

Sensitive caregiving and attachment security in preschoolers Cuidado sensible y seguridad del apego en preescolares

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Abstract: This study was based on sensitivity hypothesis of attachment theory that relates sensitive nurture with attachment security. The aim was to analyze the relation between 16 caregivers' sensitivity and attachment security of their preschool children of typical development, living in Quito, Ecuador. Two instruments were used for assessment: Maternal Behavior for Preschoolers Q-set and Attachment Behavior Q-set Version 3.0, in their Latin American adaptation. Compared to others studies with Latino population, in this work a level of sensitivity similar to the previously reported, and a slightly higher level of children security was found. Regarding the relation between both variables, sensitivity was found as a predictor of attachment security. Since Ecuador is a multicultural country, is recommended to replicate this study in other cultural contexts and with other development conditions groups.

Key words: children care, attachment relations, preschool children, socio-emotional development

Resumen: Este estudio se fundamentó en la hipótesis de sensibilidad de la teoría del apego que relaciona la crianza sensible con la seguridad del apego. Tuvo como objetivo analizar la relación entre la sensibilidad de 16 figuras cuidadoras y la seguridad del apego de sus hijos preescolares de desarrollo típico, residentes en Quito, Ecuador. Para la medición se utilizaron dos instrumentos: Maternal Behavior for Preschooler Q-set y Attachment Behavior Q-set Version 3.0, en su adaptación latinoamericana. En comparación con otros estudios con población latina, en este trabajo se encontró un nivel de sensibilidad similar al previamente reportado y un nivel de seguridad ligeramente más alto. En cuanto a la relación entre ambas variables, se halló a la sensibilidad como predictora de la seguridad del apego. Al ser Ecuador un país pluricultural, se recomienda replicar este estudio en grupos de otros contextos culturales y con otras condiciones de desarrollo.

Palabras clave: cuidado infantil, relaciones de apego, niños en edad preescolar, desarrollo socioemocional

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Introduction

The studies on attachment carried out by Bowlby between the years of 1960 and 1980 have yielded solid theoretical constructs related to socioemotional development. According to the author's proposal, infants have an in-built attachment behavioral system that drives them to bond preferentially with a figure that has the role of primary caregiver (Bowlby, 1969/1998; 1988; Bakermans-Kranenburg & van IJzendoorn, 2016). When this bond is secure, there is in the child an appropriate balance between the search for proximity with the caregiver and the exploration of the environment (Ainsworth, 1969; Bowlby, 1969/1998; 1988), a balance within which the caregiver becomes a secure base that offers opportunities for learning through exploratory interactions, under her or his supervision and support (e.g., Salinas-Quiroz et al., 2015; Simpson & Belsky, 2016).

Therefore, the security of the attachment is defined as the trust that the child experiences in the fact that a person who is close to him/her, her or his attachment figure, is available, provides comfort and protection and is responsive to stress signals or to the child's contact demands (Bowlby, 1988; Bakermans-Kranenburg & van IJzendoorn, 2016). Recent research has found that attachment favors the development of the cerebral structures related to emotional and social life (e.g., Coan, 2016; Schore, 2017), and consequently the quality of this bond is considered to be an antecedent of the state of wellbeing and of the implicit sense of security throughout life (Schore, 2017; Simpson & Belsky, 2016).

In reference to Bowlby's postulates, and as an upshot of his observations, Ainsworth (1967; 1969) found that the sensitivity of the caregiver towards the signals coming from the infants predates attachment security and it is its primary determinant (Ainsworth, Blehar, Waters, & Wall, 1978/2015; Pederson, Bailey, Tarabulsy, Bento, & Moran, 2014; Salinas-Quiroz & Posada, 2015). Sensitivity refers to the ability of the caregiver to perceive and identify the cues and communications implicit in the child's behavior, interpret them in an adequate manner and respond to them appropriately and promptly (Ainsworth, 1969). Consequently, the level of sensitivity of the caregiver is manifested through the quality of her or his responses to the changing and sometimes am-

biguous needs of the child (Cerezo, Pons-Salvador, & Trenado, 2011).

The findings of the wide range of investigations on this subject carried out specially in Europe and North America (e.g., De Wolf & van IJzendoorn, 1997; Mesman & Emmen, 2013) led to the formulation of the four core hypotheses of attachment theory: universality, normativity, sensitivity and competence (Mesman, van IJzendoorn, & Sagi-Schwartz, 2016; van IJzendoorn & Sagi-Schwartz, 2008). In relation to the latter aspect, competence, several studies have substantiated the claim regarding the effect of early attachment bonds on cognitive and social development, which becomes evident from the preschool stage onwards (e.g., Marvin, Britner, & Rusell, 2016).

In Latin America, research on sensitivity – security in infancy and in childhood – is more recent and less abundant, in spite of the fact that Bowlby (1988) and several contemporary authors (e.g., Carbonell, 2013; Keller, 2013; Quinn & Mageo, 2013; Salinas-Quiroz & Posada, 2015) have emphasized the importance of carrying out studies in diverse ecological environments, with the aim of identifying context specific cultural determinants, promoting the implementation of evidence based interventions (Carbonell, 2013), and validating in different regions the main hypotheses of attachment theory.

Basically, the publications of Latin American studies on this subject have been carried out with population from Chile (e.g., Lecannelier, Kimelman, González, Núñez, & Hoffman, 2008), Colombia (e.g., Posada, Carbonell, Alzate, & Plata, 2004; Posada et al., 2002; Vaughn et al., 2007), Peru (e.g., Nóbrega, 2012; Nóbrega et al., 2016), and Mexico (e.g., Posada et al., 2013). The general results of several studies have demonstrated that there are significant links between sensitivity and security, which evidences the fundamental role of sensitive caregiving in the organization of secure-base behavior. In addition, it was found that age, education and life conditions of the caregiver are positively related to her or his level of sensitivity (Posada et al., 2016; Santelices et al., 2015).

In the case of Ecuador, publications on attachment relation in childhood are rare, although there are studies that support some links, for instance, maternal personality traits and their children's attachment styles (Guerrero, 2013), child attachment style, school adaptation and learning

(Orbe, 2012; 2015). Nevertheless, a theoretical review of several academic papers on the subject challenges the normative criteria of attachment theory in societies that have different cultural models, such as the Ecuadorian (Villamarín, 2017). This raises an issue related to the need to characterize in a contextualized manner, both the sensitive behavior of the caregivers, and their children's manifestations concerning the security of their attachment.

In relation with the research discussed above, this study was based on the sensitivity hypothesis of attachment theory, which relates sensitive childrearing with security (van IJzendoorn & Sagi-Schwartz, 2008), through a mixed research approach. The aim was to analyze the relation between sensitivity in a group of caregivers and the attachment security of their typically developing preschool children - all residents of Quito, Ecuador - in order to generate contextual knowledge and to count with referential data that can serve as a base to work with other cultural groups and populations with different capacities.

The guidelines for this work, as well as the Informed Consent Form for Participants applied, were approved by the Ethics Committee for Research with Human Beings of the Pontificia Universidad Católica del Ecuador (PUCE). For the research design, we partially replicated the model of a study carried out by the Group of interpersonal relations and socioemotional development of the Pontificia Universidad Católica del Perú (PUCP).

Materials and Methods

Participants

The participants in this study were 16 dyads of caregivers and their typically developing preschool-aged child, of middle socio-economic status, residents of Quito, Ecuador. As inclusion criteria for caregivers, we established the requirements of their being adults and having, at least, completed secondary education.

To recruit the participants, the information about the study was broadcasted through several media: a talk at a local educational unit, advertisements on the bulletin boards of a pediatric center and of a childcare center, and postings on

social media. The persons who manifested their interest in participating and who also met the inclusion criteria were asked to sign a Informed Consent Form in which the adults, as legal guardians, authorized the participation of their children. Additionally, through an initial Interview, socio-demographic information was gathered, as well as data on the child's development. Therefore, the selection of the participants was carried out by using convenience sampling. The process started out with 22 dyads, of which only 16 remained to the end.

In all cases, the mothers were self-identified as principal caregivers of the children. Their ages fluctuated between 22 and 44 years ($M=33.81$, $SD=5.62$). In relation to their educational level, the average for years of study was 15.63 ($Min=12$, $Max=18$, $SD=.96$), thus, three among them (19%) had completed secondary school, 10 (62%) had received undergraduate level higher education, and the remaining three (19%) had received graduate level education. Concerning the number of children for each mother, eight among them (50%) had only one child, three (18.75%) had two children, and five (31.25%), had three children.

The children were between 36 and 71 months of age ($M= 56.94$, $SD= 7.91$); eight of them (50%) were boys and eight (50%) were girls. Concerning their ordinal positions, eight were only children (50%), four were older siblings (25%), two were middle children (12.5%), and two were younger siblings (12.5%). During the initial Interview with the caregivers, we verified that all the children had undergone a bio-psycho-social development within the norm.

When the process was over, as a benefit for participating, recommendations were offered to caregivers on ways to strengthen their attachment bond with their children.

Assessment

Sensitive Caregiving¹. The sensitivity of the caregiving was assessed using the Maternal Behavior for Preschoolers Q-Set (MBPQS) scale. We applied the updated version (Posada, Kaloustian, Richmond, & Moreno, 2007), which was linguistically adapted to include Peruvian idiomatic expressions (Nóblega, 2012), which are very similar to those used in Ecuador. The MBPQS

¹ Translator's note: The terms "sensitive caregiving" used in this study to assess the sensitivity of the caregiver can be considered as equivalent to the more traditional concept of "maternal sensitivity" when comparing research results with previous studies.

consists of 90 statements that describe behaviors related to the sensitivity construct, 55 of which refer to four dimensions: Contribution to harmonious interactions (CHI), Secure Base Support (SBS), Supervision and monitoring (SUP), and Limit Setting (LS).

According to Posada and collaborators (2007), during the administration of the scale two evaluators observe independently the behavior of the caregiver in her interaction with the child, in their natural environment, and apply the items of the scale that are not easily observable (e.g., Item 67: “When setting rules and prohibiting an activity to child, explains reasons”), in an interview-style manner. Afterwards, the assessors use the Q-sort methodology to assess the behavior that was observed, and, to do so they classify the 90 statements into groups that range from 9 to 1 with 10 statements in each group, in such a way that in group 9 they classify the behaviors that are most characteristic of the person who is being assessed, and in group 1, the least characteristic. Then, the average of the scores is calculated if the difference between the two observers is of up to three points; if the difference is greater, they must review the behavior and come to an agreement. The final score for each item is correlated with the scale criterion, to obtain the index of sensitivity for the attachment figure assessed (Posada et al., 2007).

In the literature review, we found two studies that provide empirical support for the reliability and validity of MBPQS and of its four dimensions (Posada et al., 2007; Richmond, Posada, & Jacobs, 2001). Concerning interobserver reliability, recent transcultural studies placed it in a range between .81 (Peru) and .86 (United States) (Posada et al., 2016). As regards internal consistency reliability, the same transcultural studies report Cronbach’s alpha between .93 (CHI) and .67 (LS) for the entire sample (Posada et al., 2016).

In the present study, we recorded the behaviors of the 16 caregivers during their normal routine interaction with their children, in the natural environment of both of them (their home), within the space of an hour. Afterwards, two independent observers previously trained in the use of the MBPQS scale, assessed the behaviors. The average interobserver reliability, calculated by us-

ing the intraclass correlation coefficient, was .86 ($SD=0.07$, $Min=.73$, $Max=.95$). As far as the internal consistency reliability for the four MBPQS dimensions of sensitivity is concerned, high coefficients were found, which were similar to those reported by Posada et al. (2016): $\alpha =.96$ for CHI, $\alpha =.95$ for SBS, $\alpha =.71$ for SUP, and $\alpha =.81$ for LS.

Attachment Security. The attachment behavior of the children who participated was assessed with the scale Attachment Behavior Q-Set, Versión 3.0 (AQS) (Waters, 1995), adapted to the Latin American context (Posada, Waters, Crowell, & Lay, 1995) and to Peruvian linguistic expressions (Nóbrega, 2012). Just like the previous scale, AQS consists of 90 statements that assess, in this case, behaviors related with attachment security; 50 of the statements refer to four dimensions: Smooth interactions with mother (SIM), Physical contact with mother (PCM), Interactions with other adults (IOA), and Proximity to mother (PM).²

As was the case with the previous scale, two assessors observe independently the interactional behavior of the child with her or his caregiver in their natural environment and assess the adult by applying the items in the AQS scale that are not easily observable (i.e., Item 3: “When he is upset or injured, child will accept comforting from adults other than mother.”). Then, the assessors use the Q-sort methodology previously described, to evaluate the behavior that was observed. The index of security is obtained by correlating the final scores corresponding to each item with the scale criterion (Waters, 1995).

In the literature review, we found several studies that provide evidence for the reliability and validity of AQS and of its four dimensions in contexts other than those that have been studied traditionally (i.e., Posada et al., 1995; Posada et al., 2013; Solomon & George, 2016; van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). Concerning interobserver reliability, transcultural studies conducted by Posada et al. (2016) found it was within the range between .78 (United States) and .84 (Colombia). As regards internal consistency reliability, the studies reported an $\alpha > .85$ in the total scale (Vaughn et al., 2007). Whereas, the dimensions corresponding to

2 *Translator’s note: The terms used to designate these dimensions in previous studies published in English were preserved to allow for comparisons. Nevertheless, in other sections, the emphases that the authors of the presents study made were preserved when referring to warmth in relation to Interactions with mother; enjoyment in Physical contact with mother; and proximity-seeking behaviors in Proximity to mother.*

attachment security, the study conducted by Nóbrega and collaborators (2016) reported an α between .60 for PCM for IOA, and .89 for SIM.

In the present study, the AQS and the MBPQS scales were applied simultaneously. In the case of AQS, we recorded the behavior of the 16 children during their routine interaction with their caregivers, in an environment that is natural for both of them (their home), within the space of an hour. Afterwards, two previously trained independent observers assessed the behavior of the children. The average interobserver reliability found was .87 ($SD=0.06$, $Min=.76$, $Max=.98$); it was obtained by using the intraclass correlation coefficient. Internal consistency reliability for the four AQS dimensions of security, which was calculated using Cronbach's alpha, was $\alpha=.82$ for SIM, $\alpha = .696$ for PCM, $\alpha = .760$ for PM, $\alpha = .847$ for IOA.

Procedure

We visited each caregiver-child dyad at home on four occasions. During the first visit, the caregivers were informed about the goals, procedures, and their role in the study; doubts were dispelled and the informed consent was signed, i.e. the document through which they confirmed their will to participate, authorized the participation of their children and accepted the use of the data for research purposes. During the second visit, the initial interview was applied to gather sociodemographic information and obtain data concerning the development of the child. During the third visit, we observed and recorded the routine dyadic interaction, in the natural environment, which lasted for approximately an hour. After which, we applied the interview questions corresponding to some of the items of the MBPQS and AQS that are not easily observable to the caregivers. During the last visit, we gave recommendations that were aimed at strengthening the attachment bond with their children, in a conversational setting.

The footage of each of the filmed dyadic relation of the 16 participants was observed by four independent observers who had been previously trained in the use of the instruments; two of them assessed maternal behavior by using the MBPQS scale, and the other two assessed the behavior of the child by using the AQS scale; we used in all cases Q-sort methodology.

For data analysis, we used descriptive statistics (mean, standard deviation, minimum and maximum scores), parametric statistics, basically, Pearson's correlation, and inferential statistics, fundamentally linear regression. These procedures allowed us to analyze the characteristics of maternal sensitivity and of attachment security of the children, as well as the link between sensitivity and security.

Results

Regarding the sensitivity of the 16 caregivers, we found an average index of .43 ($SD=0.44$, $Min=-.63$, $Max=.77$, $CI\ 95\% = [.20, .67]$) corresponding the average scores of the participants and the sensitivity criterion of the MBPQS scale, an index which is situated within the range of the results found in other Latin American countries (e.g., Posada et al., 2016). Concerning the consistency of the caregiver's behavior, we found high and very high correlations between sensitivity and its four dimensions, and among the dimensions themselves, as it can be observed in Table 1; besides, these correlations are statistically significant at a level of $p<.01$; the lowest link registered was between Limit Setting and Supervision and monitoring ($r=.53$).

Table 1
Correlation between maternal sensitivity and its dimensions

	Sensitivity	CHI	SBS	SUP	LS
Sensitivity	-				
CHI	.98**	-			
SBS	.97**	.96**	-		
SUP	.90**	.90**	.88**	-	
LS	.80**	.75**	.76**	.53**	-

Note: CHI = Contribution to harmonious interactions; SBS = Secure base support; SUP = Supervision and monitoring; LS = Limit Setting.

* $p < .05$; ** $p < .01$

The analysis of sensitivity in relation to the sociodemographic data evidenced a statistically significant moderate positive correlation between sensitive caregiving and caregiver's age ($r = .526$, $CI\ 95\% = [.04, .81]$, $p=.036$), a finding that is consistent with previous reports (Posada et al., 2016; Santelices et al., 2015); with respect to the link between sensitive caregiving and educational level of the caregiver, a positive moderate correlation was found, but it was not statistically significant ($r=.423$, $CI\ 95\% = [-.09, .76]$, $p=.102$).

Regarding the average scores obtained through the application of the MBPQS, we found discrepancies with the scale criterion that were higher than + - 3 points in 6 of the 90 items, as it can be seen in Table 2.

As it can be observed, two of the six items, which belong to the dimension Secure Base Support, received a score that was higher than the one registered in the scale, while the other three items (one of Secure Base Support and two of Supervision and monitoring), received a lower score. The analysis of the statement of those items allows us to infer that in the group of caregivers who participated there is, overall, a disposition to carry out activities based on what calls the attention of the child that was greater than what is considered to be the norm, while on the other hand, they show, overall, a tendency to sooth the child and prevent conflictive situations that is lower than the one described in the criteria.

Concerning the attachment security of the children, we found an average score of .42 ($SD=0.17$, $Min=.02$, $Max=.71$, $CI\ 95\% = [.33, .51]$), which is slightly higher than the one found in other Latin American countries (Posada et al., 2016). With regards to attachment security consistency (Table 3), we found that for the children who participated in the study, security evinced a highly significant level of association with warmth in interactions with mother ($p<.01$), a moderate significant level of association with the enjoyment of physical contact with her ($p<.05$), and a moderate level of association with search for her proximity. It was also found that attachment security is independent from the kind of interaction that the child establishes with other adults, and that there is an association that is between low and null of the dimensions of attachment security among each other.

On the other hand, the correlations found between attachment security and some sociodemographic data such as child age ($r = .167$, $CI\ 95\% = [-.353, .582]$, $p=.537$), and between attachment security and gender ($r=.138$, $CI\ 95\% = [-.395, .588]$, $p=.609$) were low and not statistically significant. In reference to the Mean scores for the AQS scale (Table 4), we found discrepancies with the criterion that were higher than + - 3 point in 11 of the 90 items.

Table 2
Discrepancies higher than + - 3 points in MBPQS (N=16)

Item N°	Dim	Statement	Avg. Score	Criterion Score	Discr
57	SBS	When child is upset or sad, mom ignores him/her or is not very skilled at comforting and re-orienting him/her to play.	5.06	1	-4.06
36	SBS	Mother carries out activities based on what calls the attention of child.	6.75	3	-3.75
40	SUP	Is two steps ahead of child, anticipates conflictive situations and does something to prevent escalation	5.03	8.5	3.47
55	SBS	When there is an accident, she immediately goes to child to check on what happened.	5.22	8.75	3.53
71	SUP	Follows or moves to a better location to supervise/monitor as child moves from place to place.	4.69	8.25	3.56
62	--	If upset or crying due to an accident, she picks him up until he is soothed and ready to be put down.	4.91	8.75	3.84

Note: Dim = Dimension to which the item belongs; Avg. Score = Average score for the 16 participant caregivers; Criterion Score = Scale criterion score; Discr = Discrepancy between Average Score and Criterion; SBS = Secure Base Support Dimension; SUP = Supervision and Monitoring Dimension
The dashes -- in the Dim column indicate that the item does not correspond to any of the dimensions.

Table 3
Correlation between attachment security and its dimensions

	Security	SIM	PCM	PM	IOA
Security	-				
SIM	.76**	-			
PCM	.59*	.22	-		
PM	.49	.02	.38	-	
IOA	.17	-.15	.08	.07	-

Note: SIM = Smooth interactions with mother (warmth); PCM = Physical contact with mother (enjoyment); PM = Proximity to mother (seeking); IOA = Interaction with other adults.
* $p < .05$; ** $p < .01$

Table 4
Discrepancies higher than + - 3 points in AQS (N=16)

Item N°	Dim	Statement	Avg. Score	Criterion Score	Discr
69	PM	Rarely asks mother for help.	2.3	6.63	-4.33
59	PM	When finishing an activity or play, generally finds something else without turning to mother between activities	3.8	7.56	-3.76
7	IOA	Child laughs and smiles easily with different persons.	4.3	7.5	-3.2
37	--	Child is very active. Always moving around. Prefers active to calm play.	4.8	7.9	-3.1
68	--	On average, child is a more active person than mother.	5	8.03	-3.03
53	PCM	When mother picks him/her up, child puts his/her arms around her or on her shoulders.	8.5	5.22	3.28
11	PM	Frequently hugs or seeks contact with mother without her asking or inviting him/her to do so.	7.5	3.97	3.53
71	PCM	If mother picks him/her up when scared or upset, child stops crying and recovers quickly.	8.8	4.97	3.83
83	PM	When the child is bored s/he goes to mother looking for something to do.	6.5	2.66	3.84
21	PM	When child plays at home, s/he keeps an eye on mother's location. S/he calls her from time to time, pays attention when she changes site or activity.	8.8	4.03	4.77
90	PM	If mother goes very far, child follows her and continues to play in the new site where she is.	8.3	3.53	4.77

Note: Dim = Dimension to which the item belongs; Avg. Score = Average score for the 16 participant children; Criterion Score = Scale criterion score; Discr = Discrepancy between Average Score and Criterion Score; PM = Proximity to mother (seeking) dimension; IOA = Interaction with other adults dimension; PCM = Physical contact with mother (enjoyment) dimension. The dashes -- in the Dim. column indicate that the item does not correspond to any of the dimensions.

Five of these 11 items (two corresponding to the dimension search for Proximity to mother, one to the dimension Interaction with other adults, and two that do not correspond to any of the dimensions) received a score that was lower than the scale criterion, while the remaining six items (two corresponding to the enjoyment of Physical contact with mother, and two corresponding to the search for Proximity with mother) received a higher score. The analysis of these items allows us to infer that the group of children who participated appeared as shier, more dependent on their mother, and with higher levels of search for proximity and contact than what is registered as the norm in the scale, which could be related to cultural factors.

Regarding the central objective of this study, we analyzed the predictive role of caregiver's sensitivity in relation to the security of the children, taking also into account the sociodemographic variables maternal age and maternal education, and the age and gender of the children. When all the variables were introduced simultaneously for the calculation of multiple linear regression, only sensitivity remained at a significant level as a predictor in the model ($F(1, 14) = 12.73$,

$p = .003$), while the sociodemographic variables were excluded. The relation that we found between sensitivity and security ($r = .690$, $r^2 = .439$, $p = .003$) indicates that they are directly, positively and significantly correlated, a correlation which is higher than that reported by other studies with Latin American populations (e.g., Posada et al., 2016), and also that 44% of the variability in the attachment security of the children can be accounted for by the sensitivity of their caregivers.

Insofar as the correlation between sensitivity and the four dimensions of attachment security is concerned, we found that the behavior of the caregiver was significantly associated with the child's warmth during his/her interactions with her ($r = .59$, $p = .02$), and with the search for proximity ($r = .49$, $p = .05$); nevertheless, we did not find significant or marginally significant relations with the enjoyment that the child experiences through physical contact with his/her caregiver ($r = .36$, $p = .17$), neither with the interactions that a child establishes with other adults ($r = -.29$, $p = .29$). On the other hand, we found that children's attachment security is significantly correlated with three of the four dimensions of caregiver's sensitivity: contribution to harmonious

interactions ($r = .68, p = .004$), secure base support ($r = .63, p = .01$), and supervision and monitoring ($r = .57, p = .02$). We found that children's attachment security is marginally associated with limit setting by their caregivers ($r = .46, p = .08$).

Discussion

The present study was based on the sensitivity hypothesis of attachment theory, which relates sensitive caregiving with attachment security (van IJzendoorn & Sagi-Schwartz, 2008). With the aim of generating contextual knowledge and of making available referential data that can serve as a base for future studies, we worked with 16 caregivers and their typically developing preschool children, residents of Quito, Ecuador; this is a context in which there is no research available on this subject. The goal was to analyze the relationship between sensitivity and security in the studied population.

Regarding the sociodemographic characteristics of the participants, we found two interesting facts. On the one hand, we found that for 100% of the cases the children's principal caregivers were mothers, and that the latter consider the father as an aid in childrearing, and that they perceive themselves as being the main responsible caregiver. Nonetheless, the majority of them have an academic educational background that allows them to do well in the work sphere (in this research, 81% have higher education: 62% at undergraduate level and 19% at graduate level). On the other hand, we observed that 50% of the children were only children, which reflects a tendency in the make-up of present-day Ecuadorian families that live in the cities.

Concerning caregiver's sensitivity, we found among the participants an average rate of .43, which is similar to what other studies with similar Latin American population reported (e.g., Posada et al., 1999; Posada et al., 2016), particularly, the findings corresponding to Mexico (.46) and Colombia (.48) (Posada et al., 2016). We also found that caregiver's sensitivity is related to their age; this allows us to conclude that maturity is positively associated with sensitive behavior; this finding has been previously reported by different research studies (e.g., Bornstein, Hendricks, Haynes, & Painter, 2007; Demers, Bernier, Tarabulsky, & Provost, 2010; Posada et al., 2016; Santelices et al., 2015). Additionally,

we found that the different dimensions of the participants' sensitive behavior are linked to one another; this allows us to infer that they have developed their sensitivity with the same intensity in the different domains.

Moreover, we can observe, in general terms, that caregivers who contribute to the establishment of harmonious interactions, who support their children in the establishment of a secure base, who supervise and monitor them, and set limits in a sensitive way, have children who have developed a secure attachment bond with them. In spite of that, attention is drawn to the high dispersion of some scores, which in some cases reach negative values; although in a strict sense, that would be indicative of low sensitivity, it is important to consider that the rearing practices vary from one context to the other (e.g., Keller, 2013; Quinn & Mageo, 2013), and that intracultural variations are often even higher than intercultural ones (Mesman et al., 2016; van IJzendoorn & Kroonenberg, 1998), something that can be more evident in multicultural countries such as Ecuador (Villamarín, 2017). In fact, the scores of the items shown in Table 2 indicate, on the one hand, that when extreme scores are averaged, they fall within the mean values, but, on the other, they also show a general tendency of the caregivers to situate themselves in a middle ground between protecting their child and letting him/her face the situations with his/her own resources, which can be different from what is registered as the norm, but not, on account of that, less sensitive.

Regarding attachment security, the children participating in this study, as a group, reached scores (.42) that were superior to those of other groups of Latin American children, under comparable sociodemographic conditions (Nóbrega, 2012; Posada et al., 2013; Posada et al., 2016). In addition, they all obtained positive scores, which indicates that, in general terms, they have developed an adequate level of security in their attachment relationships. Still, in contrast with maternal behavior, the children that were studied do not show a high consistency in their behaviors; although we found a high association with warmth in their interactions with mother, the relationship between attachment security, enjoyment of physical contact with mother and search for proximity with her is just moderate.

Additionally, the results also confirmed a fact that had been previously reported in studies

of the Peruvian population related to the relative independence between the nature of the interaction that the child establishes with other adults and his/her overall security level (Nóblega, 2012). In the face of this result, the cultural aspects have been considered as a possible explanation, in the sense that in Latin American contexts great importance is given to respect and to the child's compliance with certain behavioral norms in relation to other persons (Nóblega, 2012). In fact, the high scores of the child participants in several items related to the search of proximity to mother can be considered as a confirmation of this claim in the sense that, in the presence of unknown persons, they seek shelter in their caregivers.

In relation to the main goal, we found that sensitivity was a variable that was predictive, at a significant level, of attachment security, and the relation between them .69, which is higher to the one found in the meta-analyses carried out internationally (e.g., De Wolff & van IJzendoorn, 1997; Atkinson et al., 2000), and in studies in Latin American contexts which report a range between .30 in Mexico and .43 in Peru (Posada et al., 2016).

Conclusions

To sum up, the results of the present study allow us to conclude that the caregivers who participated show a level of sensitivity towards their preschool children's needs similar to the one found in other Latin American studies. We also found an association between maternal age and sensitive behavior and a high correlation among the four dimensions of sensitivity. An interesting fact that was observed in the interaction is that the caregivers, in general terms, tend to let the children face situations with their own resources, which seems to relate to a child-rearing practice.

Concerning children's attachment security, we found a level that was slightly higher than what other Latin American studies reported; in addition, we found a high correlation between security and warmth in interactions with mother; a moderate correlation with the enjoyment of physical contact with her, and with proximity seeking; a relative independence between security and interaction with other adults, which is probably on account of the respect and the distance that characterizes the relation of children with older persons, in Latin American contexts, as previous studies have also claimed.

As it was the case with other investigations, this research found that sensitivity was a predictor of attachment security; besides, we found associations between sensitivity of the caregiver and warmth and proximity-seeking on the part of the child, as well as between the child's security and the mother's contribution to harmonious interactions. Since Ecuador is a diverse and multicultural country, these results can serve as a base for further investigations, in which the paternal figure be included, as well as children from other cultural contexts and with different developmental conditions, so as to achieve an increased knowledge on this subject.

It is worth considering as limitations to this study, the low number of participants and of visits carried out for each dyad. Furthermore, it is necessary to emphasize that some methodological aspects could have favored the results obtained, such as the ages of the children, the nature of the methods used for data collection, as well as the temporal simultaneity of the measurement of maternal and child behaviour; these factors that have been reported in the literature as being influential in relation to the increase of the values of the correlations (e.g., Atkinson et al., 2000; De Wolff & van IJzendoorn, 1997; Nóblega, 2012).

References

- Ainsworth, M. D. (1967). *Infancy in Uganda: Infant care and the growth of love*. Baltimore: Johns Hopkins University.
- Ainsworth, M. D. (1969). *Maternal Sensitivity Scales. The Baltimore Longitudinal Project*. Recuperado de <http://www.psychology.sunysb.edu/attachment/measure/content/maternal%20sensitivity%20scales.pdf>
- Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978; 2015). *Patterns of attachment: A psychological study of the Strange Situation*. Bulgay, Suffolk, UK: Taylor & Francis.
- Atkinson, L., Niccols, A., Paglia, A., Coolbear, J., Parker, K., Poulton, K., . . . 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, 791-810. doi:10.1177/0265407500176005
- Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2016). Attachment, Parenting and Genetics. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications* (3 ed., pp. 155-179). New York: The Guilford Press.
- Bornstein, M. H., Hendricks, C., Haynes, O. M., & Painter, K. M. (2007). Maternal sensitivity and child responsiveness: Associations with social context, maternal characteristics, and child characteristics in a multivariate analysis. *Infancy*, 12(2), 189-223. doi:10.1111/j.1532-7078.2007.tb00240.x

- Bowlby, J. (1969/1998). *El Apego y la Pérdida: El Apego* (Vol. 1). Barcelona: Ediciones Paidós Ibérica.
- Bowlby, J. (1973). *Attachment and loss - Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1988). *Una base segura*. Buenos Aires: Paidós.
- Carbonell, O. A. (2013). Conferencia: La sensibilidad del cuidador y su importancia para promover un cuidado de calidad en la primera infancia. *Ciencias Psicológicas*, 7(2), 201-207.
- Cerezo, M. A., Pons-Salvador, G., & Trenado, R. (2011). La cualidad del apego infantil y sensibilidad materna desde la perspectiva microsocia. *Acción Psicológica*, 8(2), 9-25.
- Coan, J. A. (2016). Toward a Neuroscience of Attachment. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications* (3 ed., pp. 242 - 269). New York: The Guilford Press.
- De Wolff, M. S., & van Ijzendoorn, M. H. (1997). Sensitivity and Attachment: A Meta-Analysis of Parental Antecedents of Infant Attachment. *Child Development*, 68(4), 571-591.
- Demmers, I., Bernier, A., Tarabulsy, G. M., & Provost, M. A. (2010). Mind-mindedness in adult and adolescent mothers: Relations to maternal sensitivity and infant attachment. *International Journal of Behavioral Development*, 34(6), 529-537. doi:10.1177/0165025410365802
- Guerrero, X. (2013). *Estudio del tipo de personalidad de las madres que acuden al Centro Materno Infantil Ambato N° 2 y su relación con el tipo de apego que generan con sus hijos. Trabajo de Grado previo a la obtención del título de Magíster en Psicoterapia Integrativa*. Quito, Ecuador: Universidad Central del Ecuador, Facultad de Ciencias Psicológicas.
- Keller, H. (2013). Attachment and Culture. *Journal of Cross-Cultural Psychology*, 44(2), 175-194. doi:10.1177/0022022112472253
- Lecannelier, F., Kimelman, M., González, L., Núñez, C., & Hoffmann, M. (2008). Evaluación de Patrones de Apego en Infantes durante su Segundo Año en dos Centros de Atención de Santiago de Chile. *Revista Argentina de Clínica Psicológica*, XVII, 197-207.
- Marvin, R. S., Britner, P. A., & Russell, B. S. (2016). Normative Development: The Ontogeny of Attachment in Childhood. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications* (3 ed., pp. 273 - 290). New York: The Guilford Press.
- Mesman, J., & Emmen, R. A. (2013). Mary Ainsworth's legacy: a systematic review of observational instruments measuring parental sensitivity. *Attachment & Human Development*, 15(5-6), 485-506. doi:10.1080/14616734.2013.820900
- Mesman, J., van IJzendoorn, M. H., & Sagi-Schwartz, A. (2016). Cross-Cultural Patterns of Attachment: Universal and Contextual Dimensions. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research and Clinical Applications* (3 ed., pp. 852-877). New York: The Guilford Press.
- Nóbrega, M. (2012). *Conducta de base segura y sensibilidad en niños y madres del Distrito Los Olivos. Tesis para optar el Grado de Doctora en Psicología*. Lima, Perú: Pontificia Universidad Católica del Perú.
- Nóbrega, M., Barrig, P., Conde, G., Núñez del Prado, J., Carbonell, O. A., Altmann de Litvan, M., . . . Bauer, M. (2016). Cuidado materno y seguridad del apego antes del primer año de vida. *Universitas Psychologica*, 15(1), 245-260.
- Orbe, C. (2012). *El estilo de apego del niño con la madre como factor de influencia en el proceso de adaptación al medio preescolar. Tesis de Maestría*. Quito, Ecuador: Universidad San Francisco de Quito.
- Orbe, C. (2015). La Teoría del Apego desde la visión Mente - Cerebro - Educación. *Revista PUCE*, (100), 237-258.
- Pederson, D. R., Bailey, H. N., Tarabulsy, G. M., Bento, S., & Moran, G. (2014). Understanding sensitivity: Lessons learned from the legacy of Mary Ainsworth. *Attachment and Human Development*, 16(3), 261-270. doi:10.1080/14616734.2013.842753
- Posada, G. (2016). Piecing together the sensitivity construct: ethology and cross cultural research. In K. E. Grossman, I. Bretherton, E. Waters, & K. Grossman (Eds.), *Maternal Sensitivity: Mary Ainsworth's Enduring Influence on Attachment Theory, Research, and Clinical Applications*. New York, US: Taylor & Francis.
- Posada, G., Carbonell, O. A., Alzate, G., & Plata, S. J. (2004). Through Colombian Lenses: Ethnographic and Conventional Analyses of Maternal Care and Their Associations With Secure Base Behavior. *Developmental Psychology*, 40(4), 508 - 518. doi:10.1037/0012-1649.40.4.508
- Posada, G., Jacobs, A., Carbonell, O. A., Alzate, G., Bustamante, M., & Arenas, A. (1999). Maternal care and attachment security in ordinary contexts. *Developmental Psychology*, 30(6), 1379 - 1388. doi:10.1037/0012-1649.35.6.1379
- Posada, G., Jacobs, A., Richmond, M., Carbonell, O., Alzate, G., Bustamante, M. R., & Quiceno, J. (2002). Maternal Caregiving and Infant Security in Two Cultures. *Developmental Psychology*, 38(1), 67-78. doi:10.1037/0012-1649.38.1.67
- Posada, G., Kaloustian, G., Richmond, M. K., & Moreno, A. (2007). Maternal secure base support and preschoolers' secure base behavior in natural environments. *Attachment & Human Development*, 9(4), 393 - 411. doi:10.1080/14616730701712316
- Posada, G., Trudel, M., Plata, S. J., Peña, P. P., Pérez, J., Tereno, S., . . . Keng-Ling, L. (2013). Is the Secure Base Phenomenon Evident Here, There, and Anywhere? A Cross-Cultural Study of Child Behavior and Experts' Definitions. *Child Development*, 84(6), 1896-1905. doi:10.1111/cdev.12084
- Posada, G., Trumbell, J., Nóbrega, M., Plata, S., Peña, P., Carbonell, O., & Lu, T. (2016). Maternal Sensitivity and Child Secure Base Use in Early Childhood: Studies in Different Cultural Contexts. *Child Development*, 87(1), 297-311. doi:10.1111/cdev.12454
- 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. (E. Waters, B. Vaughn, G. Posada, & K. Kondo-Ikemura, Eds.) *Monographs of the Society for Research in Child Development*, 60(2-3), 133 - 145. doi:10.2307/1166175
- Quinn, N., & Mageo, J. M. (2013). *Attachment Reconsidered: Cultural Perspectives on a Western Theory*. New York: NY Palgrave Macmillan.
- Richmond, M., Posada, G., & Jacobs, A. (2001). Maternal behavior and attachment security in 3 year-olds: A naturalistic study. *Poster presented at the meeting of the Society for Research in Child Development*. Minneapolis, MN.
- Salinas-Quiroz, F., & Posada, G. (2015). MBQS: Método de evaluación para intervenciones en apego dirigidas a la primera infancia. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud*, 13(2), 1051-1063. doi:10.11600/1692715x.13235280514

- Salinas-Quiroz, F., Morales-Carmona, F. A., de Castro, F., Juárez-Hernández, M. C., Posada, G., & Carbonell, O. A. (2015). Educación Inicial de Base Segura: Indicador de la calidad educativa para la primera infancia. *Psicología Iberoamericana*, 23(1), 75-82.
- Santelices, M. P., Farkas, C., Montoya, M. F., Galleguillos, F., Carvacho, C., Fernández, A., . . . Himmel, É. (2015). Factores predictivos de sensibilidad materna en infancia temprana. *Psicoperspectivas*, 14(1), 66-76. doi:10.5027/PSICOPERSPECTIVAS-VOL14-ISSUE-FULLTEXT-441
- Schore, A. N. (2017). Modern Attachment Theory. In S. N. Gold (Ed.), *APA Handbook of Trauma Psychology: Vol 1. Foundations in Knowledge* (pp. 389-406). American Psychological Association. doi:10.1037/0000019-020
- Simpson, J. A., & Belsky, J. (2016). Attachment Theory within Modern Evolutionary Framework. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications* (3 ed., pp. 91 - 116). New York: The Guilford Press.
- Solomon, J., & George, C. (2016). The Measurement of Attachment Security and Related Constructs in Infancy and Early Childhood. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications* (3 ed., pp. 366 - 396). New York: The Guilford Press.
- van Ijzendoorn, M. H., & Kroonenberg, P. M. (1988). Cross-cultural patterns of attachment: A meta-analysis of the Strange Situation. *Child Development*, 59, 147-156.
- van Ijzendoorn, M. H., & Sagi-Schwartz, A. (2008). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research and Clinical Applications* (2 ed., pp. 880-905). New York, US: The Guilford Press.
- van Ijzendoorn, M. H., Vereijken, C. M., Bakermans-Kranenburg, M. J., & Riksen-Walraven, J. M. (2004). Assessing attachment security with the Attachment Q-sort: Meta-analytic evidence for the validity of the observer AQS. *Child Development*, 75, 1188-1213. doi:10.1111/j.1467-8624.2004.00733.x
- 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. doi:10.1177/0165025407073574
- Villamarín, G. (2017). *Consideraciones culturales sobre la práctica de la Psicología: el caso de la Teoría del Apego. Programa de Maestría en Estudios de la Cultura*. Quito: Universidad Andina Simón Bolívar, sede Ecuador.
- Waters, E. (1995). Appendix A: The Attachment Q Set. (E. Waters, B. Vaughn, G. Posada, & K. Kondo-Ikemura, Eds.) *Monographs of the Society for Research in Child Development*, 60(2-3), 234 - 246. doi:10.2307/1166181