Attachment Representations and Maternal Sensitivity in Low Socioeconomic Status Mothers

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Abstract

According to attachment theory, mental representations are defined as dynamic cognitive guides that organize both perceptual and behavioral aspects of the self, attachment figure, and relationships with others. Based on this assumption, several studies had reported a relationship between attachment representations and the quality of care provided by mothers to their infants. This study explored on the relationship between maternal attachment representations, assessed by a narrative script task, and the quality of maternal care observed at home. Participants were 32 mothers between 19 and 44 years of age (M = 29.6, SD = 6.28) and their children between 8 and 10 months (M = 8.91, SD = 0.96). The results did not show a significant relationship between global scores of participants' observed care (i.e., maternal sensitivity) and their attachment representations. However, a specific association was found between two dimensions of sensitivity (acceptance and active/animated interactions) and the narrative script that refers to a child's physical injury event. Additionally, mothers who reported early separation experiences with their children showed a significant association between sensitivity and attachment representations on mother-child scripts. Moreover, these mothers showed lower scores on global sensitivity and on specific behavioral care dimensions, such as sensitive response and acceptance to child's signals, than those of mothers that did not report separations early in their children' lives.

Keywords: attachment representations, secure base script, sensitivity, infancy

1. Introduction

Attachment theory highlights the essential role played by early experiences with parents and caregivers in developing the individual's social-emotional and psychological adjustment (Bretherton, 1985). Several studies have found that the quality of attachment is associated with self-concept, the ability to solve social problems, to regulate emotions, and the development of cognitive processes, such as memory (Bretherton, 2010; Thompson, 2008).

At birth, the infant has a repertoire of innate behaviors that ensure his survival and allows him to adapt to his environment (Cassidy, 2008). Bowlby (1969/1982) proposed that the attachment behavioral system, inherent in human beings, serves to ensure attention and proximity to caregivers, in order to obtain their support and protection. Also, a safe and reliable attachment relationship in infancy helps the individual to value him, or herself, as worth of care, protection, and affection.

Interactions with the person responsible for the care of the child, usually the mother, are the context in which the attachment relationship is established, and strong emotional bonds develop between the caregiver and child (George & Solomon, 2008). It is in these exchanges that the child builds a relationship of trust with his caregiver when she responds to his signals in an appropriate and sensitive manner. Sensitivity is characterized as the mother's ability to recognize, interpret, and respond promptly and appropriately to the child's verbal and nonverbal signals (Ainsworth, 1968; Ainsworth, Bell, & Stayton, 1974). Thus, when the child is in a situation requiring the presence of the mother, especially a situation that generates uncertainty and stress, and seeks her

proximity, he will expect her to be physically and emotionally available to respond to his needs and provide the security needed to continue exploring the environment and face new or unfamiliar events (Marrone, 2001).

1.1 Secure Base Behavior and Maternal Sensitivity

The pattern of behavior in which the child separates from the mother to explore the surroundings and, then, seeks her proximity for safety and welfare is called secure base behavior (Bowlby, 1969/1982). In the first year of life, children explore their environment more actively and the support provided by their caregiver figure is important to accomplish a balance between proximity and exploration. During the second and third years of life, the attachment relationship is shaped both by developmental changes and the goals shared by mother and child (Bowlby, 1969/1982).

Empirical evidence consistently reports a minor but significant relationship between the mother's sensitivity and the security level observed in the child (De Wolff & van IJzendoorn, 1997; Posada et al., 1999; Posada et al., 2002; Posada, Waters, Crowell, & Lay, 1995). Therefore, the quality of maternal care, i.e., the mother's level of sensitivity, is seen as essential for the establishment of secure attachments with the child (Bowlby, 1969/1982).

While there is not a standard repertoire of sensitive maternal behaviors, since the mother's responses must be consistent with the particular needs of the child, Ainsworth and colleagues identified the characteristics of maternal care that are associated with the child's secure base behavior. In their longitudinal studies both in natural contexts and in the laboratory, they found that mothers of securely attached children were characterized by responding rapidly to the child in moments of tears and anxiety and calming him through physical contact, carrying him in her arms -especially in the first six months-, responding sensitively and consistently to his signals, intervening in harmony with the child's own pacing, being affectionate in physical contact with the child, and expressing the mutual enjoyment of being together, all in addition to providing a regulated and predictable environment so that the child is aware of the consequences of his behavior (Bowlby, 1969/1982). On the other hand, mothers of children with insecure attachment behaviors displayed behaviors not in accordance with the their children's signals, for instance, a slow response, being inaccessible to the child, or being intrusive in their interactions with them (Ainsworth, Blehar, Waters, & Wall, 1978; Braungart-Rieker, Garwood, Powers, & Wang, 2001).

Even though the association of maternal sensitivity and children's attachment is well established (Atkinson et al., 2000; Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003; Britton J., Britton H., & Gronwaldt, 2006; De Wolff & van IJzerdoom, 1997), its effect size has been reported as low to moderate. Thus, there are other variables that also play a role in the association, such as individual and family characteristics (Braungart-Rieker et al., 2001; Mills-Koonce et al., 2007), as well as the contexts in which the mother and her child interact on a daily basis (Casady, Diener, Isabella, & Wright, 2001; Diener, Nievar, & Wright, 2003; Negrao, Pereira, Soares, & Mesman, 2016; Weinfield, Sroufe, & Egeland, 2000). For instance, low socioeconomic status (SES) families tend to be exposed to a variety of stressors and negative life events, which in turn has been related to lower rates of maternal sensitivity and secure attachment when compared to middle-class dyads (Nóblega, 2012; Posada et al., 1995; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000).

1.2 Attachment Representations

Daily interactions between mother and child are internalized by the child in *internal working models* (IOM), which incorporate verbal and nonverbal contents of the relationship and represent notions of self-worth, expectations regrading the mother's response and availability, and patterns of mother-child interaction (Bowlby, 1969/1982). Thus, the IOM are cognitive mental representations that guide both current and future behavior towards others, since the individual used them as a reference for interactions with both the mother and other attachment figures (Main, Kaplan, & Cassidy, 1985).

While attachment representations are believed to be relatively stable (Bowlby, 1969/1982), they are built on the basis of past and present situations and relationships. Thus, new experiences can be incorporated into existing schemes, updating its contents and structure. These representations shape the individual's response to the environment, organize his or her expectations of responses to others, and promote the development of secure base behavior (Bretherton & Munholland, 2008; Posada et al., 1995). A longitudinal study conducted by Carlson, Sroufe, and Egeland (2004) found significant associations both of attachment representational aspects and behaviors with the individual's social-emotional functioning throuogut childhood to late adolescence.

Moreover, Bowlby (1973) noted the importance of the attachment relationship in adulthood, particularly when individuals become parents. A mother's ability to perceive and correctly interpret the child's communication, and to provide a secure base, is founded on the representational scripts of her previous experiences, which

structure her own maternal behavior. Thus, the representational models of having been loved and valued, in addition to the care and protection received throughout her life, will be reflected in her interaction with her child (Bowlby, 1969/1982; Main et al., 1985). Thus, it is expected that mothers whose needs were responded to and fulfilled sensitively in childhood, will be more responsive to the child's signals and demands, whereas those whose needs were rejected, poorly addressed, or not acknowledged, will be less likely to establish a sensitive and warm relationship with their child (Bowlby, 1973). In turn, mothers who faced challenges and stressors in their upbringing, are prone to more negative outcomes later in life than those growing up in more stable environments (Hungerford & Cox, 2006). Moreover, insecure adult attachment style and stress have been found to diminish sensitive parenting behavior in the first year of life (Mills-Koonce et al., 2011).

Bowlby (1980) described two mechanisms by which the mother figure's secure and insecure attachments can be transmitted to the child: the quality of the interaction and an open communication about emotions and relationships with others (Bretherton & Munholland, 2008). In this way, maternal attachment representations contribute to the organization of secure base behavior in the child through the sensitivity the mother shows in their interactions. This is known as the *intergenerational transmission* of attachment patterns (Bowlby, 1988). Several studies have found a positive association between the mother's attachment representations, assessed through the Adult Attachment Interview (AAI, George, Kaplan, & Main, 1985), and the child's secure base behavior based on attachment style (Hesse, 2008; Pederson, Gleason, Moran, & Bento, 1998).

The meta-analysis conducted by van IJzendoorn (1995) and De Wolff and van IJzendoorn (1997), and later evidences (Berlin, 2007) on the model of intergenerational transmission of attachment patterns, have shown significant associations between maternal attachment representations and infant attachment styles, and between representations and maternal parenting and sensitivity behaviors. However, the contribution of these behaviors to the quality of the mother-child attachment relationship is significant but not robust, and it does not explain the association completely. That is why it is important to conduct studies that investigate how maternal representational models relate to the care behavior shown both globally and in its different dimensions in interactions with children. It is also relevant to take into account other factors that may be playing a role in this association, including the personal and contextual characteristics, and the methodology used to asssess the constructs.

To better understand the organization and function of the representational models of attachment, Waters, Rodrigues and Ridgeway (1998) proposed a new methodology using scripts or scenarios to assess the cognitive organization of secure base in adults via narratives made from lists of predetermined words. The representations of situations that reflect the structure and content of interactions of secure base behavior in a variety of contexts are posited as a script, i.e., secure base script (Rodrigues, Wais, Zevallos, & Rodrigues, 2001; Rodrigues-Doolabh, Zevallos, Turan, & Green, 2003; Waters H. & Waters E., 2006).

Waters and colleagues believe that the secure base script should consist of a sequence of events that represent the interactions of a secure attachment relationship. The elements include: (1) The secure base figure facilitates the child's exploratory behavior; (2) The exploration is interrupted by a threatening event or person; (3) The child requests or signals for help; (4) The secure base figure's provides a contingent response; (5) The child accepts the support; (6) The difficulty is overcome; (7) The assistance provided is also effective in providing comfort and regulating affect; (8) The dyad returns to its initial exploration or starts a new interaction or activity.

The researchers who used the script methodology to assess attachment representations reported that mothers who displayed the secure base script in their stories, tended to respond sensitively to their children's signals and to serve as a secure base for them (Bost et al., 2006; Coppola, Vaughn, Cassibba, & Constantini, 2006). However, little is known about the relationship between maternal attachment representations, specifically assessed as secure base scripts, and sensitivity in low SES samples. This topic is relevant as SES has been related to differences in parents' expectations regarding their children (Nóblega, Thorne, Peña, & Moreyra, 2009) and parental childrearing practices in Peru (Castro Morales, 2003; Thorne, 1999).

The main objective of this study was to explore the association between attachment representations and maternal sensitivity, as well as the dimensions of maternal care behavior with children eight to ten months old. Based on attachment theory and contextual characteristics, we expected to find a significant relationship between the variables and hypothesized low scores in both the secure base attachment scripts and observed sensitivity. Furthemore, the study intended to identify the specific aspects of maternal care behavior related to the representational models of attachment in mothers of low SES with children in the first year of life.

2. Method

2.1 Participants

Participants were 32 mothers aged between 19 and 44 years (M = 29.6; SD = 6.28), who reported having between one and five children, 8 months to 22 years. In term of their educational level, 53.13% reported having completed secondary education; 40.63% completed technical college; one mother reported having only completed primary education; and one mother reported complete university studies.

Most mothers (84.37%) lived with their partner, 68.75% lived in an extended family structure, and 25% in a nuclear family structure. Only one participant was living in a single parent family, and another in a stepfamily. As for their occupation, 81.25% worked as housewives and 18.75% had a paying job. All participants were from a low SES, except for two families that belonged in the middle socioeconomic sector.

Infants were 20 boys (62.5%) and 12 girls (37.5%). At the moment of evaluation, all of them were between 8 to 10 months and 29 days (M = 8.91; SD = 0.96). In all cases, the primary caregiver was the mother; ten of them had a separation period of more than one day from this figure; seven of them were separated from their mothers between one day and one week; one between one and four weeks; and one for over two months. Following the exclusion criteria of the sample, none of the participating children were diagnosed with severe developmental disorders (mental retardation, autism, Down syndrome and similars, or prematurity). These data were verified from self-report of mothers during the initial contact.

2.2 Sampling

Sampling and selection of participating dyads was intentional. From a group of mothers attending their children's pediatric consultation in a state-run health center, we selected those who had children between 6 and 10 months; we explained the study to them, and they were invited to participate when their children reached the ages of 8 to 10 months. Among the mothers who agreed to participate, we selected those who met the inclusion criteria for the age of the child and mother, SES, and absence of serious difficulties for the mother and in child development. Only one participant was referred externally to one of the researchers. After reading about the purpose of the study and the procedures to be performed, and discussing it with the reearchers, those who agreed to participate voluntarily signed an informed consent.

2.3 Measures

2.3.1 Maternal Sensitivity

Quality of maternal behavior was evaluated using the Maternal Behavior Q-Sort (MBQS 2.1), developed by Pederson and Moran (1995), in the adapted version for the Latin American context by Posada et al. (1999). The validity of this instrument has been supported in several investigations (e.g., Pederson et al., 1998; Pederson et al., 1990; Posada et al., 1999; Posada et al., 2002, Posada, Carbonell, Alzate, & Silver, 2004).

The MBQS uses the Q-Sort methodology to describe maternal behavior in interaction with the child, through 90 items that are sorted based on observations recorded in natural context that lasts approximately 60 minutes.

The scoring of these observations was made by pairs of evaluators following the methodology proposed by previous research (Bárrig, 2004; Nóblega, 2012; Posada et al., 2004; Posada et al., 2002; Vaughn et al., 2007). Thus, inter-observer reliability was evaluated by obtaining an average coefficient of .82 (SD = 0.09) with values ranging between .59 and .92. Only in cases in which a coefficient lower than .60 was obtained, the recorded observation was evaluated by a third observer, obtaining a final coefficient of .75.

In all cases both observers' assesments were compared, and those items that showed high discrepancies (greater than 3 points) were discussed to reach a consensus scoring; for other items, the average of the two observers' scoring was established as the final score. A global sensitivity coefficient was obtained for each of the participants from the correlation of their final scores with an *ideal sensitivity criterion* established by experts (Pederson & Moran, 1995).

In addition to the process described above, scores were also obtained for the maternal behavior scales, as described in previous studies (Posada et al., 2002), as well as its reliability by internal consistency coefficient Cronbach's Alpha: (1) Mother's *sensitive responding* to infant signals and communications (α = .88); (2) *Accessibility* or the mother's ability to take her child into account, even when attending to other demands (α = .89); (3) *Acceptance* or positive tone from the mother in the interaction with her child (α = .89); (4) *Interference,* referred to intrusion and lack of cooperation on the part of the mother in the activities the child is carrying on (α = .87); (5) *Active-animated*, meaning the mother's active participation in the interaction with her child (α = .79); (6) *Creating an Interesting environment*, which describes maternal behavior focused on

stimulating and organizing an appropriate environment for the child ($\alpha = .80$); and finally, (7) *Concern with physical appearance*, refering to behaviors that indicate an interest in the child's good physical appearance ($\alpha = .50$).

2.3.2 Attachment Representations

Maternal attachment representations were evaluated using the technique of attachment narratives in its translated Spanish version (Rodrigues et al., 2001; Waters & Rodrigues-Doolabh, 2001, 2004). This technique involves the development of short narratives from six word lists that are presented to the participants. Each list contains three columns of four guiding words that are presented in isolation alongside a base example of the theme of the respective narrative. The topics to develop can be grouped into two adult-child interaction scenarios (*Baby's morning*, *The doctor's office*) and two adult-adult scenarios (*Jane & Bob's camping trip*, *The accident*). There is no time limit for the development of the stories with each list, so the participants were asked to indicate the time when they wanted to provide the answer in order to start recording it.

The narratives were transcribed and then scored on a scale from 1 to 7, with 1 representing a script without a secure base and 7 representing a script with a secure base. Two coders evaluated the narratives of 32 participants and discussed stories that presented one or more points of disagreement between the coders. Inter-evaluator reliability was .98 (*Baby's morning*), .97 (*The doctor's office*), .96 (*Jane & Bob's camping trip*) and .97 (*The accident*).

For data analysis, average scores were developed for both adult-child and adult-adult themes, and a global composite averaging the scores for all four stories.

2.4 Procedure

Participating mothers were recrutied at a health center where their children attended pediatric checkups. During the first contact, the nature of the study was explained and some socio-demographic data from mothers interested in the study was collected. When children were eight months old and met the other inclusion criteria, the mothers were reached by telephone to obtain additional socioeconomic information from their family and to coordinate the first meeting at their homes.

We must note that the results of this study are part of a multicenter study designed by the Pontificia Universidad Javeriana-Colombia and ATI-Uruguay, whose aim was to explore the contribution of maternal attachment representations, sensitivity, and their regulatory strategies, especially the use of lullabies, to the child's attachment security in the first year of life. All data collection was conducted in two meetings with the participants. The first meeting was held in the participant's home; on this first visit the procedure was explained in detail, the informed consent was signed, and all socio-demographic data was obtained. On this same visit, we observed and filmed an episode of self-interaction of the dyad for an hour, and a play episode of five minutes. After the observation, the narrative technique was executed with the mother. The second visit took place in the Gesell dome located in the Department of Psychology at the Pontifical Catholic University of Peru. There, a standardized procedure of separations and reunions of both members of the dyad was carried out and filmed. At the end of this visit, information about the participant's care practices with her child and the use she makes of the lullabies was collected.

For their participation, all mothers received a DVD recording of their first observation, and a stipend equivalent to $15. They also had the opportunity to request an additional meeting in which two members of the research team provided counseling on childrearing practices based on observations made during their participation.

2.5 Data Analysis

In the preliminary data analysis, non missing values were found for the MBQS scores, but they were for global scores, adult-child, and adult-adult narrative themes, due to the fact that two of the participants failed to complete that stage of the evaluation process. Data from these participants were not taken into account for the main analysis. Statistical descriptives for each of the variables were identified and statistical reliability and internal consistency for all scales were obtained using the Cronbach Alpha coefficient. In addition, Pearson's *r* or Spearman's *rho* correlational indexes were used to identify associations, and for two-group comparisons, Student's t-test or Mann-Whitney U test were used. Size effects and statistical power were used where relevant.

Based on the lack of association between maternal sensitivity, global or dimensions, and attachment representations, the relationship between each of them and the socio-demographic variables obtained (maternal age, child's age, educational level and occupation of the mother, number of children, child gender, separation of mother and child migration and age of the mother) were explored. A significant relationship between sensitivity and separation from the mother was found; the difference in global sensitivity, dimensions of maternal behavior

and compound scores attachment representations was evaluated in the groups of mothers who did not have an early and prolonged separation. Finally, the association between these variables was also evaluated by separating the groups based on the presence or absence of early prolonged separations.

3. Results

3.1 Preliminary Analyses

Regarding the quality of maternal attachment representations, Table 1 shows the average score of global attachment representations and adult-child and adult-adult scenarios.

Table 1. Maternal attachment representations

Representations	*M*	*SD*	95% CI		*Min*	*Max*
			LL	UL		
Global	2.70	0.70	2.44	2.68	1.56	4.09
Adult-Child	2.68	0.79	2.38	2.97	1.50	4.50
Adult-Adult	2.73	0.79	2.44	3.02	1.13	4.31

As in previous studies (Rodrigues-Doolabh et al., 2003; Vaughn et al., 2007), the inter-theme (adult-child composite score vs adult-adult composite score) and intra-theme (baby's morning vs doctor's office, vs camping trip vs the accident) associations between the narratives were evaluated, obtaining high and positive coefficients for both the former ($r = .57$, $p < .01$), and for the adult-child themes ($r = .42$, $p = .02$), and adult-adult ($r = .54$, $p < .01$).

Furthermore, participants showed an observed sensitivity average of .54 (*Min* = -.02, *Max* = .83, *SD* = 0.24, *95% IC* [0.45, 0.63]). Global sensitivity was significantly related to the dimensions of maternal care behavior: Mother's sensitive response ($r = .91$, $p < .01$), Accessibility ($r = .82$, $p < .01$), Child's acceptance ($r = .50$, $p < .01$), Active-animated attitude ($r = .73$, $p < .01$), and Creation of a stimulating environment by the mother ($r = .42$, $p = .02$). However, this behavior shows no relationship with the mother's interference in the child's activities ($r = .01$, $p = .97$), nor with her concern for the child's physical appearance ($r = .01$, $p = .94$).

Also, Table 2 shows the scores obtained by the participants in the dimensions of maternal sensitivity compared to the criterion of the seven sensitivity dimensions based on the ideal sensitivity developed by Pederson and Moran (1995). Thus, it appears that mothers have a lower level than the ideal Sensitive Responding (SR), Accessibility (ACC), and Interference (INT); a higher than the ideal score for Acceptance (ACCEP) and Concern for the child's Physical Appearance (PA). The results do not show a difference in the scores of Active-Animated Attitude (AA) and the Creation of an Interesting Environment (CIE) between de criterion and maternal behavior.

Table 2. Differences in maternal sensitivity and its dimensions in relation to the criterion ideal

Dimension	Ideal *M*	Mothers *M*	*SD*	*F*(1,31)	*p*	η^2	1-β
SR	8.61	6.7	1.22	78.92	<.01	0.72	1.0
ACC	7.59	5.47	1.64	53.92	<.01	0.63	1.0
ACCEP	6.36	7.24	1.38	12.85	<.01	0.29	0.93
INT	8.44	7.37	1.59	14.64	<.01	0.32	0.96
AA	6.64	7.03	1.18	3.42	0.07	0.10	0.43
CIE	6.17	5.62	1.68	3.45	0.07	0.10	0.44
PA	3.89	4.14	1.12	14.69	<.01	0.32	0.96

Note. *N* = 32, SR = Sensitive responding, ACC = Accesibility, ACCEP = Acceptance, INT = Interference, AA = Active-animated, IE = Creating an Interesenting Environment, AF = Physical Appearance.

3.2 Relationship between Attachment Representations and Maternal Sensitivity

Overall, none relationship was found between the quality of the participant's mental representations of adult attachment and observed sensitivity, both globally and in the dimensions of maternal care behavior: Accessibility, acceptance of his son, interference in the child's activities, active-animated attitude, creation of an interesting environment, and concern for the physical appearance of her child.

However, when the relationships of the stories by mother-child and adult-adult scenarios were explored, it was found that the mother-child scenario story of the doctor's office was significantly associated with behavioral maternal dimensions of Acceptance ($r = .42$, $p = .02$) and an Active-animated attitude ($r = .34$, $p = .04$).

On the other hand, exploring some of the socio-demographic variables that might be playing a role in shaping maternal attachment representations and the observed sensitivity, significant differences were identified if early separations between the mother and her child were reported.

Thus, while mothers who had a separation from their children at some point ($n = 10$) showed no differences in attachment representations both globally (*Myes* = 2.46, *SDyes* = 0.63, *Mno* = 2.82, *SDno* = 0.72, $p = .182$), in adult-child themes (*Myes* = 2.00, *SDyes* = 0.80, *Mno* = 2.76, *SDno* = 0.79, $p = .403$), and in adult-adult themes (*Myes* = 2.42, *SDyes* = 0.77, *Mno* = 2.89, *SDno* = 0.76, $p = .132$), compared to mothers who reported no separations. Table 3 shows that those who were separated from their children showed lower scores in both global sensitivity and size of maternal behavior of sensitive response signals and acceptance in their interactions with their children. Also, in the group of mothers with separations, a significant relationship between global sensitivity and attachment representations in both mother and child ($r = .65$, $p = .04$) scenarios was found.

Table 3. Differences in maternal sensitivity according to the occurrence of mother-child separation

	No		Yes					
	(*n* = 22)		(*n* = 10)					
	M/Mdn	*SD*	*M/Mdn*	*SD*	*t*(30)/U	*p*	*d*	1-*β*
Sensitivity	0.63 [a]	0.20	0.45	0.26	49	0.01	0.98	-
SR	7.25 [a]	1.05	6.54 [a]	1.28	46 [b]	0.01	0.84	-
ACC	5.97 [a]	1.53	5.31 [a]	1.73	69 [b]	0.10	-	0.34
ACCEP	7.63	1.02	6.38	1.72	2.57	0.02	0.94	-
INT	8.17 [a]	1.52	7.58 [a]	1.76	80.5 [b]	0.23	-	0.19
AA	7.63 [a]	1.14	6.88 [a]	1.18	62 [b]	0.51	-	0.45
CIE	7.24	1.14	6.56	1.18	0.35	0.73	-	0.06
PA	4.20	1.10	4.00	1.19	0.45	0.67	-	0.07

Note. SR = Sensitive responding, ACC = Accesibility, ACCEP = Acceptance, INT = Interference, AA = Active-animated, IE = Creating an Interesenting Environment, AF = Physical Appearance.

[a] Median was reported for non-normal distributions.

[b] Test of Mann-Whitney U was used for non normal scales.

Finally, when the relationship between global sensitivity and attachment representations compounds scores was reevaluated, taking into account the division of the participants based on the presence or absence of prolonged early separation, a significant positive relationship between global sensitivity and the representations of attachment in adult-child theme was found only in the group that had had a separtion ($r = .65$, $p = .04$).

4. Discussion

This study aimed to explore the relationship between attachment representations and sensitivity in mothers with children in the first year of life, living in Lima. Knowing the process of transmission of attachment patterns from the caregiver figure to the child contributes to a compilation of empirical evidence in our context of the core principles of the attachment theory.

Regarding the organization of the mother's secure base representations, reflected in the development of narratives, it was found that the scores were lower than those reported in other studies (Carlson et al., 2004; Kaloustian, 2004; Vaughn et al., 2006). These findings may be due, in part, to a configuration of expectations and schemes of insecure maternal attachment relationships generated from less sensitive interactions with their attachment figure (Bowlby, 1973). It could also be that mothers have not been able to verbally articulate the elements of the secure base, although average levels of observed sensitivity were manifested.

Moreover, most of the participants belong to a low SES which could be associated with living environments characterized by scarcity of resources and multiple stressors, including abusive or violent family dynamics (Castro Morales, 2003; Hungerford & Cox, 2006), which may have hindered the establishment of secure attachments with their own caregivers (Casady et al., 2001; Diener et al., 2003; Posada & Pratt, 2008). Also in these cases, when faced with the task of developing narratives, elaboration would be avoided or only short stories without much content would be provided (Bowlby, 1988; Sroufe, 2003).

Another alternative hypothesis could be methodological, referred to the type of task used to assess attachment representations, which may have been unfamiliar and difficult to produce using a narrative language for participants, who may also have a lower education than other samples and study contexts. For further studies it would be valuable to evaluate the representation of attachment with some sub-samples, using the adult attachment interview, given its recognized validity and reliability.

As for the observed maternal sensitivity, an average score similar to those reported in other studies in the region was found (Posada et al., 1999; Posada et al., 2002). Contrary to our hypothesis, sensitivity in our sample of low SES mothers was higher when compared to a sample of a majority of middle-class dyads (Nóblega, 2012). However, in both studies the number of participants is not sufficient enough to state any generalization of the results and the children were of different ages.

All dimensions of sensible behavior showed significant associations with the global sensitivity score, except for the dimensions of *interference* and *physical appearance*. On average, mothers were attentive to their children and interpreted their positive and negative signals, responding consistently, and displaying affection in their interactions with them. Regarding the absence of relationship with the last two dimensiones, the result may indicate that these two aspects, considered by the theory as relevant shapers of maternal sensitive behavior, are not particularly salient in this sample of low SES mothers during their children's the first year of life. In the first case, it may be that the mother, independently of her overall quality of care (i.e., low or high sensitivity), shows a more directive role and initiative to lead the interactions with her child at this early age (Thorne, 1999). Meanwhile, in the second case there would be an obvious concern for the child's physical appearance in daily interactions at home, as a behavioral characteristic associated with the quality of care. These possible explanations must be corroborated in future studies to determine their relevance and scope.

In assessing the main purpose of the study, the results indicated that mohers' attachment representations were not significantly associated with the sensitivity observed in interactions with their children, neither globally nor in the themes associated with adult-child or adult-adult relationships. This lack of association was similar to that found by Kaloustian (2004), who used the same methodology for evaluating the variables of study in a relatively larger sample of mothers in the United States.

In subsequent analyses, and considering narratives separately, a significant association between one of the mother-child interaction stories, *the doctor's office*, and the maternal behavior dimensions of acceptance and active-animated attitude was found. A similar result was reported by Kaloustian (2004), where the doctor's visit narrative was significantly associated with the global sensitivity observed at home. In this story, where the child experiences an accident and has two sequences of pain, the fall and the shot, the phenomenon of secure base behavior is clearly expressed, which would activate the corresponding scheme of seeking help and protection by the child, in turn mobilizing a sensitive caregiver, who has a script for the use of the secure base, to accept the help-seeking behavior, and interact lively and actively with the child in disstress. Therefore, secure base scripts relating to a mother's actions when confronted with a situation of danger and physical harm for the child, are associated with positive affect in current interactions with her child and with her active participation in the infant's activities (Bowlby, 1988).

One variable to take into account when considering possible explanations for the absence of the expected relationship between attachment representations and sensitivity is the early separation between the mother and her child. Significant differences were found in the scores on global sensitivity and behavioral dimensions of sensitive maternal care response and acceptance between the group of mothers who experienced some separation from their children and those who were not separated from them. Mothers who reported being separated from their children scored lower than those who did not have gaps in the variables scores described above. These results may indicate that maternal care behavior in the first year of life in low SES mothers may have been influenced by separations that occurred and could occur in interactions with the infant (Field, 1996; Howard, Martin, Berlin, & Brooks-Gunn, 2011).

As the nature of these separation events nor its frequency are precisely known, future longitudinal designs that may provide more information about the role that separations play in the mother-child relationship are worth considering. One might expect that such separations challenge the mother's ability to keep a balance between her maternal care work and her activities outside the home, reducing her ability to attend and respond appropriately to the needs of her child (Posada & Pratt, 2008; Waters et al., 2000).

On the other hand, considering only those mothers who reported being separated from their child, a positive and significant association between global sensitivity and attachment representations concerning adult-child interaction scenarios was observed. Is in this group of mothers where a correspondence is found between the representational models of maternal attachment and the behavioral patterns displayed when taking care of their children. That is to say, the organization of the secure base script from their previous experiences of attachment is associated with the level of sensitivity observed in their interactions with the child at home.

Regarding the limitations of the study, we must note the small number of mother-infant dyads, which resulted in a low representativeness of the sample and a lack of statistical power to detect small, but significant correlations, if any. Additionally, we must mention the novelty of the methodology used to assess maternal attachment representations, for which there are very few studies in the Latin American context (Rodrigues-Doolabh et al., 2003; Vaughn et al., 2007). It should also be noted that home visits where the participants were observed cannot provide a complete information about the dynamics of the mother-child relationship, since fewer opportunities to observe stress that activate the attachment system and the range of variability of maternal behaviors would arise at home (Posada et al., 1995).

For future research on the topic, considering the absence of association between the main variables under study as well as the significant association found between the maternal narrative of the visit to the doctor's office and dimensions of the sensitive maternal behavior, it would be advisable to use narrative scenarios that reflect care interactions between mother and child in stressful situations. This is based on the fact that in the doctor office's story the activation of the attachment system and the system of care, with the resulting search for proximity on the part of the child, are most evident, as are the attachment figure's response and the shared return to the initial state of exploration or normality; these are not as evident in the baby's morning story (Bowlby, 1988; Waters H. & Waters E., 2006).

References

Ainsworth, M. D. S. (1968). Object relations, dependency, and attachment: A theoretical review of the infant mother relationship. *Child Development*, *40*, 969-1025. http://dx.doi.org/10.2307/1127008

Ainsworth, M. D. S., Bell, S. M., & Stayton, D. F. (1974). Infant-mother attachment and social development: Socialization as a product of reciprocal responsiveness to signals. In M. P. M. Richards (Ed.), *The integration of a child into a social world* (pp. 99-135). New York: Cambridge University Press.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum.

Atkinson, L., Niccols, A., Paglia, A., Coolbear, J., Parker, K. C. H., Poulton, L., … Sitarenios, G. (2000). A meta-analysis of time between maternal sensitivity and attachment assessments: Implications for internal working models in infancy/toddlerhood. *Journal of Social and Personal Relationships*, *17*(6), 791-810. http://dx.doi.org/10.1177/0265407500176005

Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, *129*(2), 195-215. http://dx.doi.org/10.1037/0033-2909.129.2.195

Berlin, L. J. (2007). Interventions to enhance early attachments: The state of the field today. In L. Berlin, Y. Ziv, L. Amaya-Jackson, & M. Greenberg (Eds.), *Enhancing early attachments. Theory, research, intervention, and policy* (pp. 3-33). New York: Guilford Press.

Bárrig, P. (2004). *Relation between children's attachment representations and secure base behavior* (Unpublished masters thesis). Purdue University, Indiana, United States of America.

Bost, K. K., Shin, N., McBride, B. A., Brown, G. L., Vaughn, B. E., Coppola, G., Verísimmo, M. ... Korth, B. (2006). Maternal secure base scripts, children's attachment security, and mother-child narrative styles. *Attachment & Human Development*, *8*(3), 241-260. http://dx.doi.org/10.1080/14616730600856131

Bowlby, J. (1969/1982). *Attachment and loss. Vol. 1, Attachment*. New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss. Vol. 2, Separation*. New York: Basic Books.

Bowlby, J. (1980). *Attachment and loss. Vol. 3, Loss: Sadness and depression*. New York: Basic Books.

Bowlby, J. (1988). *A secure base*. New York: Basic Books.

Braungart-Rieker, J. M., Garwood, M. M., Powers, B. P., & Wang, X. (2001). Parental sensitivity, infant affect, and affect regulation: Predictors of later attachment. *Child Development*, *72*, 252-270. http://dx.doi.org/10.1111/1467-8624.00277

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. In I. Bretherton, & E. Waters (Eds.), Growing points of attachment theory and research. *Monographs of the Society for Research in Child Development*, *50*, 147-166. http://dx.doi.org/10.2307/3333824

Bretherton, I. (2010). Fathers in attachment theory and research: A review. *Early Child Development and Care*, *180*(1/2), 9-23. http://dx.doi.org/10.1080/03004430903414661

Bretherton, I., & Munholland, K. (2008). Internal working models in attachment relationships: A construct revisited. In J. Cassidy, & P. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 89-111). New York: Guilford Press.

Britton, J. R., Britton, H. L., & Gronwaldt, V. (2006). Breastfeeding, sensitivity, and attachment. *Pediatrics*, *118*(5), e1436-e1443. http://dx.doi.org/10.1542/peds.2005-2916

Carlson, E. A., Sroufe, L. A., & Egeland, B. (2004). The construction of experience: A longitudinal study of representation and behavior. *Child Development*, *75*(1), 66-83. http://dx.doi.org/10.1111/j.1467-8624.2004.00654.x

Casady, A., Diener, M., Isabella, R., & Wright, C. (2001, April). *Attachment security among families in poverty: Maternal, child, and contextual characteristics*. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Minneapolis, MN.

Cassidy, J. (2008). The nature of the child's ties. In J. Cassidy, & P. Shaver (Eds.), *Handbook of attachment: Theory, research, & clinical applications* (pp. 3-20). New York: Guilford Press.

Castro Morales, J. (2003). Estilos de crianza y comportamientos infantiles en la pobreza. *Revista de Psiquiatría y Salud Mental Hermilio Valdizán*, *4*(1), 77-92.

Coppola, G., Vaughn, B. E., Cassibba, R., & Costantini, A. (2006). The attachment script representation procedure in an Italian sample: Associations with adult attachment interview scales and with maternal sensitivity. *Attachment & Human Development*, *8*, 209-219. http://dx.doi.org/10.1080/14616730600856065

De Wolff, M., & van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, *68*(4), 571-591. http://dx.doi.org/10.1111/j.1467-8624.1997.tb04218.x

Diener, M. I., Nievar, M. A., & Wright, C. (2003). Attachment security among mothers and their young children living in poverty: Associations with maternal, child, and contextual characteristics. *Merrill-Palmer Quarterly*, *49*(2), 154-182. http://dx.doi.org/10.1353/mpq.2003.0007

Field, T. (1996). Attachment and separation in young children. *Annual Review of Psychology*, *47*, 541-561. http://dx.doi.org/10.1146/annurev.psych.47.1.541

George, C., & Solomon, J. (2008). Attachment and caregiving. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research and clinical applications* (pp. 649-670). New York: Guilford Press.

George, C., Kaplan, N., & Main, M. (1985). *The Adult Attachment Interview* (Unpublished manuscript). University of California at Berkeley.

Hesse, E. (2008). The adult attachment interview: Protocol, method of analysis, and empirical studies. In J. Cassidy, & P. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 552-598). New York: Guilford Press.

Howard, K., Martin, A., Berlin, L. J., & Brooks-Gunn, J. (2011). Early mother-child separation, parenting, and child well-being in Early Head Start families. *Attachment & Human Development*, *13*(1), 5-26. http://dx.doi.org/10.1080/14616734.2010.488119

Hungerford, A., & Cox, M. J. (2006). Family factors in child care research. *Evaluation Review*, *30*(5), 631-655. http://dx.doi.org/10.1177/0193841X06291532

Kaloustian, G. (2004). *Maternal mental representations and sensitivity in mother-child attachment relationships* (Unpublished masters thesis). Purdue University, Indiana, United States of America.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development*, *50*, 66-106. http://dx.doi.org/10.2307/3333827

Marrone, M. (2001). *La teoría del apego: Un enfoque actual*. Madrid: Lugar Editorial.

Mills-Koonce, W. R., Appleyard, K., Barnett, M., Deng, M., Putallaz, M., & Cox, M. (2011). Adult attachment style and stress as risk factors for early maternal sensitivity and negativity. *Infant Mental Health Journal*, *32*(3), 277-285.

Mills-Koonce, W. R., Gariépy, J. L., Propper, C., Sutton, K., Calkins, S., Moore, G., & Cox, M. (2007). Infant and parent factors associated with early maternal sensitivity: A caregiver-attachment systems approach. *Infant Behavior & Development*, *30*, 114-126. http://dx.doi.org/10.1016/j.infbeh.2006.11.010

Negrao, M., Pereira, M., Soares, I., & Mesman, J. (2016). Maternal attachment representations in relation to emotional availability and discipline behaviour. *European Journal of Developental Psychology*, *13*(1), 121-137. http://dx.doi.org/10.1080/17405629.2015.1071254

Nóblega, M. (2012). *Conducta de base segura y sensitividad en niños y madres del distrito de Los Olivos* (Doctoral dissertation). Pontificia Universidad Católica del Perú, Lima, Perú.

Nóblega, M., Thorne, C., Peña, B., & Moreyra, P. (2009). Imágenes de la niñez desde la perspectiva de las madres peruanas. *Revista de Psicología*, *27*(2), 213-241.

Pederson, D. R., Gleason, K. E., Moran, G., & Bento, S. (1998). Maternal attachment representations, maternal sensitivity, and the infant-mother attachment relationship. *Developmental Psychology*, *34*, 925-933. http://dx.doi.org/10.1037/0012-1649.34.5.925

Pederson, D. R., & Moran, G. (1995). A categorical description of infant-mother relationships in the home and its relation to Q-sort measures of infant-mother interaction. *Monographs of Society for Research in Child Development*, *60*, 111-132. http://dx.doi.org/10.1111/j.1540-5834.1995.tb00207.x

Pederson, D. R., Moran, G., Sitko, C., Campbell, K., Ghesquire, K., & Acton, H. (1990). Maternal sensitivity and the security of infant-mother attachment. A Q-sort study. *Child Development*, *61*(6), 1974-1983. http://dx.doi.org/10.2307/1130851

Posada, G., Carbonell, O. A., Alzate, G., & Plata, S. (2004). Through Colombian lenses: Ethnographic and conventional analysis of maternal care and their associations with secure base behavior. *Developmental Psychology*, *40*, 508-518. http://dx.doi.org/10.1037/0012-1649.40.4.508

Posada, G., Jacobs, A., Carbonell, O. A., Alzate, G., Bustamante, M. R., & Arenas, A. (1999). Maternal care and attachment security in ordinary and emergency contexts. *Developmental Psychology*, *35*(6), 1379-1388. http://dx.doi.org/10.1037/0012-1649.35.6.1379

Posada, G., Jacobs, A., Richmond, M. K., Carbonell, O. A., Alzate, G., Bustamante, M. R., & Quiceno, J. (2002). Maternal caregiving and infant security in two cultures. *Developmental Psychology*, *38*(1), 67-78. http://dx.doi.org/10.1037/0012-1649.38.1.67

Posada, G., & Pratt, D. M. (2008). Physical aggression in the family and preschoolers' use of the mother as a secure base. *Journal of Marital and Family Therapy*, *34*(1), 14-27. http://dx.doi.org/10.1111/j.1752-0606.2008.00050.x

Posada, G., Waters, E., Crowell, J., & Lay, K. L. (1995). Is it easier to use a secure mother as a secure base? Attachment q-set correlates of the adult attachment interview. In E. Waters, B. Vaughn, G. Posada, & K. Kondo-Ikemura (Eds.), *Caregiving, cultural and cognitive perspectives on secure-base behavior and working models: New growing points of attachment theory and research. Monographs of the Society for Research in Child Development* (Vol. 60, pp. 133-145).

Sroufe, J. (2003). Commentary: Comprehending the incomprehensible. *Attachment & Human Development*, *5*(4), 409-414. http://dx.doi.org/10.1080/14616730310001633401

Rodrigues, L. M., Wais, D. P., Zevallos, A., & Rodrigues, R. R. (2001, April). *Attachment scripts across cultures: Evidence for a universal script*. Poster session presented at the Biennial Meeting of the Society for Research in Children Development Minneapolis, MN.

Rodrigues-Doolabh, L., Zevallos, A., Turan, B., & Green, K. (2003, March). Attachment scripts across cultures: Further evidence for a universal secure-base script. In H. Waters, & E. Waters (Chairs), *Script-like representations of secure base experience: Evidence of cross-age, cross-cultural, and behavioral links*. Poster symposium presented at the Biennial Meetings of the Society for Research in Child Development, Tampa, FL.

Thompson, R. A. (1998). Early sociopersonality development. In W. Damon (Ed.), & N. Eisenberg (Vol. Ed.), *Handbook of child psychology, Vol. 3: Social, emotional, and personality development* (5th ed., pp. 25-104). New York: Wiley.

Thompson, R. A. (2008). Attachment-related mental representations: Introduction to the special issue. *Attachment & Development*, *10*(4), 347-358. http://dx.doi.org/10.1080/14616730802461334

Thorne, C. (1999). Los efectos del nivel socioeconómico y la cultura en el desarrollo del niño en el Perú. In Sociedad Interamericana de Psicología (Ed.), *La psicología al fin del siglo* (pp. 381-396). Caracas, Venezuela: Autor.

van IJzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin*, *117*, 387-403. http://dx.doi.org/10.1037/0033-2909.117.3.387

Vaughn, B. E., Coppola, G., Verissimo, M., Monteiro, L., Santos, A. J., Posada, G., … Korth, B. (2007). The quality of maternal secure-base scripts predicts children's secure-base behavior at home in three sociocultural groups. *International Journal of Behavioral Development*, *31*(1), 65-76. http://dx.doi.org/10.1177/0165025407073574

Vaughn, B. E., Verissimo, M., Coppola, G., Bost, K. K., Shin, N., McBrdie, B., … Korth, B. (2006). Maternal attachment script representations: Longitudinal stability and association with stylistic features of maternal narratives. *Attachment & Human Development*, *8*(3), 199-208. http://dx.doi.org/10.1080/14616730600856024

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment security in infancy and early adulthood: A twenty-year longitudinal study. *Child Development*, *71*(3), 684-689. http://dx.doi.org/10.1111/1467-8624.00176

Waters, H. S., & Rodrigues-Doolabh, L. (2001, April). *Are attachment scripts the building blocks of attachment representations*? Paper presented at the Biennial Meeting of the Society for Research in Child Development, Minneapolis, MN.

Waters, H. S., & Rodrigues-Doolabh, L. (2004). *Manual for decoding secure base narratives* (Unpublished manuscript). State University of New York at Stony Brook.

Waters, H. S., Rodrigues, L. M., & Ridgeway, D. (1998). Cognitive underpinnings of narrative attachment assessment. *Journal of Experimental Child Psychology*, *71*, 211-234. http://dx.doi.org/10.1006/jecp.1998.2473

Waters, H. S., & Waters, E. (2006). The attachment working model concept: Among other things, we built script-like representations of secure base experiences. *Attachment & Human Development*, *8*, 185-197. http://dx.doi.org/10.1080/14616730600856016

Weinfield, N. S., Sroufe, L. A., & Egeland, B. (2000). Attachment from infancy to early adulthood in a high-risk sample: Continuity, discontinuity, and their correlates. *Child Development*, *71*(3), 695-702. http://dx.doi.org/10.1111/1467-8624.00178

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