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ATTACHMENT REPRESENTATIONS AND SOCIAL COMPETENCE IN PRESCHOOL CHILDREN

Marília Solange Ornelas Fernandes

Tese submetida como requisito parcial para obtenção do grau de

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Tese orientada por Professora Doutora Maria Manuela Veríssimo

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Palavras-chave:

Vinculação; Script Base Segura; Competência Social; Relação entre Pares; Relação com professores

Key words:

Attachment; Secure Base Script; Social Competence; Peer relations; Teacher relations

Categorias de Classificação da tese

2800 Developmental Psychology

2840 Psychosocial & Personality Development

2900 Social Processes & Social Issues

2956 Childrearing & Child Care

2200 Psychometrics & Statistics & Methodology

RESUMO

De acordo com a teoria da vinculação, com base na história das interações que estabelecem com os cuidadores, as crianças elaboram uma representação mental que resume suas experiências de base segura, e adaptam-nas ao mundo social mais amplo (isto é, aos pares e a outros adultos significativos). E são estas que vão guiar as suas estratégias sociais (adaptativas e não adaptativas). A evidência empírica é consensual, demonstrando associações positivas entre a segurança da vinculação (avaliada como organização comportamental ou como representações mentais) e competência social. Contudo, a maioria dos estudos usa medidas indiretas para avaliar a competência social e prevalece um foco exclusivo nos professores ou na perspetiva da mãe, desvalorizando a perspetiva do pai sobre a competência social da criança.

Os trabalhos empíricos aqui apresentados têm como objetivo contribuir para o estudo sobre o impacto das relações de vinculação no desenvolvimento da competência social. Enfatizando a importância do uso de uma abordagem com múltiplos informantes. No primeiro estudo, numa amostra de 369 questionários mãe-pai-educadora, explorámos a perceção de pais e educadoras sobre a competência social da criança através do questionário *Social Competence and Behavior Evaluation-30* e testamos a invariância da medida entre os diferentes informadores. Usando o CT-C (M-1), confirmámos uma forte concordância entre os pais e uma fraca concordância ao comparar os pais com as educadoras. Os resultados também mostraram que as mães estão mais de acordo com as educadoras do que os pais. Os resultados sugerem ainda que as diferenças entre rapazes e raparigas não se devem a variação de medida.

No segundo estudo, com uma amostra de 82 crianças e suas educadoras, analisámos o contributo do SBS para as perceções das educadoras sobre a competência social da criança (através de medidas compósitas de competência social, de comportamento de externalização e de internalização). Os nossos resultados indicam que a segurança das representações de vinculação está positivamente relacionada com a competência social e negativamente relacionada com os comportamentos externalizantes reportados. Foram ainda encontradas diferenças entre rapazes e raparigas no que respeita as representações de vinculação e os comportamentos sociais, favorecendo as raparigas.

No último estudo, numa amostra de 77 crianças, continuámos a explorar as relações entre SBS e a competência social das crianças. Contudo, usando não apenas as percepções das educadoras, mas também medidas diretas de observação, para avaliar a competência social das crianças. Os resultados indicam que ter um SBS mais alto prediz valores mais altos na competência social quer ao nível da medida de observação direta e quer ao nível das perceções das educadoras. Também aqui foram encontradas diferenças entre rapazes e raparigas quer no que respeita os SBS (favorecendo as raparigas) quer no que respeita a competência social reportada pelas educadoras (favorecendo também as raparigas) ou observada (favorecendo os rapazes).

Assim, com estes três estudos empíricos pretendemos contribuir para a compreensão da relação entre relações de vinculação e competência social das crianças no grupo pré-escolar, destacando a importância do uso de uma abordagem com múltiplos informantes, e explorando as diferenças entre rapazes e raparigas.

ABSTRACT

From an attachment theory perspective, based on their interactions' history with the caregivers, children elaborate a mental representation that summarizes their secure base experiences and adapt them to the larger social world (i.e. with peers and other significant adults). This will guide their social strategies (both adaptive and maladaptive). The empirical evidence is consensual, demonstrating positive associations between attachment security (whether assessed as a behavioral organization or as a mental representation) and social competent behavior. However, most of these studies use indirect measures to assess social competence, prevailing a focus on one informant, mostly teachers' or mothers' perspectives while father's perspective on children's social competence is disregarded

These empirical studies aim to contribute to the current state of knowledge about the impact of attachment relationships for the development of social competence in preschool years, emphasizing the importance of using a multiple informant approach.

In the first study, in a sample of 369 mother-father-teacher reports, we explored parents' and teachers' perception of children's social competence using the Social Competence and Behavior Evaluation-30 questionnaire and tested for measurement invariance across raters. Using CT-C(M-1), we confirmed a strong agreement between both parents, and only a weak agreement when comparing parents with teacher' ratings. Results also showed that mothers are in more agreement with teacher than are fathers. We also found that differences between boys and girls are not due to measurement variance.

In the second study, in a sample of 82 children and their teachers, we analyzed the contributes of the SBS to teachers' ratings on child social competence composite, and on externalizing and internalizing behavior composites. Our results indicate that security of attachment representations was positively related with social competence and negatively related with ratings on externalizing behaviors. We also found sex differences in SBS and reported social competence, both favoring girls.

In the last study, in a sample of 77 children, we continued exploring SBS relations with children's social competence by including, not only, indirect teacher's ratings, but also direct observed measures. Results indicate that having a higher secure base script predicts higher values on both child direct and indirect measured social competence. Sex differences were also found, with girls presenting higher SBS and being rated as more social competent by their teachers. Observers described boys as more social engaged.

Taken together, these three empirical studies aim to contribute for the understanding of the relation between attachment relationships and children's social competence in the preschool group, highlighting the importance of using a multiple informant approach, and exploring sex differences.

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Chapter 1

General Introduction

It's within early attachment relationships with the caregiver(s) that children develop interaction skills, a sense of self-worth and trust that impacts later social relations (Bowlby, 1982; Bretherton & Munholland, 2008; Waters & Sroufe, 1983). Attachment security (whether assessed as behavioral organization or as a mental representations) serves as a protector factor to the maturing child from deviant developmental trajectories, as well as to promote positive adaptive functioning in new social contexts (Bowlby, 1973). The empirical evidence is consensual, demonstrating the positive association between early attachment security and later social competence (e.g. Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010; Groh et al., 2014, Groh, Roisman, Van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012; Pallini, Baiocco, Schneider, & Atkinson, 2014; Schneider, Atkinson, & Tardif, 2001). However, the developmental mechanisms (i.e. the SBS, secure base script) that linked them only more recently has been specify (e.g. Posada & Waters, 2018; Veríssimo, Santos, Fernandes, Shin & Vaughn, 2014; Vaughn, Posada, & Veríssimo, 2019). That is, based on their interactions history with the caregiver(s), children elaborate a mental representation that summarizes their secure base experiences (i.e. SBS) and adapt them to the larger social world (i.e. with peers and other significant adults) (Veríssimo, et al., 2014; Vaughn, et al., 2019). This will guide children strategies (both adaptive and maladaptive) inflecting the selection of playmates and their behavior in interaction with others (Veríssimo, et al., 2014; Sroufe, Egeland, & Kreutzer, 1990; Vaughn, et al., 2019; Waters & Sroufe, 1983).

Those children with secure interactions histories, experienced responsive an attuned care, will see social relationships as more rewarding, feel more capable and have more skills for successful interpersonal interaction. Whereas, children with a less optimal early relationship might be less able to interact with others successfully, exhibit more maladaptive behaviors and attribute more hostile or distant intent in ambiguous social situations (Sroufe, Egeland, & Carlson, 1999). In that sense, success in the first critical social development task (i.e., the co-construction of the attachment relationships with the caregiver) promotes success in the next development task (i.e. integrate and co-construct relationships with significant others) (Waters & Sroufe, 1983).

Engaging positively with others represents an important developmental task and an indicator of preschooler children's social adjustment (Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Vaughn et al., 2016). Social and emotional competencies can be observed as children exhibit different behavioral strategies. They can engage with others acting prosocial, sharing, comforting, and cooperating (Eisenberg, Fabes, & Spinrad, 2006; Fabes, Martin, &

Hanish, 2009); on the other hand, they can behave against others, acting impulsive, being easily frustrated and showing reactive aggression (Blair, Denham, Kochanoff, & Whipple, 2004); or even, feel anxious in familiar and unfamiliar social situations, having a hard time engaging with others, or moving away from them (Rubin, Bowker, & Kennedy, 2009). Children may end up alone, being actively isolated or rejected by their peers (Rubin, Bowker et al., 2009), putting them at risk for achieving interactional goals (Birch & Ladd, 1998; Rubin, Bukowski, & Parker, 2006). And it´s inside the preschool peer group that deficits on social engagement become more perceptive (Gazelle & Rubin, 2010; Rubin & Coplan, 2004; Rubin, Coplan, & Bowker, 2009). Moreover, children behaviors that isolate them from other children and/or other adults are a result of the interactions, the expectations concerning the self, the others and the patterns of the relationship system, rather than as a result of child inherent characteristics (Sroufe, 2002). From a developmental perspective it's expected that children develop positive interactions with others (especially with peers and significant adults outside the family), while attaining personal and social goals (e.g., initiating and maintaining interactions, having friends, peer popularity). And within these interactions they also develop social knowledge and emotional understanding (e.g., knowing the group, considering others' feelings and their possible reactions); and social skills (e.g., empathy, communication, prosocial behaviors), allowing them to approach new others successfully (Rose-Krasnor, 1997; Waters & Sroufe, 1983).

In a general sense, the three empirical studies presented in this thesis aim to contribute for the understanding of the relation between attachment relationships and children's social competence in the preschool group, highlighting the importance of using a multiple informant approach. In our first study, we explored Social Competence and Behavior Evaluation-30 (SCBE-30; LaFreniere & Dumas, 1996) questionnaire and test for measurement invariance across teachers, mothers and also fathers (on the three SCBE-30 traits: social competence, Anger-Aggressive and Anxious-Withdrawal). Although presenting identical factor structure, parents' and teachers' ratings seems to be independent. Using CT-C(M-1), we confirmed a strong agreement between both parents, and only a weak agreement when comparing parents (mothers or fathers) with teacher' ratings. Results also showed that mothers are in more agreement with teacher than fathers are. Associations between SCBE-30 dimensions were analyzed for each rater and some comparisons were made. Measurement invariance across child sex was also explored but not found, implying that differences between boys and girls are not due to measurement variance.

In the second study, we analyze the relation between attachment security (using the ASCT protocol, that evaluates children's narratives for the presence of a SBS) and social competence in the peer group. Social competence was evaluated by a composite measure of teachers' ratings on two self-report instruments, the SCBE-30 (LaFreniere & Dumas, 1996) and the Penn Interpersonal Preschool Play Scales (PIPPS; Fantuzzo et al., 1995, Portuguese version by Torres, Veríssimo, Monteiro, Ribeiro, & Santos, 2014) to better correspond to social competence definition. Given the results of previous meta-analyses relating attachment security and problem behaviors (Fearon et al., 2010; Groh et al., 2012), we also tested for relations between the SBS and teachers' ratings on externalizing and internalizing behaviors. Results showed that SBS is positively related to social competence and negatively associated with externalizing, but not significantly associated with internalizing behaviors. Concerning sex differences, girls presented higher SBS and were rated by their teachers as more socially competent, while boys were rated as presenting higher for aggressive/externalizing behaviors.

In the last study, we continued exploring SBS relations with children's social competence, including not only the teacher's ratings on the social competence composite measure but adding direct observations of social engagement, as an indicator of social competence (see Santos, et al., 2019; Vaughn et al., 2016) driven from one of the three "families" of SC hierarchical model. Results indicate that having a higher secure base script predicts higher values on both child SE or SC. Our results are consistent with recently findings (Vaughn, et al, 2019) support the hypothesis of attachment security (i.e.SBS) as a foundational promotor of peer social competence and related social/cognitive skills. Specifically, with SBS predicting teacher's ratings of children's social competence (e.g. Posada, et al., 2019) and the direct observed social behavior (e.g. Nichols, Vaughn, Lu, Krzysik & El-Sheikh, 2019; Verissimo et al., 2014). Again, sex differences were found, with girls being rated as more social competent (more than boys) by their teachers and as less social engaged by the observers.

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Chapter II

Analyzing convergent and discriminant validities of the three SCBE-30 traits across multiple raters using Correlated Trait–Correlated Method Minus One approach

Abstract

The factorial structure of the SCBE-30 questionnaire (LaFrenière & Dumas, 1996) was analyzed, testing the convergent and discriminant validity of the three SCBE-30 traits (Social Competence, Anger-Aggression, Anxiety-Withdrawal). Measurement invariance across multiple raters (mother, father and teacher) was also explored, aiming to understand their specific perspectives (but also to their overlapping information) about the same child. Using a new methodological approach, Correlated Trait-Correlated Method Minus One [CT-C(M-1)] model we compare and contrast the different raters against each other. Participants were 369 Portuguese children (173 boys and 196 girls), ages ranging from 32 to 78 months (M = 55.85, SD = 11.54), all attending public preschools. A strong agreement between mother and father was found, but when comparing parents with teacher' ratings only a weak agreement was obtained. Girls (more than boys) were described as more social competent by their fathers and teachers, while boys (more than girls) were described as more aggressive by their mothers and teachers. Older children were described by their mother' and teacher's as being more social competent. Younger children were described as more anxious-withdrawal by their teachers and as more anger- aggressive by both the mother and teacher.

Key words: correlated trait–correlated method minus one model, multitrait-multimethod, convergent validity, discriminant validity, teacher relations, social competence

Introduction

Studying children behavioral and emotional characteristics can help us better understand risk and protector factors of a healthy development (Denham, Wyatt, Bassett, Echeverria, & Knox, 2009). In this study, we explored affective quality of children's relationships with peers, as well as with significant adults, using SCBE-30 questionnaire (La Freniere & Dumas, 1996). And knowing that family and school are central contexts of development (Schmitt, Sacco, Ramey, Ramey & Chan, 1999), both mothers and fathers, as well as teachers are identified as the main observers and the most reliable informants of children's behavior. Teachers observe child behavior and compare with peers, but usually do not have access to a child's behavior at home or within the community, whereas parents observe children in several contexts, but have limited information concerning their child's behavior at school. And even parents living in the same household might have different kind of expectations on child behavior. Each of these significant adults may have a unique perspective and access to a partially overlapping information about the child, using their descriptions could help researchers to better understand child's social adjustment.

Teacher-reports are a quick and simple way of collecting data about children but could be bias. Instead of relying on a single source it's important to get data from multiple informants and explore discrepancies across different informants (Achenbach, McConaughy, & Howell, 1987; Reyes & Kazdin, 2005). In the present study we used not only teacher's but also both mothers' and fathers' reports (multiple raters) to evaluate, the same child on multiple traits (Social Competence, Anxiety-Withdrawal and Anger-Aggressive). We explore measurement invariance using the CT-C(M-1) to compare and contrast them against each other (Eid, Lischetzke, Nussbeck, & Trierweiler, 2003; Eid et al.2008). Method effects (in our case raters' effects) can be analyzed separately for different traits to examine the potential trait-specificity, to test for systematic method effects, and if these effects are homogeneous across and within traits. Traits and methods factors can be linked to other latent constructs allowing for the analysis of construct validity and criterion validity in one single model (Eid et al, 2008; Geiser, Burns, & Servera, 2014).

We used the SCBE-30 questionnaire (La Freniere & Dumas, 1996) that provides a standardized description of affect and behavior in context, discriminating children's behavioral-

emotional problems and social adjustment, from teachers' or parents' perspectives (LaFreniere & Dumas, 1996; LaFreniere et al., 2002). SCBE-30 has been used with children from 30 to 78 months, in different international settings, cross-sectional and longitudinal researches (LaFreniere et al., 2002). Previous studies identified three factors: one adaptive pattern - the Social Competence, SC- related to positive adaptation of the child, assessing positive social interaction, cooperation, as well as prosocial behavior/empathy with peers; and two distinct patterns of maladaptive behavior -Anger-Aggression, AA- relate to externalizing behaviors including angry, aggressive, irritable and oppositional behaviors, representing children's incapacity to regulate negative emotions; and - Anxiety-Withdrawal, AW - measure internalizing behaviors, excessively dependent, anxious, depressed and isolated behaviors, describing those children who spend much of their time alone and unoccupied, with little interest in group activities. Presenting good internal consistency across different countries (.79 to .92, being the average level of internal consistency across all samples of .87 for the SC, .88 for AA, and .84 for AW) (e.g., LaFreniere et al., 2002).

Generally, in previous studies children are described as exhibiting more SC behaviors and less AA or AW behaviors (Bárrig & Parco, 2017; Blair, Denham, Kochanoff, & Whipple, 2004; Klyce, Conger, Conger, & Dumas, 2011; LaFreniere & Dumas, 1996; LaFreniere, et al., 2002; Sette, Baumgartner, & MacKinnon, 2014; Vasquez-Echeverria, Rocha, Leite, Teixeira, & Cruz, 2016;). In a cross-cultural study (LaFreniere et al., 2002) reported significant and negative correlations between the SC and both AA (range between - .21 and - .56) and AW (range between - .21 to - .39) and the Portuguese results (Vasquez-Echeverria, et al, 2016) were within that range. Even though AA and AW scales are conceptually distinct, there were a few studies that reported a significantly positive relation between those two subscales (Blair, et al., 2004; Butovskaya & Demianovitsch, 2002; Chen & Jiang, 2002).

Regarding sex differences, for most of the studies, girls were rated significantly higher than boys on SC and lower on AA (Blair et al, 2004; LaFreniere et al., 2002; Masataka, 2002; Torres, Veríssimo, Monteiro, Ribeiro, & Santos, 2014; Vasquez-Echeverria, et al, 2016). Considering AW, most studies do not report sex differences, except for two studies where boys were rated by their teachers with higher values (Blair et al., 2004; Chen & Jiang, 2002). One study (Barrig & Parco, 2017) found no sex differences for any SCBE-30 dimensions.

Age-related changes were also reported on most of the studies with older children being reported as more SC (Chen & Jiang, 2002; Butovskaya & Demianovitsch, 2002, LaFreniere & Dumas, 1996; LaFreniere et al., 2002; Vasquez-Echeverria et al., 2016).

Applicability and validity of the SCBE-30 scale has been showed in different cultural contexts (e.g., Bárrig & Parco, 2017; Chen & Jiang, 2002; Diener & Kim, 2004; Dumas, Arriaga, Begle, & Longoria, 2011; Klyce, et al., 2011; Kotler & McMahon, 2002; LaFreniere et al., 2002; Sette, et al., 2014; Vasquez-Echeverria, et al., 2016; Zupancic, Gril, & Kavcic, 2000). However, most of the studies used only the teachers' version, a few used only the parents', with mostly using only mothers' reports (e.g. Bárrig & Parco, 2017; Kotler & McMahon, 2002), and an even smaller number compared teacher' and parent' versions (again using only mother's reports) (e.g. Klyce et al., 2011), diminishing fathers' perspective.

Our main goal was to test for measurement invariance between multiple raters (mothers, fathers and teachers) on the three traits of SCBE-30 in a Portuguese sample and. Child's age and sex impact was also analyzed.

Method

Participants

The participates were 369 Portuguese children (173 boys and 196 girls), with ages ranging from 32 to 78 months (M = 55.85, SD = 11.54). Only one child per household participated. 55.8% were firstborn, and 63.7% had siblings. All were enrolled in public preschools across Portugal. Participants included 66 children (35 boys) with 32 - 42 months old (M = 38.32, SD = 2.77), 88 children (36 boys) 43 - 54 months (M = 48.66, SD = 3.18), 135 children (62 boys) 55 - 66 months (M = 60.21, SD = 3.45), and 80 (40 boys) 67 - 78 months (M = 70.84, SD = 2.79). Each one of the 45 classes included an average of 20 children (range between 19 – 24), all families were invited to participate, on average 41% (15 to 100%) complete the (usable) set of mother and father questionnaires.

Only the leading teachers in the classroom participated in this study. Their ages varied between 41 and 50 years (M = 44.82; SD =2.75), all female, with a university degree in early Education, and very experienced (21 to 25 years of teaching experience). Most of the parents were either married or cohabiting (95.1%). Mothers' ages ranged between 21 - 47 years (M =

33.53; SD = 6.70), and fathers' ages ranged from 23 - 55 (M = 35.97; SD = 7.28). Mothers' education level varied between 4 - 21 years (M = 11.94; SD = 4.59) and fathers between 1 - 19 (M = 10.34; SD = 4.64).

Instruments

Social Competence and Behavior Evaluation Scale: The Short Form (SCBE-30, LaFrenière & Dumas, 1996).

SCBE-30 is a short version of the SCBE-80 designed to evaluate patterns of social competence, emotion regulation and expression, and adjustment difficulties in children aged 30 to 78 months (LaFrenière, Dumas, Capuano, & Dubeau, 1992). It has been used to evaluate child's relationships with parents/teachers and peers. It provides a standardized description of affect and behavior in context, being also useful as a screening tool for discriminate specific types of behavioral-emotional problems and to assess children's positive social adjustment or competence (LaFrenière, et al., 2002). It, has a 6-point Likert-type response format: *1- Never* to *6- Always*, and it is composed of three 10- item scales: 1) Social Competence (SC), which refers to pro-social behaviors that indicate a well-adjusted, flexible, emotionally mature, and generally pro-social pattern of social adaptation (e.g., ''comforts or assists children in difficulty''); 2) Anger-Aggression (AA), that refers to externalizing behaviors such as angry, aggressive, selfish, and oppositional behaviors (e.g., ''easily frustrated''); and 3) Anxiety-Withdrawal (AW), referring to anxious, depressed, isolated, and overly dependent behavior (e.g., ''avoids new situations'').

The SCBE-30 is described as a sensitive measure with high internal consistency, reliability and stability. In this study the Cronbach's alpha for the three informants were very good and ranged from .81 to .87 for Social-Competence, from .80 to .93 for Anger-Aggression, and from .68 to .77 for Anxiety-Withdrawal.

Procedure

Stratified random sampling was used to select schools to contact for participation in the study. The population was divided into 20 groups corresponding to Portugal' regions. Within each region, a random number table was used to determine the schools to be contacted. We contacted a total of 63 schools, 30 consented to participate and 45 classes contribute to the

study. Following consent from school principals, sealed envelopes were given to classroom teachers to be forwarded to mothers and fathers. In these envelops were sent consent forms, the sociodemographic and the SCBE-30 questionnaires. Parents were asked to complete questionnaires independently. Forty-one percent of the questionnaires were returned with all the information, and the consent for teachers to report on the child behavior (one per family). Teachers rated consented children (middle to the end of the year to guarantee that they were well acquainted with the child), resulting in 369 ratings with complete (usable) sets of mother, father and teacher ratings. Only these ratings were included in the analyses.

Analytic Plan

We explored items distributions. First, considering a global model (not distinguishing who answered the questioners - mothers, fathers or teachers). Next, since we were interested on comparing and contrasting mother', father' and teacher' responses we modify the model to include that distinction. Because the same child was being reported by parents and teacher, we explore the dependency of the observations by correlating the residual covariance between same indicator across parents and teachers.

We perform confirmatory factor analyses (CFA) and measurement invariance (MI), using the *R packages Lavaan* (Rosseel, 2012), *SemTools* (Jorgensen, Pornprasertmanit, Schoemann, & Rosseel 2018), to evaluate the SCBE-30 three factor model fit and consistency with the data. Given the ordinal nature of the data we used the Robust Weighted Least Squares (RWLS) estimator (Flora & Curran, 2004) and configural invariance was evaluated using three model-fit robust indices (Brosseau-Liard, Savali, & Li, 2012; Hu & Bentler, 1999): 1) the robust Comparative Fit Index (CFI, representing a good fit if higher than .95 and acceptable fit if higher than .90); 2) the robust Root Means Square Error Approximation (RMSEA, considering a good fit if lower than .06 and acceptable if lower than .08) and 3) the Weighted Root Mean Square Residual (WRMR, good when less than 1.0, with lower values indicating better fit; Yu & Muthén, 2002). When model fit improvement was needed, the factor loadings were taken into consideration in order to decide whether to maintain or exclude the items (Hair, Anderson, Tatham, & Black, 1998).

Using the final model we performed the Correlated Trait-Correlated Method Minus One [CT-C(M-1)], a MultiTrait-MultiMethod (MTMM) specific model (Eid, et al, 2003; Eid, et al., 2008) to test for measurement invariance across multiple raters (mother, father, and teacher-

reports), examine the convergent (that is how same traits are measured by different raters, inferred when there are relatively high monotrait-heteromethod correlations), and discriminant validity (that is how distinct the traits are, inferred when there are relatively low heterotrait-monomethod correlations) of the SCBE-30. In our study, parents and teachers, are structurally different and fixed for each assessed child. Given that, a single child is evaluated by multiple raters (parents and teachers) on multiple traits (SC, AA, AW), and each type of rater has a unique perspective and access to a partially overlapping information about the child, we were interested in their particular perspective as raters (Funder & West, 1993; Eid et al 2008). Therefore, we select a modeling approach that compares and contrasts the different raters against each other (Eid, Lischetzke, & Nussebeck, 2006).

All the indicators of the reference method (teacher in MTMM analysis 1, mother in MTMM analysis 2 and father in MTMM analysis 3) were linked to the appropriate traits' factors and not to any method factor. On the other hand, the nonreference methods (mother and father ratings in MTMM analysis 1; father and teacher ratings in MTMM analysis 2, mother and teacher ratings in MTMM analysis 3) indicators were linked to the appropriate traits' factors and to their method factors. The trait factors were correlated with each other and the same happened to method factors. Method and trait factors were assumed to be uncorrelated.

We examined the level of convergence of the nonreference method with the reference method, whereas trait factor loadings lower than .40 (or consistency coefficient lower than .16) were considered "weak," loadings from .40 to .60 (consistency coefficients from .16 to .36) considered "moderate," and loadings above .60 were considered "strong" (consistency coefficients above .36) (Garson, 2013).

Sex invariance was tested using a multiple-group confirmatory factor analysis (MG-CFA). When the difference in the fit indices (ΔCFI and ΔRMSEA) between a model and the (preceding) less constrained model was equal or less than .01 for ΔCFI and equal or less than .015 for ΔRMSEA, we considered that the level of measurement invariance was achieved (Chen, 2007).

Results

Prior to our main analyses, we examined items distributions (see table 1). Children were described as presenting more adaptive (M = 3.97, SD = .82 for mothers, M = 3.95, SD = .79 for

fathers, *M* = 3.73, *SD* = .94 for teachers) and less maladaptive behaviors (AA, *M* = 2.25, *SD* = .66 for mothers, *M* = 2.28, *SD* = .67 for fathers, *M* = 1.90, *SD* = .91 for teachers; and AW, *M* = 1.92, *SD* = .59 for mothers, *M* = 1.99, *SD* = .55 for fathers, *M* = 1.75, *SD* = .59 for teachers) as expected in non-clinical samples as ours (see Bárrig & Parco, 2017; Blair et al., 2004; Klyce et al., 2011; LaFrenniere et al. 2002).

Table 1. SCBE-30 Items Distributions Considering Mothers, Fathers and Teachers (N=369)

		Global					Mother					Father					Teacher					σ		
		M	SD	Sk	Ku	λ	M	SD	Sk	Ku	λ	M	SD	Sk	Ku	λ	M	SD	Sk	Ku	λ	MF	MT	FT
SC	SCBE13	2.71	1.29	.72	-.09	.38	2.77	1.28	.70	-.13	.43	2.83	1.31	.51	-.46	.44	2.52	1.25	.96	.51	.38	.42***	.15**	.15**
	SCBE15	3.14	1.21	.39	-.39	.57	3.18	1.14	.46	-.45	.51	3.30	1.13	.24	-.50	.52	2.93	1.32	.56	-.24	.64	.30***	.06	.11*
	SCBE17	3.97	1.33	-.30	-.67	.66	4.14	1.31	-.45	-.57	.66	4.15	1.30	-.54	-.32	.56	3.63	1.32	.08	-.69	.75	.23***	.01	.01
	SCBE19	3.68	1.38	.07	-.90	.68	3.91	1.37	-.20	-.92	.70	3.92	1.29	-.05	-.92	.69	3.21	1.35	.50	-.41	.74	.36***	.06	.04
	SCBE20	3.58	1.47	.15	-1.01	.63	3.68	1.50	.06	-1.06	.60	3.44	1.45	.26	-.92	.57	3.62	1.46	.11	-1.04	.68	.36***	-.07	-.06
	SCBE22	4.37	1.51	-.60	-.77	.63	4.53	1.55	-.79	-.60	.60	4.54	1.48	-.83	-.40	.63	4.03	1.46	-.23	-.95	.72	.30***	.11*	-.01
	SCBE24	4.27	1.38	-.52	-.56	.68	4.24	1.40	-.55	-.52	.66	4.35	1.31	-.63	-.33	.60	4.22	1.43	-.39	-.83	.78	.34***	-.01	.02
	SCBE26	3.90	1.41	-.18	-.95	.57	3.93	1.41	-.27	-.91	.51	3.79	1.37	-.07	-1.04	.55	3.98	1.46	-.21	-.92	.61	.40***	-.07	.00
	SCBE27	4.11	1.36	-.25	-.84	.71	4.09	1.32	-.33	-.76	.63	3.98	1.25	-.18	-.79	.68	4.26	1.47	-.32	-.98	.79	.26***	-.08	.01
	SCBE30	5.15	1.13	-1.57	2.37	.64	5.24	1.18	-2.01	3.90	.55	5.21	1.09	-1.74	3.20	.61	4.99	1.11	-.95	.25	.69	.28***	.10	-.08
AA	SCBE03	2.28	1.14	.97	.83	.66	2.34	1.09	.90	.63	.61	2.33	1.07	.86	.85	.62	2.16	1.25	1.14	.92	.71	.30***	-.10	-.09
	SCBE04	2.62	1.28	.78	.11	.70	2.93	1.19	.69	-.01	.60	2.92	1.22	.68	-.01	.59	2.01	1.19	1.48	2.04	.78	.35***	-.05	-.05
	SCBE05	2.42	1.24	.97	.55	.80	2.51	1.18	.95	.72	.69	2.61	1.20	.86	.45	.72	2.14	1.28	1.25	.92	.85	.20***	-.06	-.09*
	SCBE10	2.17	1.23	1.13	.81	.70	2.22	1.21	1.07	.68	.64	2.43	1.26	.85	.16	.67	1.85	1.14	1.62	2.48	.78	.20***	-.06	-.01
	SCBE11	1.67	.97	1.68	2.82	.62	1.63	.95	1.89	3.96	.56	1.63	.87	1.38	1.61	.58	1.74	1.08	1.59	2.06	.76	.34***	-.08	.06
	SCBE16	1.66	.96	1.80	3.48	.66	1.56	.90	1.91	3.97	.68	1.54	.77	1.45	2.02	.61	1.87	1.15	1.56	2.00	.85	.41***	.27***	.29***
	SCBE18	2.11	1.07	1.20	1.62	.65	2.00	.92	1.03	1.45	.60	2.06	.99	1.02	1.23	.60	2.28	1.26	1.15	.84	.85	.31***	.11*	.13*
	SCBE25	1.77	1.13	1.65	2.31	.71	1.86	1.10	1.57	2.48	.61	1.95	1.19	1.32	1.22	.69	1.52	1.06	2.25	4.36	.86	.35***	.04	.11*
	SCBE28	2.42	1.16	.64	.02	.66	2.79	1.06	.78	.60	.49	2.78	1.05	.47	.04	.50	1.69	1.00	1.55	2.09	.82	.20***	.03	-.01
	SCBE29	2.32	1.31	.89	.06	.68	2.60	1.25	.70	-.03	.51	2.58	1.26	.58	-.47	.57	1.78	1.24	1.84	2.79	.84	.35***	.08	.05
AW	SCBE01	2.22	1.45	1.06	-.04	.38	2.17	1.49	1.20	.26	.58	2.22	1.51	1.13	.07	.48	2.29	1.36	.78	-.67	.31	.52***	.09	.08
	SCBE02	1.83	.87	1.07	1.31	.49	1.82	.82	.84	.63	.40	1.86	.84	1.10	1.89	.43	1.81	.94	1.20	1.15	.54	.35***	-.09	-.06
	SCBE06	3.02	1.37	.47	-.55	.11	3.19	1.36	.42	-.63	.28	3.27	1.30	.22	-.62	.13	2.60	1.35	.89	.12	-.35	.54***	.00	.02
	SCBE07	2.36	1.27	.95	.35	.70	2.40	1.20	.78	.09	.66	2.57	1.27	.73	-.04	.69	2.12	1.30	1.38	1.35	.77	.37***	-.04	.01
	SCBE08	1.35	.70	2.77	10.32	.72	1.29	.67	3.20	13.09	.65	1.33	.63	2.28	6.21	.63	1.43	.77	2.65	9.58	.82	.32***	-.04	-.08
	SCBE09	1.79	1.03	1.63	2.88	.77	1.88	1.04	1.52	2.70	.70	1.86	1.01	1.27	1.47	.65	1.62	1.02	2.18	5.00	.86	.30***	-.07	-.02
	SCBE12	1.56	.94	2.31	6.24	.68	1.63	1.03	2.23	5.64	.63	1.69	1.00	1.86	4.00	.60	1.35	.75	3.02	11.04	.79	.37***	-.02	-.02
	SCBE14	1.39	.75	2.40	7.26	.79	1.41	.75	2.27	6.51	.76	1.40	.70	1.77	2.83	.72	1.37	.78	2.96	10.72	.84	.21***	.10	.19***
	SCBE21	1.45	.95	2.64	7.33	.64	1.41	.89	2.78	8.56	.67	1.55	.97	2.03	4.07	.61	1.39	.98	3.10	9.62	.63	.29***	.19*	.08
	SCBE23	1.88	1.19	1.45	1.62	.53	2.00	1.21	1.31	1.38	.51	2.10	1.28	1.16	.68	.49	1.54	.99	2.03	3.84	.59	.42***	.07	.04

*Note: λ= factor loadings, for global loadings we used Model 1 and for each rater loadings we used Model 2; σ= residuals covariances using Model 3 (MF-Mother/Father, MT-Mother/Teacher, FT-Father/Teacher); *p< .05; **p< .01; ***p< .001*

Confirmatory Factor Analyses of SCBE-30

To evaluate the model fit and consistency with the data we performed a CFA, using *DWLS* robust estimator (*RWLS*) taking the ordinal nature of the data into account (Flora & Curran, 2004). As we can see in table 2, the initial model (M1) tested using all 30 items organized in three factors (not considering that there were different raters answering the questionnaires) did not present an acceptable fit. To improve the model, we had in consideration that there were three different raters (mothers, fathers and teachers) (M2) and in the next model (M3), we added residual covariances between mothers', fathers' and teachers' related items since raters were describing the same child (residual covariance can be seen in table1). In M4 we dropped item 8, that presented normality problems (see table 1), it was left skewed, as

expected in a normal sample as ours, meaning that all raters described children as usually not sad or depressed. In the following models, we gradually eliminated two items presenting low factor loadings (λ < .50) for all raters: in M5 we dropped item 6, values were unexpectedly high and the modification indices suggest that it better fit on SC factor; in M6 we removed item 13, the values were low and the modification indices suggest that it better fit on AA or AW. Model fit was improved and presented an acceptable. However, WRMR was still higher than 1 so we gradually eliminated two more items presenting low factor loadings for two of the raters: in M7 we deleted item 1, that presented low factor loading for both fathers and teachers; in M8 we dropped item 2 that presented low factor loadings for both parents. The final model (M8) presented an acceptable fit (robust CFI=.91, RMSEA=.038 and WRMR=1.35).

Table 2. Robust Fit Indices for the SCBE-30 CFA Models

Model	Items Deleted	*RWLS*	*df*	*p*	CFI	TLI	RMSEA [90 % CI]	SRMR	WRMR
M1		4298.01	420	<.001	.78	.76	.094 [.091;.096]	.10	3.04
M2		6771.34	3879	<.001	.81	.81	.045 [.043;.047]	.09	1.70
M3		6002.41	3789	<.001	.86	.85	.040 [.038;.042]	.09	1.53
M4	8	5651.72	3531	<.001	.86	.85	.040 [.038;.042]	.09	1.53
M5	8 and 6	5032.62	3282	<.001	.88	.88	.038 [.036;.040]	.08	1.44
M6	8, 6 and 13	4519.18	3042	<.001	.90	.89	.036 [.034;.039]	.08	1.37
M7	8, 6, 13 and 1	4224.21	2811	<.001	.90	.90	.037 [.035;.039]	.08	1.36
M8	8, 6,13,1 and 2	3937.01	2589	<.001	.91	.90	.038 [.035;.040]	.08	1.35

Notes: N=369. M1= all 30 items, three dimensions model; M2= all 30 items, three dimensions and considering the diferent raters; M3= all 30 items, three dimensions with residual covariances between mothers, fathers and teachers related items. RWLS= Robust Weighted Least Squares; CFI=Robust Comparative Fit Index; TLI= Robust Tucker-Lewis-Index; RMSEA= Robust Root Mean Square of Approximation; SRMR= Standardized Root Mean Square Residual; WRMR= Weighted Root Mean Square Residual.

Measurement Invariance across Mother', Father' and Teacher' Reports

In the first CT-C(M-1) approach we used teachers as reference method since we were excepting major differences between them and parents' reports (see Geiser, Eid, & Nussbeck 2008; Geiser, Eid, West, Lischetzke & Nussbeck, 2012 for guidelines). We used the final model (M8) but it didn't converge, three items couldn't be obtained and were excluded (AA, item 3, item 4 and item 5). Model robust fit indices were CFI =.91, TLI = .89; RMSEA = .042 [.040; .045], SRMS = .063, WRMR = 1.18). The results showed low trait loadings (< .40, except for item 16, from AA) and the comparatively high (> .60) method factor loadings give us a first hint that parent's ratings (non-reference methods) are only in weak agreement with the teacher ratings (reference method). These interpretations are confirmed by the low reliabilities (SC, between .28 and .52 for mother and .29 to .48 for fathers; AA between .28 and .59 for mothers and .29 to .55 for fathers; AW between .35 and .64 for mothers and .29 to .57 for fathers) and because method-specific coefficients were higher than the consistency coefficients for all items.

Associations between different indicators within a specific trait were also analyze. For SC, all but two were higher than .40, range between .29 and .86 (*M* = .59, *SD* =.13), item 26 presented the lowest relations (r = .29 with item 15 and r = .36 with item 22, we might consider removing item 26 since it presents the lowest correlations (none higher than .50); for AA the association range between .56 to 1.01 (*M* = .75, *SD* = .13); finally, for AW range between .42 and 1.00 (*M* =.81, *SD* =.24). We could remove Item 9 that seems to be overlapping with Item 7, Item 12 and with Item 14. The absolute values of the associations between indicator-specific of different traits were mostly low (*M* = .26, *SD* = .17), reflecting good discriminant validity (except for the associations between SC item 17 with AW item 9 and with AW item 14; AA item 10 with SC item 20 and SC item 22; and AA item 28 with SC item 24 and with SC item 27).

We found high associations (.71 to .82) between the method factors (parents) belonging to the same trait, showing that parents share a common view of the child behavior that is not shared with teachers. Method effect goes in the same direction for both parents (positive correlations of method factors), that is when mothers over or underestimated child behavior (comparing to what teacher description) fathers do the same. The absolute values of the correlations between method factors belonging to the same method but different traits are mostly low (all <.20) for both mother and father except when relating AW with AA (.36 for fathers and .50 for mothers) these traits could be method biases, mothers and fathers who overestimate a child's AW also tend to overestimate child AA.

In MTMM analysis 2 we used mother as reference method. The robust fit indices were good (and slightly higher than the ones in MTMM analysis 1): CFI = .95, TLI = .93, RMSEA = .033 [.030; .036], SRMS = .057, WRMR = .95. As in the previous analysis, trait loadings within a teacher trait factor were weak (all lower than .40, except for item 16) comparative to method factor loadings (all higher than .60). However, when we look to fathers all trait loadings above .52 except for item 28 and method factor presented lowest values. In this instance, the indicators had larger consistency than method specificity coefficients, meaning that (as in MTMM analysis 1) there is good support for mother' father' agreement, fathers, but not for mothers and teacher.

The associations between items within SC, range between .06 and .74 (*M* = .45, *SD* = .14), being the lowest relationship between item 15 and item 26, we might consider removing item 26 since it presents the lowest correlations; for AW the associations range between .29 and

.70 (*M* = .50, *SD* = .11) being the worst relation between item 12 and item 23 finally, for AA the association range between .35 to .72 (*M* = .49, *SD* = .10). The absolute values of the associations between indicator-specific trait variables of different traits were all but one lower than .40 (range between .00 and .47 (*M* = .13, *SD* =.10, the worst result was r = -.47 between item 20 and item 25) reflecting high discriminant validity. Finally, there was no significant association between the method factors belonging to the same trait, showing that father and teacher do not share a common view of the child behavior besides the one shared in the mother. The absolute values of the associations between method factors belonging to the same method but different traits were significant for teachers' ratings (.18 to .51), for fathers only the relation between AW and AA was significant (.58), these traits could be method biases. For teachers, the method factor of AW and AA are positively correlated (but low), whereas the correlation between SC and these two affective traits are negative. Fathers who under or overestimate child's AW also tend to do it for child AA. Teachers who overestimate a child's AW or AA tend to underestimate the SC.

Finally, for MTMM analysis 3 with father as reference model. The robust fit indices were also good CFI = .94, TLI = .93, RMSEA = .034 [.031; .037], SRMS = .057, WRMR= .96. As in the previous analysis, teacher's trait loadings within a rater factor were weak (all < .40) although strong (all > .60) when considering method factor loadings. Again, when we compare with the other parent (in this case the mother) most of trait loadings were near .60, the indicators had a larger consistency coefficient than method specificity coefficient (except for SC item 30, AW item 9 and item 14; and AA item 16) meaning that there is good support for convergent validity between parents, but not for fathers and teachers.

For SC, associations between different indicators within a specific trait, range between .07 and .82 (*M* = .45, *SD* = .15) as previous analysis, the lowest relationship was between item 15 and item 26, again we might consider removing item 26 since it presents the lowest correlations; for AW the associations range between .31 and .65 (*M* =.50, *SD* = .10) (as in analysis 2, the worst result was the relation between item 12 and item 23); finally, for AA the association range between .36 to .72 (*M* = .48, *SD* = .10). The absolute values of the associations between indicator-specific trait variables of different traits were all but one was lower than .40 (range between .00 and .43 (*M* = .13, *SD* = .09), the worst result was the negative relation between item 21 and item 28) reflecting high discriminant validity.

We found that mother and teacher share a common view of the child that is not shared with the father, specifically a positive and significant association (although low) for SC (.18) and for AA (.26), when mothers over or underestimated child behavior (comparing to fathers' description) teachers do the same.

The absolute values of the associations between method factors belonging to the same method but different traits are significant for teachers' ratings (.13 to .53), for mothers only the relation between AW and AA were significant (.69), these traits could be method biases, teachers and mothers who overestimate a child's AW also tend to overestimate child AA. For teachers, the correlation between SC and those two affective traits were negative, meaning that teachers who overestimate a child's AW or AA tend to underestimate the SC.

Measurement Invariance between boys and girls

To test for measurement invariance across child's sex, we used the 22 items version (Model 8 minus the three items excluded on previous analysis) and performed a multiple-group confirmatory factor analysis (MG-CFA) for each rater separately, since previous analyses showed that parents and teacher evaluate child differently. There were same cross table zeros therefore we collapse few items' categories (Higgins, 2004).

For teacher, we collapse category 6 into category 5 for item 12 (AW, zero for girls and boys had 1), item 23 (AW, 2 for girls and boys had zero), item 28 (AA, 1 for girls and boys had zero), category 5 into category 4 for item 14 (AW, zero for girls and boys had 3), and category 2 into category 3 for item 30 (SC, zero for girls and boys had 7). Since MG-CFA results were below the cut point (ΔCFI = .001; RMSEA = -.001), metric invariance was achieved. Similarly, results also suggested scalar invariance (ΔCFI = -.001; ΔRMSEA = .008), suggesting that differences between those two groups (boys and girls) reflects differences in the underlying latent trait rather than in the measure.

For mother, we collapse category 6 into category 5 for item 16 (AA, 1 for girls and boys had zero), item 18 (AA, 1 for girls and boys had zero), item 14 (AW, zero for girls and boys had 3) and category 2 into category 3 for item 30 (SC, 3 for girls and boys had zero). Since MG-CFA results were below the cut point (ΔCFI = .001; RMSEA = -.003), metric invariance was achieved. Similarly, results also suggested scalar invariance (ΔCFI = -.004; ΔRMSEA = -

.006), suggesting that differences between those two groups (boys and girls) reflects differences in the underlying latent trait rather than in the measure.

For father, we collapse category 6 into category 5 for item 9 (AW, zero for girls and boys had 1), item 18 (AA, zero for girls and boys had 2), category 5 into category 4 for item 14 (AW, zero for girls and boys had 1). Since the results were below the cut point (ΔCFI = -.005; RMSEA = .003), metric invariance was achieved. Similarly, results also suggested scalar invariance (ΔCFI = .001; ΔRMSEA = .005), suggesting that differences between those two groups (boys and girls) reflects differences in the underlying latent trait rather than in the measure.

Social Competence, Anger-Aggression, Anxiety-Withdrawal: associations within and between raters

Using the final model (22 items version), we analyze SCBE associations within and between raters, although results must be analyzed carefully since CT-C(M-1) models indicates low agreement between teachers' and parents' rates. When measurement invariance does not hold means cannot reasonably be compared (van de Schoot, Lugtig, & Hox, 2012).

For parents, we found a positive and significant relation between AA and AW (r = .33; ρ < .001 for mothers and r = .30; ρ < .001 for fathers) for teachers this relation was negative (r= -.14; ρ < .01). The associations between AA and SC was negative and significant for all raters (r = -.11; ρ < .05 for mothers and r = -.17; ρ < .001 for fathers and r= -.46 ρ< .001 for teachers). AW and SC were negative and significantly associated but only for teachers (r = -.24; ρ < .001). Knowing that the results should be analyzed carefully, we also examined the correlations between raters, there was a significant and positive association between all raters for SC (range between .20 to .61) and AW (range between .12 to .49) specially between parents. For AA, we found positive associations between parents (r = .47; ρ < .001) and between mother and teachers (r = .19; ρ < .001). Both parents described children as more competent but also as more maladapted then teachers do, and fathers perceived child behavior as more anxious than mothers do (differences presented a small to medium magnitude).

Social Competence, Anger-Aggression, Anxiety-Withdrawal: sex differences

We found some differences between boys and girls on SC and AA ratings. Girls (more than boys) were described as more social competent by their fathers ($F(1,367) = 3.97$, $p < .05$, $d = .21$; girls $M = 4.16$; $SD = .81$ and boys $M = 3.99$; $SD = .81$) and teachers ($F(1,367) = 17.66$, $p < .001$, $d = .21$; girls $M = 4.07$; $SD = .93$ and boys $M = 3.65$; $SD = .99$), while boys were described as more aggressive by their mothers ($F(1,367) = 6.55$, $p < .05$, $d = .27$; girls $M = 2.01$; $SD = .66$ and boys $M = 2.19$; $SD = .68$) and teachers ($Fw(1,367) = 10.82$, $p < .001$, $d = .34$; girls $M = 1.57$; $SD = .70$ and boys $M = 1.84$; $SD = .88$).

Social Competence, Anger-Aggression, Anxiety-Withdrawal: age differences

For mother, we found some differences for SC ($F(3,365) = 5.62$, $p < .001$), age 3 presented the lowest values, increasing with age. Pos-hoc analyses showed that age 3 presented significantly lower SC values than age 4 or 5, and the same happened between age 4 and 6; there were also some differences concerning AA ($F(3,365) = 4.05$, $p < .01$), age 3 presented the highest values, decreasing with age. The pos-hoc analyses identify that at age 3 children are significantly describe as more aggressive than with age 4 or 6. For father, no age differences were found. For teacher, we found differences for SC ($Fw(3,365) = 12.74$, $p < .001$), SC values seems to increase with age. The pos-hoc analyses presented differences between age 3 with age 4, 5 and 6, between age 4 and 6, and between age 5and 6; for AW, there were also some differences regarding age for teachers reports ($Fw(3,365) = 8.49$, $p < .001$), being the 6 age children describe as the less anxious. The pos-hoc analyses identify that at age 3 children are more anxious than at age 6, and at age 4 they are describe as more anxious than with age 5 or 6; for AA we also found some differences ($Fw(3,365) = 5.44$, $p < .001$) with 6 age children being described by their mothers and teachers as the less aggressive ones. The pos-hoc analyses identify that, for mothers, 4 age children were describe as less aggressive than age 3 but more than at age 6, the same happens for teachers (see table 3).

Table 3. Age differences considering SC, AW and AA dimensions

	Mother						Father						Teacher					
	SC		AA		AW		SC		AA		AW		SC		AA		AW	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
3	3.85	.80	2.30	.65	1.78	.56	3.93	.79	2.08	.68	1.74	.60	3.39	1.17	2.00	.90	1.78	.91
4	3.96	.88	2.02	.55	1.75	.57	3.95	.80	2.09	.62	1.93	.66	3.86	1.08	1.66	.89	1.88	.94
5	4.18	.81	2.13	.78	1.88	.83	4.14	.79	2.00	.65	1.94	.65	3.88	.88	1.70	.75	1.55	.55
6	4.34	.84	1.94	.60	1.68	.59	4.23	.85	1.98	.55	1.89	.61	4.28	.62	1.48	.63	1.42	.32

*Note: *p< .05; **p< .01; ***p< .001; d= Cohen's d;SC= Social Competence, AW= Anxiety-Withdrawal, AA=Anger-Angressive*

Finally, to evaluate sex and age impact we performed a three multivariate analysis, one for each rater. We found sex impacts, with girls being described as less aggressive than boys by mothers (β = -.17, ρ < .001) and as more social competent by fathers (β = .17, ρ < .05). For teachers, sex impacts on both SC (β = .42, ρ < .001) and AA (β = -.28, ρ < .001) with girls being described as more competent and less aggressive than boys. When exploring age impact, mothers described older children as more competent (β = .17, ρ < .001) and less aggressive (β = -.09, ρ < .05). For fathers, also described older children as more SC (β= .11, ρ< .01). Finally, teachers described older children as more competent (β = .26, ρ < .001), less anxious (β = -.15, ρ < .001) and less aggressive (β = -.14, ρ < .001).

Discussion

SCBE-30 applicability and validity has been demonstrated in several cultural contexts (e.g. Bárrig & Parco, 2017; Diener & Kim, 2004; Dumas et al., 2011; Klyce et al., 2011; LaFreniere et al., 2002; Sette et al.,2014; Vasquez-Echeverria et al., 2016). Nonetheless, most of studies used only teachers' or only mothers' report to describe children's behaviors, diminishing fathers' perspective. It's important to gather data from multiple informants, in different contexts, to explore discrepancies and similarities between them (Achenbach, Krukowski, Dumenci, & Ivanova, 2005; Reyes & Kazdin, 2005).

The three-factor structure of the SCBE was analyzed taking the three raters simultaneously, considering the dependency of the observations and the ordinal nature of the data. Factor structure remained the same, though some items had to be excluded for fit improvement (we dropped items 8, 6, 13, 1 and 2). Regarding measurement invariance between mother, father and teacher, all the analysis (using the different reference methods) showed a strong agreement between mother and father, and only a weak agreement when comparing parents with teacher' ratings. Although identical concerning the factor structure, parents' and teachers' ratings seems to be independent. A previous study by Klyce et al. (2011), analyzed teachers and parents' (although 92.8% were mothers) reports found the same results, but used a principal component analyses for each rater separately. They pointed that teachers might be more concerned with externalizing behavior in the classroom, since this type of behavior can be highly disruptive in the classroom, whereas parents could have more opportunities to notice when children cope positively when faced with affective/emotional challenges at home (Klyce et al., 2011). Parents and teachers might have different knowledge, concerns and expectations about the child's behaviors, or children could behave differently at home, school and other

settings. Most of the research conceptualized inter-rater reliability from a unitary perspective by focusing primarily on the consistency of two ratings, calculating correlation coefficients. Our study presents methodological improvements. First, child behavior was described not only by their teacher, but also by their both parents, including father's perspective; secondly, we used a CFA-MTMM statistic model that allow us to compare and contrast the raters, making possible to better understand the extent to which discrepancies between the raters may have meaningful predictive value. There may be specific child behaviors within each general pattern of SC, AW, or AA that are most associated with discrepant ratings. When performing CT-C(M-1) model, we found that parents share a common view of the child behavior that is not shared with teachers, this was true for all dimensions. Gathering information from multiple sources is crucial when conducting ecological and comprehensive assessments (Neisworth & Bagnato, 2005, Verhulst, Koot, & Van der Ende, 1994), and that different raters often represent different findings. A meta-analysis as showed that status informants (such as parents and teachers) might lead to discrepant ratings of behavioral and emotional functioning. Similar informants (e.g., mother and fathers; teachers and assistants) showed significant high correlations regarding ratings of behavioral/emotional problems, whereas ratings from different types of informants (e.g., parents, teachers, and independently trained observers) were less correlated (Achenbach et al., 1987). Different opportunities and experience when observing the child's behavior might lead to those differences, with parents observing qualitatively different behaviors, having greater familiarity with their children's pattern of verbal and nonverbal cues in multiple contexts (Diamond & Squires, 1993; Kaufman, Swan, & Wood, 1980). Conversely, teachers might have only one context but have multiple children to compare with, and more academic knowledge on child development. The fact that parents rated only one child while each teacher had to rate all participants in the classroom might also contribute to the lack of agreement by adding additional bias factor as fatigue, response bias, or contrast effects.

Our results also showed that, although in a lower magnitude, mother and teacher share a common view of the child that is not shared with the father in SC and AA. And that father and teacher do not share a common view of the child behavior besides the one that is shared with mother. That is, parents showed a strong agreement with each other, and mothers seems to be in more agreement with teacher that fathers do. We know that typically fathers invest less time and effort in childcare when comparing to mothers (Torres et al., 2014) and that children spend large time in school, that is fathers might not have the same opportunities to observe the behaviors described in particular items on the scale and this could contribute to mother-teacher

convergence. Also, it could be related to individual differences in adults' tolerance for various behaviors (Kaufman et al., 1980; Youngstrom, Loeber, & Stouthamer-Loeber, 2000), they might differ in the extent to which they perceive the occurrence or severity of the behaviors. Another possible contribute to this convergence could be related with gender since all teacher were women.

It is noteworthy that mother and teacher converge in SC and AA scales. Some studies have showed that the reliability coefficients are generally more consistent when informants are rating externalizing rather than internalizing behaviors (Hinshaw, Han, Erhardt, & Huber, 1992; Nickerson & Nagle, 2001), and when considering positive rather than negative behaviors (Walker & Bracken, 1996). A previous study using parent rating, teacher rating, and observational data, found that the correspondence between adult ratings and independent observations regarding problem behavior in preschoolers varied as a function of the type of problem (internalizing vs. externalizing) that was evaluated (Hinshaw et al., 1992). Specifically, only parents' ratings of internalizing tendencies predicted observed isolation and withdrawal, however teacher ratings of externalizing behavior were negatively correlated with observed internalizing tendencies. On the other hand, only teachers' ratings of externalizing activities predicted observed disobedient and aggressive actions. The study also pointed that it could be difficult for adults (either as raters or as observers) to evaluate the internalizing symptoms of young children (Hinshaw et al., 1992).

As expected in a non-clinical sample ours, children were described as displaying more adaptive and less maladaptive behaviors. When analyzing the associations between SCBE-30 dimensions, we saw that parents might find it hard to identify/distinguish AA and AW behaviors, associating higher level AA exhibition with higher level of AW behaviors. Parents also reported that children who exbibit more SC behaviors tend to show less AA behaviors. Teachers seem to be able to distinguish between AA and AW behaviors, describing children with higher SC scores as the ones who also presented less AW and AA behaviors. Compared to parents, teachers observe each child in different school setting and activities, being able to compare them to other children the same age, so this could help them to distinguish children that (although in a familiar context) display more AW behaviors.

Concerning child's sex, our results suggest that differences between boys and girls are not due to measurement variance. Girls (more than boys) were described as more social competent by their fathers and teachers, while boys (more than girls) were described as more

aggressive by their mothers and teachers. There was no difference in the AW subscale. These results are consistent with the literature (Diener & Kim, 2004; LaFreniere & Dumas, 1996; LaFreniere et al., 2002; Torres et al., 2014; Vasquez-Echeverria et al., 2016). In the classroom, teachers more often report closer, less conflictual relationships with girls than boys (Birch & Ladd, 1998; Grigs, Gagnon, Huelsman, Kidder-Ashley, & Ballard, 2009). Additionally, girls tend to display more socially competent behaviors than do boys (Birch & Ladd, 1998; Coolahan, Fantuzzo, Mendez, & McDermott 2000).

Regarding age differences, the literature shows that social skills tend to improve with age (as new socio, emotional and cognitive tools emerge and develop), and that the importance given to them also change with age (Rose-Krasnor, 1997; Rubin, Bukowski, & Parker, 2006). So, it is not surprising that SC values increases as children get older (LaFreniere et al., 2002, Vasquez-Echeverria et al., 2016), however in our study this was only true for mother' and teacher's ratings. For AW, we found some age differences on teachers reports, with younger children being reported as more anxious. For AA, both mother and teacher described younger children as more aggressive. Butovskya and colleagues (2002) pointed that the highest levels of AW and AA found at three years age could be related with stress separation from parents and with the adjustment to new social environment.

Future research should explore in more detail the discrepancy between parents and teacher in order to identify specific behaviors or contexts that intervention is more like to benefit for.

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Chapter III

Preschoolers' Secure Base Script Representations Predict Teachers' Ratings of Social Competence and Externalizing Behavior

Abstract

Recent meta-analyses reported significant effects of attachment quality on social competence, mostly using observational assessments of attachment security. We analyze the associations between attachment security - assessed as a secure base script, and social competence with peers - measured by teachers' ratings on two self-report instruments, in a Portuguese sample of 82 preschool children (34 boys and 48 girls). We also tested the association of secure base script scores with children behavior problems, specifically externalizing and internalizing symptomatology. Results show significant sex differences. Girls had higher scores on secure base script and were rated by teachers as more socially competent, while boys received higher ratings for aggressive/externalizing behaviors. Nonetheless, even when we control for child sex effect, attachment representations seem to have a positive impact on child social competence, and it is negatively related with expression of externalizing behaviors.

Key words: Secure base script; social competence; externalizing behavior

Introdution

Experiences in attachment relationships affect children's understanding of others' actions and serve as a guide for their own behavior, modulating the quality of interpersonal relationships through life (e.g., Bowlby, 1973; 1982; Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Park & Waters, 1989; Rose-Krasnor, Rubin, Booth, & Coplan, 1996; Waters & Sroufe, 1983). It is within the early child-parent attachment relationship that children develop interaction skills and a sense of self-worth that are foundational for success in later relationships. The interaction history with attachment figure(s) influences internal (mental) working models of attachment, the self, and the self in relation to others. These models are thought to mediate the relations between early attachment security and later social relationships. Thus, attachment representations contribute to social adjustment, more broadly construed (Bowlby, 1973, 1982; Bretherton & Munholland, 2008).

Differences in the quality of early attachment relationships are particularly relevant for peer relationships, both for promoting positive interactions and for minimizing problem behaviors (e.g., internalizing or externalizing behaviors; see Fearon, Bakermans-Kranenburg, IJzendoorn, Lapsley, & Roisman, 2010; Groh, Roisman, IJzendoorn, Bakermans-Kranenburg & Fearon, 2012; Sroufe, Egeland, & Kreutzer, 1990). Attachment relationships guide children's behavior in new situations, relationships, and organize their understandings about the world. As they grow older, language development and cognitive abilities allow more elaborated, stable, symbolic and hierarchically organized representations (Bretherton & Munholland, 2008). These mental representations guide and structure children's strategies (both adaptive and maladaptive) for coping with stress, seeking social support, and interpreting internal cues that can, in turn, influence their selection of playmates, their behavior in interaction with others, and their interpretations of those transactions (LaFreniere & Sroufe, 1985; Sroufe et al., 1990). In that sense, children with differing internal working models will interpret social and emotional contexts differently, with secure children (on average) seeing social relationships as rewarding, feeling capable for handling the demands of social relationships, and having skills for successful interpersonal interaction, including effective emotion regulation. Children with a history of secure attachment have been described as more positive in their interactions with peers, more empathic, more cooperative, and tend to be rated by teachers as having higher levels of social skills and fewer maladaptive behaviors (Denham & Burton, 2003). In contrast, children with a history of insecure attachment are more likely to attribute hostile intent in ambiguous social

situations, are less able to interact with others successfully, and exhibit more maladaptive behaviors (Denham, Blair, Schmidt, & DeMulder, 2002; Sroufe, Egeland, & Carlson, 1999).

Several meta-analyses (e.g. Fearon et al., 2010; Groh et al., 2014, 2012; Pallini, Baiocco, Schneider, & Atkinson, 2014; Schneider, Atkinson, & Tardif, 2001) revealed a significant effect of early attachment quality on social competence (SC) and socioemotional development. This association was stronger for SC and externalizing problems than for internalizing problems (Groh et al., 2014), particularly so in middle childhood and adolescence, and less so in early childhood. Insecure children (independent of the type of insecurity) tended to be seen by adults as less socially competent than children with secure attachment histories (Groh et al., 2014). Finally, although girls, in most samples, are likely to be perceived by adults as more socially competent than boys (Cohn, 1990; Fearon et al., 2010; LaFreniere et al., 2002; Turner, 1991), the effects of attachment security were not modified by sex of child (see Groh et al., 2014; Schneider et al., 2001).

Although the relation between attachment security and SC has been established and appears to be robust, most studies testing this relation (or between attachment security and behavioral problems) used behavioral assessments of attachment behavior organization such as the Strange Situation Procedure, SSP, or the Attachment Behavior Q-sort, AQS. Only a few studies have used mental representations of attachment security (e.g. Fernandes, 2015; Veríssimo, Santos, Fernandes, Shin, & Vaughn, 2014). Results of these studies also supported the hypothesis that attachment security is a foundational support for peer SC, suggesting that attachment representations may mediate the relation between early attachment security and peer SC.

The primary goal of the present paper was to determine the generality of associations between the secure base script score and social competence (e.g. as reported by Posada et al., 2019) in a southern European sample (Portuguese). Given the results of meta-analyses testing relations between attachment security and problem behaviors (Fearon et al., 2010; Groh et al., 2012), we were also interested in testing relations between the secure base script score and teachers' ratings on externalizing and internalizing behaviors as well as peer SC.

Method

Participants

Participants were 82 preschool children (34 boys, 48 girls) and their teachers (N = 4). Nearly half of the children (51%) were firstborn and 77% had siblings. Children's age ranged from 51 to 76 months (M = 62.60; SD = 6.84). The children attended two private daycare preschools in the suburbs of Lisbon, Portugal. All teachers had a University Degree in Childhood Education. All participating children were European and both parents lived in the household. Mothers' ages ranged from 31 to 47 years (M = 37.71; SD = 3.25) and fathers' ages ranged from 32 to 53 years (M = 39.95; SD = 4.81). Mothers' education level varied between 7 and 23 years of education (M = 15.84; SD = 2.67) and fathers between 4 and 19 years (M = 15.43; SD = 2.97). All families were "middle class" by the standards of the local community.

Procedures

Participating children were assessed using the Attachment Story Completion Task (ASCT, Bretherton, Ridgeway, & Cassidy, 1990) at their child-care facility between January and March. The verbal section of the Wechsler Preschool and Primary Scale of Intelligence – (WPPSI-R, 1989; Portuguese version of Seabra-Santos et al., 2003) was also collected individually in the same period. Between March and April, teachers filled some questionnaires to assess children's SC and behavioral problems, specifically the Portuguese version of Social Competence and Behavior Evaluation-30 (SBCE-30, LaFreniere & Dumas, 1996) and the Penn Interactive Peer Play Scale (PIPPS, Fantuzzo et al., 1995 translation by Torres, Freitas, Monteiro, Antunes, & Santos, 2014).

Measures

Attachment Story Completion Task (ASCT).

The ASCT (Bretherton et al., 1990) was used to elicit children's attachment narratives. A series of story-stems was presented to the child to elicit narratives regarding attachment behaviors directed to caregivers (as well as caregiver's responses), as described in Vaughn, Veríssimo, et al. (this issue). The assessments took place in a quiet area outside the classroom. The interviewer invited the child to play the story completion game together. The interviewer opened each story using a standard story stem and then asked the child to freely continue and

finish the story, illustrating behaviors, emotions and interactions between characters (e.g. “tell me and show me what happens next.”). Several non-directive questions were used to facilitate the child’s narrative production such as “Does anything else happen in the story?” or “What are they doing?”, and to clarify the child’s meaning for a statement (e.g. Child: “He chased the monster.” without providing further indication of the “chaser’s” identity. Interviewer: “Who chased the monster?”). Following the birthday party story, five attachment-related story-stems were presented. These story-stems were adapted from Bretherton’s original set and only three of them overlapped (i.e. Separation, Reunion, Monster in the Bedroom). We used the three overlapping stories to evaluate secure base script (SBS) content. Following the coding protocol described in Vaughn et al. (2019), coders gave a single score that considered secure base script content across all three stories simultaneously using a 7-point scale. All narratives were scored by two independent coders, previously trained and blind to any other information about the child (including prior scoring of these cases using the Bretherton et al. (1990) scales). Inter-observer reliability was assessed using intra-class correlations and ranged between .78 to .82 across observer pairs.

Social Competence.

Child SC was assessed from teachers’ reports on the Social Competence and Behavior Evaluation-30 (SCBE-30; LaFreniere & Dumas, 1996) and on the Penn Interpersonal Preschool Play Scales (PIPPS; Fantuzzo et al., 1995, Portuguese version by Torres et al., 2014). The SCBE Social Competence scale and the PIPPS Interactive-Play scales were used as indicators of SC. Cronbach’s alphas were .92 and .83 for the SCBE-30 and PIPPS scales respectively, and the correlation between the two scales was significant, $r = .76$; $p < .01$. The scales were averaged to create a SC composite. Because the two instruments use different scales, each was standardized prior to creating the composite scale. The SCBE-30’s Anger-Aggression ($\alpha = .87$) and PIPPS’ Disruptive-Play ($\alpha = .85$) were also significantly correlated, $r = .85$; $p < .01$. Again, we used a composite score (i.e. the average of the two standardized scores) as an indicator of aggressive/externalizing behavior. Finally, Anxiety-Withdrawal from the SCBE-30 ($\alpha = .87$) and the DisconnectedPlay scale from the PIPPS ($\alpha = .78$), were also significantly correlated, $r = .67$; $p < .01$. The average of the two standardized scores was used as the indicator of withdrawn/internalizing behavior.

Verbal Intelligence.

The verbal section of the Wechsler Preschool and Primary Scale of Intelligence – (WPPSI-R, 1989; Portuguese version of Seabra-Santos et al., 2003) was used to assess children's vocabulary and verbal comprehension. Children were tested individually in a quiet area outside their classroom.

Results

Our initial analyses explored the patterns of association among the study variables, especially with regard to the relation between the SBS scores and the teachers' ratings of child SC, aggressive/externalizing (EXT) and withdrawn/internalizing behaviors (INT). Child sex and verbal IQ (from the WPPSI) were included in these analyses as control variables. Because missing data were present for some participants, we computed Little's MCAR statistic and estimated the correlations using the EM (estimation maximization) algorithm, when the MCAR Statistic was not significant.

Table 1. Descriptive Values

	Global	
	M	***SD***
SBS	4.61	1.42
Verbal IQ	103.77	11.64
SC	.13	.74
EXT	-.11	.92
INT	-.05	.79

*Note: ** p<.01; ***p<.001; SC, Social Competence composite; EXT, Externalizing behavior composite; INT, Internalizing behavior composite*

As shown in Table 1, the mean value of the SBS score was 4.61 (*SD* = 1.42, indicating the "average" child had access to and used the secure base script when constructing stories in response to the ASCT story stems. The WPPSI Verbal IQ scores were in the average range (*M* = 103.77, *SD* = 11.64). With respect to teachers' reports on social behavior, children were described as relatively well adjusted (PIPPS Interactive Play *M* = 2.76, *SD* = .54; Disruptive Play *M* = 1.71, *SD* = .53; Disconnected-Play *M* = 1.47, *SD* = .38 and for SCBE-30 Social Competence *M* = 3.83, *SD* = 1.04; Anger-Aggression *M* = 2.21, *SD* = .88; Disconnected-Play *M* = 2.13, *SD* = .90).

Table 2. Descriptive Values comparing Boys and Girls

	Girls		Boys	
	M	***SD***	***M***	***SD***
SBS	5.11	1.26	3.91	1.35
Verbal IQ	104.52	11.92	102.71	11.33
SC	.42	.54	-.28	.78
EXT	-.34	.85	.22	.93
INT	-.08	.72	-.01	.89

*Note: ** p<.01; ***p<.001; SC, Social Competence composite; EXT, Externalizing behavior composite; INT, Internalizing behavior composite*

As shown in Table 2, analyses of the study variables by sex revealed significant differences (favoring girls) in the contrasts for SBS, t (80) = 4.14; $p < .001$. For teacher rated SC, because Levene's test for equality of variances was significant, F (1,80) = 4.55, $p < .01$, we ran a t-test assuming heterogeneous variances, t (80) = 4.55, $p < .001$). Results indicated that girls had significantly higher scores for SC than boys. In addition, boys had significantly higher scores for the EXT, t (80) = −2.84, $p < .01$ scored from teachers' ratings.

Table 3. Correlations between ASCT and Social Behavior Composite Scales

	SBS	**SC**	**EXT**
SC	.40***		
EXT	-.33**	-.29**	
INT	.05	-.54**	-.22*

*Note: * p<.05; ** p<.01, *** p<.001; SC, Social Competence composite; EXT, Externalizing behavior composite; INT, Internalizing behavior*

Our analyses (Table 3) show that the SBS score was positively and significantly associated with teachers' ratings of SC and that there was a negative correlation with EXT ratings. The correlation between the SBS score and INT was not significant. Finally, child sex and the WPPSI verbal intelligence were both significantly correlated with the SBS (r = .42, $p < .001$ and r = .22, $p < .05$, respectively). To test for possible influences of sex on the relation between SBS and both SC and EXT, partial correlations controlling for sex were calculated. The resulting partial correlations remained significant (pr = .25, $p < .05$, for the SBS x SC test and pr = −.23, $p < .05$ for the SBS x EXT test).

Table 4. Estimate Parameters β and Explain Variance for the two Hierarchical Regression Models of Child's Social Behavior.

		SC	EXT
Step 1			
	sex	-.48***	.30**
	R^2	22%	8%
Step 2			
	sex	-.37**	.20
	SBS	.24*	-.24*
	R^2	26%	12%

*p < .05; **p < .01; ***p < .001; SC, Social Competence composite; EXT, Externalizing behavior composite

Two linear regression analyses (Table 4) were computed using child sex and SBS score as predictors, one for SC and another for EXT. Consistent with previous analyses, child sex continued to predict teachers' ratings of SC, $\beta = -0.37$, $p < .001$, with girls being rated as more socially competent. Results also showed that the SBS score predicted teachers' ratings of SC, $\beta = 0.24$, $p < .05$. Children with higher level of SBS were reported as more socially competent. For EXT ratings, only SBS was a significant predictor, $\beta = -0.24$, $p < .04$, with higher levels of SBS being related with lower levels of EXT. The SBS score added about 4% to the overall R2 in both regressions, when entered after child sex.

Discussion

The primary goal of our study was to test the association between a recently described measure of children's mental representations of attachment (i.e. the SBS score derived from children's attachment relevant narratives) and teacher-rated SC and behavioral problems in a Southern European sample. These analyses reflect Bowlby's (e.g. 1973) and others suggestions to the effect that attachment security promotes positive adaptive functioning in new social contexts and protects against entering onto more deviant developmental trajectories associated with problem behaviors. Our results are generally consistent with previous research on these issues, that is, children with higher SBS scores were rated as more socially competent and as exhibiting fewer externalizing-aggressive behaviors than children with lower SBS scores. In that sense, attachment representations seem to exert a positive influence on children's social development.

Considering sex differences, as in some previous studies (e.g. Maia, Veríssimo, Ferreira, Silva, & Antunes, 2012; Posada et al., 2019), girls in this sample had higher scores for secure base script and were rated by their teachers as being more socially competent, while boys were rated higher for aggressive/externalizing behaviors (see Cairns & Cairns, 1984; Cummings, Iannotti, & Zahn-Waxler, 1989; DeKlyen & Greenberg, 2008; Loeber & Hay, 1997). Page and Bretherton (2001) reported that boys were more likely than girls to introduce aggressive themes in their ASCT narratives, when the story stem included a stressful event while girls were more likely to include prosocial or empathic themes in their narratives elicited by stressful themed story stems. Girls may also receive sex-differentiated socialization in the context of mother-child reminiscences that promotes prosocial and empathic responses to the ASCT story stems (e.g. Dunn, Bretherton, & Munn, 1987; Fivush, Haden, & Reese, 2006; Laible, Carlo, Torquati, & Ontai, 2004). However, even though girls may be somewhat advantaged in terms of their ability to tell a well-scripted secure base story, our results clearly indicate that having a history of well-organized secure base experience, as indexed by access and use of the secure base script in our assessment procedure, predicts child SC.

There is some evidence from meta-analyses suggesting sex differences in the relation between attachment security and problem behaviors (e.g. DeKlyen & Greenberg, 2008; Fearon et al., 2010). The relation between attachment and externalizing symptomatology seems to be stronger for boys than for girls, whereas the association between attachment and internalizing symptoms may be stronger for girls than for boys. However, in a more recent meta-analytic review (Groh et al., 2012), the effect of attachment insecurity on internalizing behaviors was not found to be significantly stronger for girls than for boys. Groh et al. (2014) concluded that early attachment is associated with children's social competence with peers. That is, more secure children are rated as more socially competent while insecure children (regardless of subtype) are rated as less socially competent. Moreover, and consistent with previous meta-analysis (Fearon et al., 2010; Groh et al., 2012), those predictive effects did not change significantly in magnitude as a function of the age at which social competence was assessed. There is a long history of studies linking attachment security to both externalizing and internalizing behavioral problems (e.g. Bowlby, 1973; Granot & Mayseless, 2001; McCartney, Owen, Booth, Clarke-Stewart, & Vandell, 2004; Seibert & Kerns, 2015 and see meta-analyses by; Fearon et al., 2010; Groh et al.,2012, 2014; Madigan, Atkinson, Laurin, & Benoit, 2013, for reviews relevant to externalizing behaviors and internalizing behaviors). In our study, the secure base script scores appear to have effects on children's strategies (both adaptive and

maladaptive) for coping with stress or interpreting social cues, at least as perceived by their teachers.

We recognize that there are limitations and constraints on the generality of our findings, for example, we only used teachers' self-reports. It will be useful in future studies to include observable, performance-based assessments of the children's social competence and reports from other knowledgeable adults (e.g. parents). In addition, children recruited for this study came from predominantly middle-class families who were attending private, non-profit early childhood education programs that were affiliated with elementary schools. Finally, all measures used in this study were obtained concurrently, during a single academic year. Longitudinal studies in which secure base script accessibility/use and social competence measures are assessed on multiple occasions, with the same and with different measures, will be important for disentangling the implications of early attachment security for social adjustment during early childhood.

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Chapter IV

Attachment representations and social competence: exploring teacher's ratings and observed social competence.

Abstract

Secure base script emerges from early attachment interactions history and impacts children social relations. We explore SBS relations with children's social competence by including, not only indirect teacher's ratings, but also direct observed measures, in a Portuguese sample of 77 preschool children (33 boys and 44 girls). Our results emphasize the importance of using a multiple informant approach. Sex differences were found, with girls presenting higher scores on secure base script and being rated by teachers as more socially competent, while observers described boys as more social engaged. Nonetheless, even when we control for child sex effect, attachment representations have a positive impact on child social competence.

Key words: Secure base script; social competence; social engagement; sex differences

Introdution

It's within early attachment relationships that children develop interaction skills, a sense of self-worth and trust that impacts later social relations (Bowlby, 1982; Bretherton & Munholland, 2008). In a secure relation, both infant and caregiver engage with each other, sharing attention, affects, touch and vocals, providing the basis for exploration, sharing, and meaning-making (Bowlby, 1982; Feldman, 2012; Waters & Sroufe, 1983). Attuned attachment interactions will promote greater child tolerance and self-modulation, whereas over stimulate, failed stimulate, or inconsistent interactions will result in wary and easily distress (e.g. poor exploration, overreaction, irritability) or in incapacity to engaged with surround (e.g. apathetic, and withdrawal) (Sroufe, 2002).

As children grow older, interactions history will be elaborated into mental representations, a secure base script (Posada & Waters, 2018; Vaughn, Posada, & Veríssimo, 2019b), that will guide children approach to a larger social world (i.e. relationship with peers and other adults). In that sense, secure base script promotes the transition from early attachment security toward social competence in later social relationships (Veríssimo, Santos, Fernandes, Shin & Vaughn, 2014; Posada et al, 2018; Waters & Sroufe, 1983), guiding children's strategies (both adaptive and maladaptive) for coping with stress, seeking social support, and interpreting internal cues which might influence their selection of playmates and their behavior in interaction with others (Sroufe, Egeland, & Kreutzer, 1990). Social competent children will be able to make use of available environmental and personal resources, adapting to new circumstances and achieving a developmental outcome (Water & Sroufe, 1983), and it´s in the preschool peer group that deficits on social engagement become more perceptive (Gazelle & Rubin, 2010; Rubin & Coplan, 2004; Rubin, Coplan, & Bowker, 2009).

Early attachment relationships contribute to children's adaptation in the preschool peer group, promoting positive engagement and social skills that underlie peer acceptance (Booth, Rose-Krasnor & Rubin, 1991; Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Veríssimo, et al., 2011; Veríssimo & Santos, 2008). In fact, the significant effects of attachment relationship on social competence and socioemotional development has been reported in several meta-analyses (e.g. Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010; Groh, etal., 2014; Pallini, Baiocco, Schneider & Atkinson, 2014). However, most of the reported studies used behavioral assessments of attachment security and peer-relationship qualities and/or social competence outcomes measured indirectly (i.e., questionnaire rated by

parents or teachers). And we know that indirect measures are more easily biased (e.g., we might find low agreement between multiple adult informants even when using the same set of items during the same developmental period) and that direct observations of moment-to-moment transactions provide more accurate estimates (Renk & Phares, 2004). Nevertheless, direct observations imply more resources and time, and only few studies (e.g., Veríssimo et al., 2014) linked attachment mental representations with direct assessments of children's social competence during early childhood.

In this study we used child attachment representations and linked with teacher reports on child social competent behavior (i.e. SCBE-30, LaFreniere & Dumas, 1996 and PIPPS, Fantuzzo et al, 1995), and also with directly observed social engagement, as an indicator of social competence for preschool children (see Santos, et al.,2019; Vaughn et al., 2016). Social engagement is driven from one of the three "families" indicators from the SC hierarchical model (e.g., Bost, et al., 1998; Santos, et al., 2015; Santos, Peceguina, Daniel, Shin, & Vaughn, 2013; Santos, Vaughn, Peceguina, & Daniel, 2014; Shin et al., 2011; Vaughn et al., 2009). Previous study (Vaughn et al., 2016) has positively associated social engagement with a range of social competence indicators, higher engaged children displaying a wide range of social skills and are more often preferred by their peers as playmates. Our aim was to explore the relationship between attachment and social competence in early childhood, specifically between child's secure base scripts with both teacher perception and observed child' social competence.

Method

Participants

Were 77 preschool children (33 boys, 44 girls) and their teachers (N= 4). Nearly half of the children (48%) were firstborn and 80% had siblings. Children's age ranged from 51 to 76 months (*M* = 62.44; *SD* = 7.09). The children attended two private daycare preschools in the suburbs of Lisbon, Portugal. All teachers had a University Degree in Childhood Education. All participating children were European, and both parents lived in the household. Mothers' ages ranged from 31 to 47 years (M = 37.73; SD = 3.33) and fathers' ages ranged from 32 to 53 years (M = 39.95; SD = 4.92). Mothers' education level varied between 9 and 23 years of education (M = 15.78; SD = 2.72) and fathers between 4 and 19 years (M = 15.35; SD = 3.02). All families were "middle class" by the standards of the local community, in terms of education

levels, occupational titles, and family incomes. Written consent for children's participation was obtained from school directors, teachers, and parents prior to data collection.

Procedures

Participating children were assessed individually using the Attachment Story Completion Task (ASCT, Bretherton, Ridgeway, & Cassidy, 1990) at their child-care facility between January and March. At the same period, we observed children in their classrooms using direct observations with peers and collected the verbal section of the Wechsler Preschool and Primary Scale of Intelligence – (WPPSI-R, 1989; Portuguese version of Seabra-Santos et al., 2003) individually. Teachers filled some questionnaires to assess children's social competence and behavioral problems, specifically the Portuguese version of Social Competence and Behavior Evaluation-30 (SBCE-30, LaFreniere & Dumas, 1996) and the Penn Interactive Peer Play Scale (PIPPS, Fantuzzo et al., 1995 translation by Torres, Freitas, Monteiro, Antunes, & Santos, 2014).

Instruments

Attachment Story Completion Task (ASCT)

The ASCT (Bretherton et al., 1990) was used to elicit children's attachment narratives. A series of story-stems was presented to the child to elicit narratives regarding attachment behaviors directed to caregivers (as well as caregiver's responses), as described in Vaughn, et al. (2019b). The interviewer invited the child to play the story completion game together, in a quiet area outside the classroom. Each story was opened by the interviewer, using a standard story stem and then the child was asked to freely continue and finish the story, illustrating behaviors, emotions and interactions between characters (e.g. "tell me and show me what happens next."). Several non-directive questions were used to facilitate the child's narrative production such as "Does anything else happen in the story?" or "What are they doing?", and to clarify the child's meaning for a statement (e.g. Child: "He chased the monster." without providing further indication of the "chaser's" identity. Interviewer: "Who chased the monster?"). Following the birthday party story, five attachment-related story-stems were presented. These story-stems were adapted from Bretherton's original set and only three of them overlapped (i.e. Separation, Reunion, Monster in the Bedroom). We used those three overlapping stories to evaluate secure base script (SBS) content. Following the coding protocol

described in Vaughn et al. (2019b), coders gave a single score that considered the presence and quality secure base script content across all three stories simultaneously using a 7-point scale, with 7 representing the higher level secure base script. All narratives were scored by two independent coders, previously trained and blind to any other information about the child (including prior scoring of these cases using the Bretherton et al. (1990) scales). Inter-observer reliability was assessed using intra-class correlations and ranged between .78 to .82 across observer pairs.

Verbal intelligence

The verbal section of the Wechsler Preschool and Primary Scale of Intelligence – (WPPSI-R, 1989; Portuguese version of Seabra-Santos et al., 2003) was used to assess children's vocabulary and verbal comprehension.

Social Engagement

Operationalized as the rate of interaction bids initiated to peers (affectively positive, negative or neutral) (see Vaughn et al., 2016). Teams of two observers collected interactions data in each classroom. Using the class list, observers watched a target child for a 15-s interval and coded for all children (or adults) with whom target interacted. All children present were watched for one 15-s interval before any child was watched twice. To adjust for absences during the observation period and for differences in the number of observational rounds across classrooms (range 100 rounds of observation), total initiated interaction scores were converted to rates by dividing the total score by the number of observation rounds for which the target child was present in the classroom. These rates were standardized within classroom prior to further analysis and used as social engagement indicators. Observers were trained in the observation system before beginning classroom observations. Rater agreement was estimated, alpha coefficients for total initiated interactions were consistently above .70 in all classrooms. Raters conducted separate joint observations and kappa coefficients were calculated. These ranged from .78 to 1.00 (median .87) across the several rater dyads.

Social Behavior

Teachers' reports on the Social Competence and Behavior Evaluation-30 (SCBE-30; LaFreniere & Dumas, 1996) and on the Penn Interpersonal Preschool Play Scales (PIPPS;

Fantuzzo et al., 1995, Portuguese version by Torres et al., 2014*)* were used as indicators of child social behavior. Cronbach's alphas were .92 for the SCBE-30 Social Adjusted and .83 for the PIPPS Interactive Play scale, and the correlation between the two scales was significant (r = .76; p < .01). The scales were averaged to create a Social Competence composite (SC), each scale was standardized prior to creating the composite. The SCBE-30's Anger-Aggression (α = .87) and PIPPS' Disruptive-Play (α = .85) were also significantly correlated, r = .85; p < .01. Again, we used a composite score (i.e. the average of the two standardized scores) as an indicator of aggressive/externalizing behavior (EXT). Finally, Anxiety-Withdrawal from the SCBE-30 (α = .87) and the Disconnected-Play scale from the PIPPS (α = .78), were also significantly correlated, r = .67; p < .01. The average of the two standardized scores was used as the indicator of withdrawn/internalizing behavior (INT).

Results

As we can see on table1, in general, children in our sample present medium/high score of secure base script when constructing stories in response to the ASCT stems (SBS, *M*= 4.58; *SD*= 1.43). The mean value was significantly above 4, $t(76) = 3.56$; p < .001, indicating the accessibility and use of the secure base script when constructing stories in response to the ASCT story stems. Analyses also showed sex differences with girls presenting higher values than boys (SBS, girls *M*= 5.09, *SD*= 1.27 and boys *M*= 3.90, *SD*= 1.37, $t(1,75)= 3.91$, $p<.001$). The WPPSI verbal IQ scores were in the average range (*M*= 103.68, *SD*= 11.73), no sex differences were found. As expected, children in our sample were described by their teachers as relatively well adjusted, presenting more Social Adjusted (*M*= 3.82; *SD*= 1.01) and less Anger-Aggressive (*M*= 2.04; *SD*= .82) and less Anxious-Withdrawal (*M*= 2.23; *SD*= .96) behaviors; also, more Interactive Play (*M*= 2.70; *SD*= .50) and less Disruptive (*M*= 1.73; *SD*= .52) and Disconnected Play (*M*= 1.49; *SD*= .36). In the following analysis we used the composite values for teachers reports on social behavior.

There were some sex differences, with boys being seen as more social engaged (SE, girls *M*= .03, *SD*= .52 and boys *M*= .23, *SD*= .60, $t(1,75)= -2.07$, $p<.05$), and teachers describing girl as expressing more SC (girls *M*= .39, *SD*= .67 and boys *M*= -.23, *SD*= .74, $t(1,75)= 3.85$, $p<.001$) (see table 1).

Table 1. Descriptive values comparing boys and girls

	Total				Girls				Boys				
	Min	**Max**	**M**	**SD**	**Min**	**Max**	**M**	**SD**	**Min**	**Max**	**M**	**SD**	***t***
SBS	2.00	7.00	4.58	1.43	2.50	7.00	5.09	1.27	2.00	6.50	3.90	1.37	3.91***
Verbal IQ	82.00	125.00	103.68	11.73	84.00	125.00	104.07	12.22	82.00	124.00	103.15	11.20	*ns*
SE	-1.31	1.46	.08	.57	-.95	1.33	-.03	.52	-1.31	1.46	.23	.60	-2.07*
SC	-1.73	1.95	.12	.76	-1.06	1.95	.39	.67	-1.73	1.26	-.23	.74	3.85***
EXT	-1.48	2.01	-.10	.89	-1.41	2.01	-.26	.86	-1.48	1.51	.11	.90	ns
INT	-1.39	1.89	-.05	.76	-1.39	1.89	-.02	.77	-1.16	1.62	-.09	.75	*ns*

*Note: *p<.05; **p<.01; ***p<.001; SBS= Secure base script; SE = Social Engagement; SC= Social Competence composite; EXT= Externalizing behavior composite; INT= Internalizing behavior composite*

Considering the possible sex influence in the relation between variables we performed a partial correlation controlling for sex. As we can see in table 2, children that presented higher SBS scores were described by the observes as more social engaged (pr= .30, p< .01), and also described by the teachers as more social competent (pr= .27, p< .05). Teachers described children with higher verbal IQ as more social competent (pr= .23, p< .05). When comparing the observed social engagement with teachers' reports, children described by the observers as more social engaged were also described by their teachers as exhibiting more social competent behavior (pr= .36, p< .05) and less internalizing behaviors (pr = -.38, p< .001).

Table 2. Partial correlations between attachment, social engagement and social behavior composite, with sex as control variable

	Verbal IQ	SE	SC	EXT	INT
SBS	.20	**.30****	**.27***	-.22	-.05
Verbal IQ		.18	**.23***	-.09	-.18
SE			**.36***	.06	**-.38*****
SC				**-.31****	**-.57*****
EXT					-.09

*Note: *p<.05; **p<.01; ***p<.001; SBS= Secure base script; SE = Social Engagement; SC= Social Competence composite; EXT= Externalizing behavior composite; INT= Internalizing behavior composite*

Hierarchical regressions were computed (Table 3) using child sex and SBS score as predictors. Results showed that SE and teachers' ratings on SC were predict by child sex and also by SBS score, with girls being described as less social engage (β= .36, p<.01) and being rated by their teacher as more social competent (β= -.30, p<.01) and higher SBS predicting higher social engagement (β= .32, p<.01) and higher teacher ratings on SC (β= .27, p<.05). The SBS score added about 8% (p<.01) to the overall R^2 in SE regressions, and about 6% (p<.05) in SC regressions when entered after child sex.

Table 3. Estimate paremeters β and explained variance for hierarchical regression models of child's social behavior.

		SE	SC	EXT	INT
Step 1					
	Sex	.23*	-.41***	.21	-.05
	R^2	4%	15%	3%	0%
Step 2					
	Sex	.36**	-.30**	.11	-.07
	SBS	.32**	.27*	-.23	-.05
	R^2	11%	21%	6%	0%

*Note: *p<.05; **p<.01; ***p<.001; SBS= Secure Base Script; SE = Social Engagement; SC= Social Competence Composite; INT= Internalizing Behavior Composite; Ext= Externalizing Behavior Composite*

Discussion

The main goal was exploring SBS relations with children's social competence, including not only teacher's ratings on the social competence composite measure but adding direct observations of social engagement as an indicator of social competence (see Santos, et al.,2019; Vaughn et al., 2016).

Waters and Sroufe (1983) argued that child's success on the first critical developmental task (i.e., co-construction of a secure attachment relationship) would promote child's success in the following critical developmental task (i.e., integrated and co-constructing good quality relationships within peer groups). In fact, previous studies have shown small to moderate effect of children's attachment on SC during early childhood, including three meta-analyses (Groh et al., 2014; Pallini et al., 2014; Schneider, Atkinson, & Tardif, 2001). However, social competence outcomes are most often measured indirectly (i.e., by questionnaire items rated by parents or teachers), which allows faster data collection but are also associated to higher bias (Renk & Phares, 2004). Direct observation of the child and their peers in the "moment-by-moment" transactions provide more accurate estimates social behaviors than teachers ratings (Vaughn et al., 2009).

Our results are consistent with recently findings (Vaughn, et al, 2019a) and support the hypothesis of attachment security (i.e.SBS) as a foundational promotor of peer social competence and related social/cognitive skills. Specifically, with SBS predicting teacher's ratings of children's social competence (e.g. Posada, et al., 2019) and the direct observed social behavior (e.g. Nichols, Vaughn, Lu, Krzysik & El-Sheikh, 2019; Verissimo et al., 2014).

Results also showed that although teachers rated girls as more social competent (more than boys), they were reported by observers as less social engaged. This is consistent with previous meta-analysis (Fabes & Eisenberg, 1998) considering sex differences in children's prosocial behavior. Sex difference (favoring girls) was greatest when prosocial behavior was reported but not when the measure was unobtrusive observations, suggesting that verbal reports of prosocial behavior reflect what individuals believe boys and girls are supposed to be like rather than what they actually are like (Fabes & Eisenberg, 1998). Similarly, teachers and peers perceive girls as more helpful than boys even though the observed behavioral differences were of a lesser magnitude (Shigetomi, Hartmann, & Gelfand, 1981). Previous studies on teacher-child relationships might also help to better understand these discrepancies. For example, teachers perceive relationships with boys as being more distant and conflicted than their relationships with girl (Koepke & Harkins, 2008; Nichols, et al., 2019). Also, preschool teachers tend to have better relationships with children who have a higher IQ (e.g. Roorda, Verschueren, Vancraeyveldt, Van Craeyevelt, & Colphin, 2014, Veríssimo, Torres, Silva, Fernandes, Vaughn & Santos, 2017).

We recognize the potentially confounding associations with sex. Although the relation between the SBS and teachers' ratings of social competence or with the observed social engagement persisted, our partial correlation analyses results do suggest that sex (and possibly other variables) may be important and should be included when examining associations between the attachment and SC domains. Despite this, our results clearly indicate that having a higher SBS predicts higher values on both child SE or SC.

We recognized the limitations of our study, this was a cross-sectional, with data being collected at only one time point. Collecting data at multiple time points allows for exploration of relationships across time, and for developmental trajectories. We should also add parents' point of view to the multiple informant perspective.

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Chapter V

General Discussion

Children are born with age-appropriate skills and motivation to engage in social interactions. First in a close relationship with the caregiver, and later in a larger non-familiar social context, with peers and other significant adults (Waters & Sroufe, 1983). Over the preschool periods, social behaviors begin to reflect an increasing orientation toward cohesion, affiliation, and engagement with peers (Howes, 1988; Strayer, 1980). Preschool children are expected to spend large periods of time with peers, outside their families and homes, and it's in this context that they will practices the existing (and acquire new) skills, attitudes, and experiences that influence their adaptation across lifespan. Social competent children are capable to organize behavior, affective, and cognitive skills in order to attain personal goals within the peer group, without interfering too much with the goal attainment of peers and or compromising their developmental trajectories (Waters & Sroufe, 1983).

Knowing what typifies success in the social context, and also recognizing the characteristics, the psychological and behavioral consequences of low levels of social engagement, is fundamental if we want to enhance healthy adaptation of children to their environment (e.g., Rubin, Laursen, & Bukowski, 2009; Vaughn & Santos, 2011). The most frequent form of social competence (SC) assessment are the questionnaires, where significant adults rate children social behaviors, traits, or qualities. Questionnaire data are low demanding in terms of money or other resources, being quickly acquired, however might present lower reliability or validity. For example, rating scale studies with multiple informants might present structural problems or low cross-rater agreement (e.g. Gray, Cancy & King, 1981; Renk & Phares, 2004).

In our first study, we explore the structural factor and measurement invariance across multiple raters (teachers, mothers and fathers) of a wide used questionnaire, the SCBE-30 (La Freniere & Dumas, 1996). Which provides a standardized description of affect and behavior in context, discriminating children's social adjustment and behavioral-emotional problems (LaFreniere & Dumas, 1996; LaFreniere et al., 2002). SCBE-30 applicability and validity has been demonstrated in several cultural contexts (e.g. Bárrig & Parco, 2017; Diener & Kim, 2004; Dumas, Arriaga, Moreland Begle, & Longoria, 2011; Klyce, Conger, Conger, & Dumas, 2011; LaFreniere et al., 2002; Sette Baumgartner, & MacKinnon, 2014; Vasquez-Echeverria, Rocha, Leite, Teixeira, & Cruz, 2016). However, mostly using only one rater (usually teachers or mothers, diminishing fathers' perspective) to describe children's behaviors. Recognizing the importance of gathering data from multiple informants and from multiple contexts (Achenbach,

McConaughy, & Howell, 2005; Reyes & Kazdin, 2005, Renk & Phares, 2004) we were interested in exploring discrepancies and similarities between them.

Our results showed that although the structure factor remained the same, there was a stronger agreement between mother and father, while only a weak one when comparing parents with teacher's ratings. Klyce and colleagues (2011) also reported low agreement between parents (93% mothers) and teachers, pointing as a possible explanation different concerns and opportunities of observations regarding children social behavior. A meta-analysis (Renk & Phares, 2004) did not found a higher correspondence between informants who play similar roles (e.g. parents), reporting modest average weighted effect size for both mothers-fathers and parents-teachers' ratings on SC. Another meta-analysis regarding only ratings of behavioral/emotional problems (Achenbach, McConaughy, & Howell, 1987) reported that similar informants presented significant high correlations, whereas ratings from different types of informants (e.g., parents-teachers) were less correlated. Different opportunities and experience when observing the child's behavior could influence informants' perceptions. Parents observe more qualitatively different behaviors and have greater familiarity with their children's pattern of verbal and nonverbal cues in multiple contexts (Diamond & Squires, 1993; Kaufman, Swan, & Wood, 1980). And although, teachers might have only one context for observing child behavior, they have multiple children to compare with, and more academic knowledge related to child development.

Another interesting result is higher agreement between mother and teachers (comparing to father-teachers) on SC and AA. This could be influenced by the way traditionally schools include fathers, acting with them more in a gender-type manner (Klinman,1986; Levine, Murphy, & Wilson, 1993) being the mothers the primary person who teachers talk to about children behavior. Also, fathers typically invest less time (Torres, Veríssimo, Monteiro, Ribeiro, & Santos, 2014) and might not have the same opportunities for observe children behaviors. Or even gender bias since all professors were females.

Using multiple cross-informants, who provide reliable and knowledgeable reports allows a better understanding of the SC exhibited by children (Renk & Phares, 2004). However, the parents' response rate is small (even smaller for fathers) comparing to teachers. For that reason, in our second study, SC was evaluated only with teachers' ratings. We know that, during the preschool years, play activities are the primary context for peer interactions (Power, 2000). At this time, their developmental task involves practicing (or acquiring) skills necessary to maintain interactive and reciprocal play, including expression of positive affect, looking at and

attending to one's play partner, acting prosocially, being friendly and compliant, and learning reciprocal turn-taking play sequences (Rubin, Bukowski, & Parker, 2006), moving from playing alone or alongside with other children toward a true interactive play, establishing complex social dynamics. So, we also used Penn Interpersonal Preschool Play Scales (PIPPS; Fantuzzo et al., 1995, Portuguese version by Torres, Freitas, Monteiro, Antunes, & Santos 2014) questionnaire, that allows the identification of interactive play behaviors distinguishing children who can establish and maintain positive interactive play relationships, from those who cannot. Using a composite measure of these two questionnaires the SCBE-30 (LaFreniere & Dumas, 1996) and PIPPS (Fantuzzo et al., 1995) helps to better correspond to social competence definition. Our main goal was to test the association between a recently described measure of children's mental representations of attachment (i.e. the SBS score derived from children's attachment relevant narratives) and teacher-rated SC and behavioral problems. Our results were consistent with previous research (e.g. Groh et al., 2014; Pallini, Baiocco, Schneider, & Atkinson, 2014; Schneider, Atkinson, & Tardif, 2001), children with higher SBS scores were rated as more SC and as exhibiting fewer externalizing-aggressive behaviors than children with lower SBS scores. These analyses reflect Bowlby's (e.g. 1973) and others (e.g. Water & Sroufe) suggestions, implying attachment security on positive adaptive function in new social contexts and as a protector against more deviant developmental trajectories associated with problem behaviors.

As in some previous studies (e.g. Maia, Veríssimo, Ferreira, Silva, & Antunes, 2012; Page & Bretherton, 2001; Pierrehumbert et al., 2009; Posada et al.,2019; Woolgar, Steele, Steele, Yabsley, & Fonagy, 2001), although the majority of both girls and boys presented narratives with a secure base content, we found significant sex differences (favoring girls) with respect to SBS scores. Previous studies on mother-child communications might help to better understand this sex differences. For example, parents use more feeling state words in conversations with girl than with boys (Dunn, Bretherton, &, Munn, 1987), were significantly more elaborative and coherent when initiate dialogues with their child about emotionally charged events experienced and integrate more emotion states into the discussion and to talk about their causality with girl rather than with boys (Fivush, Haden,& Reese, 2006). This might suggest that girls may receive sex-differentiated socialization and be more prepared to respond to ASCT story stems in a more prosocial and empathic way.

There were also sex differences regarding teachers' ratings on SC, with girls being rated as more socially competent, and presenting less aggressive/externalizing behaviors (comparing to boys) which was consistent with previous studies (e.g. LaFrenniere et al. 2002).

Even if girls may have some advantaged in terms of their ability to tell a well-scripted secure base story, our results clearly indicate that having a history with a well-organized secure base experience predicts teacher perceptions on child SC.

In the last study, we continued exploring SBS relations with children's social competence, including not only teacher's ratings on the social competence composite measure but adding direct observations of social engagement as an indicator of social competence (see Santos, et al.,2019; Vaughn et al., 2016). Using direct observation of the child and their peers in the "moment-by-moment" transactions provide more accurate estimates social behaviors than teachers ratings (Vaughn et al., 2009).

Previous studies (e.g., Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Santos, et al., 2015; Santos, Peceguina, Daniel, Shin, & Vaughn, 2013; Santos, Vaughn, Peceguina, & Daniel, 2014; Shin et al., 2011; Vaughn et al., 2009) established the validity, stability, and cross-sample generality of a hierarchical model of SC based on direct observations of behavior and child sociometric interviews, rather than on adult reports. Social engagement (SE) is driven from one of their three "families" of SC hierarchical model and suggested as a foundational indicator of SC (Santos et al., 2019, Vaughn et al., 2016) since interactions with peers serve both as opportunities to practice and acquire skills used to achieve personal goals within the group.

Our results were consistent with recently findings (Vaughn, et al., 2019) and support the hypothesis of attachment security (i.e.SBS) as a foundational promotor of peer social competence and related social/cognitive skills. Specifically, with SBS predicting teacher's ratings of children's social competence (e.g. Posada, et al., 2019) and direct observed social behavior (e.g. Nichols, Vaughn, Lu, Krzysik & El-Sheikh, 2019; Verissimo et al., 2014).

Again, some sex differences were found, teachers rated girls as more social competent (more than boys), however they were reported by observers as less social engaged. This is consistent with previous meta-analysis (Fabes & Eisenberg, 1998) considering sex differences in children's prosocial behavior. Sex difference (favoring girls) was greatest when prosocial behavior was reported but not when the measure was unobtrusive observations, suggesting that verbal reports of prosocial behavior reflect what individuals believe boys and girls are supposed

to be like rather than what they actually are like (Fabes & Eisenberg, 1998). Similarly, although girls were perceived by teachers and peers to be much more helpful than boys, the observed behavioral differences were of a lesser magnitude (Shigetomi, Hartmann, & Gelfand, 1981).

Many parents, teachers, and other caregivers have worked to socialize children in a non-sex-typed manner, which includes promoting a wide variety of skills and competencies. Nevertheless, sex remains a powerful factor in organizing and shaping the behaviors of children, including those that occur within the peer context (Rose & Smith, 2008).

Despite this, our results clearly indicate that having a higher SBS predicts higher values on both child SE or SC. Suggesting that attachment representation elaborated from the attachment interactions history (see Veríssimo et al., 2014; Posada & Waters, 2018; Wong et al., 2011) are significantly related to child social competence (assessed either with teachers rates or directly from child behaviors observation).

In future research we would like to also include parents' reports, specially fathers' reports to a most ecological and comprehensive assessment (Neisworth & Bagnato, 2005; Verhulst, Koot, & Van der Ende, 1994). In our first study, we found that parents had a specific view off the child that was nor shared with the teacher, and that mothers were in a higher agreement with teachers than fathers were. Fathers interact with their children in specific ways and contexts (Bailey, 1994; Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Lamb, 2004; Monteiro, Veríssimo, Vaughn, Santos & Bost, 2008; Monteiro, et al, 2010) which might lead to different kind of expectations of child behavior.

Taken together, these three studies contribute for the understanding of the relation between attachment relationships and children's social competence in the preschool group, highlighting the importance of using a multiple informant approach.

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