbal.</td>
<td>.62</td>
</tr>
<tr>
<td>8. This parent is good at rephrasing what his/her child does not understand.</td>
<td>.77</td>
</tr>
<tr>
<td>9. This parent is sensitive to what his/her child knows and/or understands.</td>
<td>.56</td>
</tr>
<tr>
<td>10. This parent gives positive feedback to reinforce his/her child.</td>
<td>.90</td>
</tr>
<tr>
<td>11. This parent promotes turn taking within the dyad.</td>
<td>.73</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>.94</strong></td>
</tr>
</tbody>
</table>

As seen from this table, the intra-rater reliability for total scale score was found to be high ($r = .94$). Intra-rater reliability for individual items ranges between $r = .97$, which indicates a very high consistency of scoring by the same rater, to $r = .56$ which is below of the acceptable minimum of .70. However, the primary rater showed acceptable levels of intra-rater reliability in nine items out of the 11 items. The two items that lower consistency estimates were observed are ‘this parent is sensitively responsive to his/her child’s’ (item 7); and ‘this parent is sensitive to what his/her child knows and/or understands’ (item 9).