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Enhancing maternal sensitivity in contexts of urban extreme poverty in Sierra Leone: A pilot study

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Abstract

This pilot study presents preliminary data on the efficacy of *Strong Bonds, Strong Pikin* (SBSP), a brief intervention program that aims to enhance sensitivity among mothers who care for their preschool children in a slum settlement in Freetown (Sierra Leone). SBSP adapts principles of attachment theory to intervention within a non-Western cultural setting, where families suffer from extreme poverty. A combination of psychoeducation, group work, video-feedback, and storytelling defines the methodology of the program. Maternal sensitivity, parenting stress, and the use of violent discipline practices were measured before (pretest) and after the intervention (posttest) in a sample of 43 mothers who participated in the program. Analyses showed a significant increase in observed maternal sensitivity, as well as a decrease in mother-reported parenting stress, child problems, and use of violent discipline practices from pretest to posttest. These results are discussed in terms of the potential value of culturally sensitive, attachment-centered interventions with caregivers who raise their children in non-Western settings affected by economic vulnerability.

KEYWORDS

attachment, culture, intervention, poverty, sensitivity

1 | INTRODUCTION

According to attachment theory, infants and preschool children seek proximity to their primary caregivers as a source of protection in the face of danger, comfort in the face of stress, and as a secure base from which to explore the environment and develop new adaptive abilities (Bowlby, 1982; Cassidy, 2016). In the face of the child's attachment and exploration needs, caregiver sensitivity involves the ability of attachment figures to detect, to interpret, and to respond to such needs promptly and adequately (Ainsworth et al., 1978). Sensitive caregivers are able to evaluate what is needed by the child in a consistent manner, as well as to adapt their behavior to those needs. Caregiver sensitivity is related to children's security of attachment, which in turn has been established as a powerful predictor of socio-emotional competence and mental health across the life-span (Groh et al., 2014; Thompson, 2016; Waters et al., 2000). In addition, sensitive caregiving is a predictor of positive child outcomes in its own right (see Deans, 2020 for an extensive review). This makes it an important factor in the determination of the child's ability to thrive when growing up within impoverished and or stressful environments.

Unfortunately, caregiver sensitivity may be a luxury for parents who raise their children in contexts of social risk, under conditions of chronic stress and deprivation (Booth et al., 2018; Crittenden, 2016; Mesman et al., 2012; Neuhauser, 2018; Pitillas, 2019). For these parents, having their child's needs—beyond basic physical care—in mind,

and providing with well-timed, attuned responses may be a difficult challenge. Sensitivity can be compromised by stressful life circumstances that are more likely in populations with low maternal education, low family income, low maternal age, absence of father, parenting stressors, and/or maternal internalizing symptoms, as shown in recent meta-analytic studies (Booth et al., 2018; Neuhauser, 2018). Psychosocial interventions that are focused, tailored to the families' worries and core values, and centered on parent-child attachment relationships, may foster child and family resilience, and be a significant resource in preventing the intergenerational transmission of risk (Berástegui & Pitillas, 2021; Cooper et al., 2009; Negrao et al., 2014).

The main goal of this pilot study is to present preliminary data on the functioning and results of *Strong Bonds, Strong Pikin* (SBSP), an attachment-based intervention program aimed at enhancing maternal sensitivity among mothers of preschool children in the context of urban poverty in Africa. Specifically, SBSP was designed for implementation in Sierra Leone, a country affected by very high rates of poverty, crime, political corruption, family violence, and child maltreatment (Davies, 2002). Child maltreatment and violence at home are two of the most significant problems affecting children in Sierra Leone, and an aspect of family life closely related to the constructs of caregiver sensitivity and attachment security. In a recent study conducted with 9165 caretakers of children aged 5–14 years, it was found that the prevalence of psychological abuse was 85.7%, while moderate physical abuse was 66.1%, and severe physical abuse was 54.4% (Pengpid and Peltzer, 2020). Child abuse, in its different forms, was also associated with mental health problems among children (Pengpid and Peltzer, 2020).

The program was developed in the context of wider measures undertaken by local institutions that work to promote early child development in Freetown, the capital of Sierra Leone. Early child development has been proposed as a necessary addition to other social protection measures (e.g., financial support for families) in the prevention of the intergenerational transmission of poverty (Engle et al., 2011). It has been suggested that social protection measures may provide basic security for families, thus creating the opportunity to intervene with a focus on strengthening family relationships, reducing violent discipline practices, and enhancing positive parenting techniques, among others (Betancourt et al., 2018; Butchart & Hillis, 2016). In line with this, SBSP was made feasible by the previous work carried out by social agents with these families. Such work was focused on ameliorating the families' life conditions, covering basic needs (e.g., housing, feeding), and enhancing security in the neighborhood.

Key Findings

1. An attachment-based parenting intervention, *Strong Bonds, Strong Pikin*, has the potential to be used to enhance sensitivity among mothers from a different cultural background who care for their children under extreme poverty conditions.
2. Intercultural attachment-centered work can benefit from the adaptation of methods used and tested in Western settings (i.e., Video-feedback, psychoeducation, group work).
3. There is a transcultural value to the concept of maternal sensitivity.

Relevance to the Field of Infant and Childhood Mental Health

This pilot study evaluated the feasibility and impact of *Strong Bonds, Strong Piking*, a culturally sensitive, attachment-centered intervention program for the enhancement of sensitivity among mothers living under conditions of extreme poverty in Sierra Leone. More knowledge on this topic can increase our ability to work transculturally from an attachment perspective, to adapt our interventions to different populations, and to promote the protection of children who grow under adverse conditions.

1.1 | Sensitivity and culture

There has been some debate as to whether the construct of caregiver/maternal sensitivity is adequate to the study of parent-child relationships in non-Western contexts. Some authors (Keller et al., 2018; Lancy, 2014) suggest that the construct is only applicable to families in the so-called "WEIRD" (Western, educated, industrialized, rich, democratic; Henrich, 2020) countries. This argument is based on the observation that emotional availability, positive affect, verbal and face-to-face interaction between parent and child (among other aspects that define early parent-child relationships in Western countries) are not present in other cultural groups (Keller et al., 2009). In many non-WEIRD countries, child-rearing is defined more by physical proximity than psychological interaction, by the presence of multiple caregivers instead of a primary figure, and by

parental promotion of obedience and respect for authority instead of focusing on warmth and shared positive affect, among others. The forms that parenting adopts in non-WEIRD contexts seem to be far from what has been traditionally studied in attachment research.

Nevertheless, while it may be true that child-rearing values and practices differ across cultures and social groups, it can be argued that the parents' ability to understand what the child needs and adapt their behavior to those needs is a universal feature of parenting. While the form of caregiving may change across contexts and cultures, some basic functions of caregiving may be considered universal (Ainsworth, 1967; Grossman & Grossman, 2005; Hrdy, 1999; Mesman, 2016b, 2018). Regardless of context, children need to experience a basic contingency between their signals and external outcomes, in order for them to learn the consequences of their behavior and develop basic adaptive skills. In this respect, parental sensitivity may be a basic source of behavior-based contingency learning (Mesman et al., 2018). Another likely universal function of sensitivity is to provide a basic sense of security that may foster the child's exploration of his/her environment, and the development of his/her motor and cognitive abilities, even if this security is achieved by means of culturally diverse strategies (Posada et al., 2016).

Some empirical evidence shows that, despite the relative absence of verbal interaction, non-Western caregivers provide sensitive responses that are mostly based on constant physical proximity (e.g., children tend to be carried by caregivers during daily activities, physical facilitation (e.g., caregivers handle their children when they need a change of posture in order to play or to see what is going on), temporal and intensity adjustment to the child's signals, and multiple caregiving (i.e., children may receive sensitive responses from whomever is close, from a set of relatives and other community members) (Mesman et al., 2018). In these ways, children are soothed when distressed, and their needs are met, even if the specific parenting behaviors differ from those we find in Western contexts. These considerations are supported by empirical observations of child-caregiver interactions in countries as diverse as Peru (Fourment et al., 2020), Kenya (Mesman et al., 2020), Yemen (Alsarhi et al., 2020), with samples characterized by (extreme) poverty. Moreover, across different cultural groups, mothers have described the ideal mother as being close to the child, being able to comfort the child when he/she is sad, or encouraging exploration, among others – features that converge with standardized descriptions of a sensitive mother (Mesman et al., 2016c). This suggests that, despite the diversity of values and practices across separate cultures, there seems to be a universal understanding of children's essential needs in the context of the relationship with their primary caregivers.

1.2 | The Strong Bonds, Strong Pikin intervention

Strong Bonds, Strong Pikin is a 6-week, attachment-based group intervention program with mothers of preschool-aged children (1–6 years) in the context of urban poverty in Sierra Leone. It derives from a family attachment-centered intervention program developed in 2012 and implemented in high vulnerability areas of Madrid and other cities in Spain (Pitillas & Berástegui, 2018). The program is comprised of six 2-h long, twice-weekly sessions with groups of 4–8 mothers from the community. Sessions are conducted by two professionals (also known as *facilitators*). The main objective of SBSP is to enhance maternal sensitivity (i.e., mothers' capacity to detect, interpret and respond adequately and promptly to the child's needs) and mothers' child-rearing abilities (i.e., mothers' ability to set limits in a secure way, to deal with conflict, or to gather support from the community, among others). The full program and its procedure are described in "Strong Bonds, Strong Pikin: application handbook" (Pitillas et al., unpublished manuscript).

Basic theoretical principles and intervention strategies that define SBSP stem from the tradition of attachment-centered intervention programs (Berlin et al., 2016; Juffer et al., 2012; Powell et al., 2013; Slade, 2007; Zeanah, 2009), with a particular emphasis on the use of parent groups to enhance caregiving (see Pitillas & Berástegui, 2021). These programs seek to enhance parental reflective functioning (Slade, 2005) and sensitivity, and they use resources such as group work, video-feedback and a combination of psychotherapeutic and psychoeducational approaches(see Berlin et al., 2016; Pitillas, 2020).

More importantly, the program incorporates considerations that are relevant to non-WEIRD contexts of parenting. The intervention elements are all suited to the parenting values of the context for which the program was designed. For example, when discussing mother-child interactions, we assumed that mother-infant face-to-face interactions are extraneous to the participants' culture and not necessarily a source of security for children (and mothers) in this context. Instead, SBSP focuses on enhancing other types of interaction linked to security, such as well-timed handling of the infant's body. In addition, the program's preliminary design was enriched with practices that are essential to the local culture, by both the authors of the program and the group of local professionals that received training. Techniques based on the native ways of communicating and meaning-making (such as proverbs, story-telling, drama, or singing) were incorporated into the final version of the program as a result of this co-constructive process. In addition, our use of a group intervention setting was in line with values of community life, sharing, and

cooperation. We believe this set of decisions enhanced the ecological fit of the intervention.

The name of the program is in itself a statement of some of its very essential aims. "Pikin" is the word for "children" used in the local language (Kryo). In addition, the term "Strong" intends to connect with one of the main worries related to child-rearing in Sierra Leona. For parents in this context, "making children strong" is a means to ensuring their survival and adaptiveness in an environment marked by violence, unpredictability, and resource scarceness. This is in line with perspectives that emphasize the alignment of parenting with the characteristics of the expected environment (Crittenden, 2016; Simpson & Belsky, 2016). Also, children are raised to become strong so they will be able to care for parents when they are old, something that is in line with "gerontocratic" models of child-rearing (Lancy, 2014). However, this valuing of strength entails the risk of massive use of violent discipline practices, so intervention programs have a special challenge in maintaining balance between meeting the families' cultural values and generating alternatives to potential maltreatment.

Our program is designed to connect with the aforementioned values while enhancing caregiver sensitivity. This convergence is expressed in a basic premise of SBSP, which is shared with parents from the onset of intervention: the most essential source of strength for a young child is a solid sense of connection (a strong bond) with people who care for them, and with a community. Strong bonds help raise strong children.

The main research aim of the current pilot study was to examine whether mothers participating in the SBSP program in an extremely poor area in urban Sierra Leone show increased maternal sensitivity, and decreased parental stress, and lower use of violent discipline practices.

2 | METHODS

2.1 | Participants

Mothers were included in the study if they met the following inclusion criteria: having at least one child of 1–6 years of age; one mother able to commit her/himself to the full intervention; absence of severe mental health conditions (e.g., schizophrenia) or intellectual disability. Initially, 50 mothers were recruited, three dropped out before the pre-test, and two families did not complete the post-test, due to change in location and a death in the family.

Complete information at pre-test and post-test for the sensitivity observations, mother-reported parenting stress, child problems, and use of violent discipline practices was available for the whole sample. The child's age range was

TABLE 1 Characteristics of the sample ($N = 43$)

	Mean	SD
Child's age (range: 1–6 years)	3.44 (41 months)	1.50 (18 months)
Mothers' age	30.41	7.69
No. of children in the household (1–6 years)	2.66	1.45
No. of caregivers for child	2.45	1.15
	Female	Male
Child's sex	49%	51%
	Yes	No
Father living at home	75%	25%

1–6 years old (M = 3.44; SD = 1.50), with 49% girls. Mothers' age ranged from 18 to 49 years (M = 30.41, SD = 7.69), her number of children from 1 to 6 years (M = 2.66; SD = 1.45), and in 76% of the families father was living in the home with mother and child(ren). Including themselves, mothers reported 1–7 caregivers of the child (M = 2.45; SD = 1.15) (see Table 1).

2.2 | Procedure

The basic procedure was implemented through contact and coordination between the three main involved in the SBSP project: Child Heroes (CH), Comillas Pontifical University (CPU), and Don Bosco Fambul (DBF). This consortium included the work of scholars from a European university (CPU), as well as management and support from two NGOs, one of which is based in Sierra Leone (DBF) and includes local experts, and the other in a European capital (CH). Research on the intervention results was done with significant support from the last author, belonging to the University of Leiden.

A team of 12 (50% females) local professionals from Freetown, all fluent in English and Kryo, was assembled for the project. The team was comprised of social workers and a psychologist, and underwent a 2-week training by one of the designers of the intervention (the first author). Training included coding of mother-child interaction videos, role-playing, and other forms of active practice as well as the theoretical foundations of the program. The trainees were instrumental in incorporating the aforementioned tools (e.g., drama, proverbs) that enhanced the ecological fit of the program and led to its final form.

Mothers were recruited from Angola Town, a slum settlement in downtown Freetown, populated by ca. 107 families and 113 minors under 6 years of age who live under

conditions of extreme poverty, without access to running water or sanitation, among others. Selected families attended a general meeting in which the program was presented by main agents of CH and DBF. Almost all families (98%) agreed to participate in the program (only one mother refused, due to reasons that were undisclosed). These families had received previous services by two of the involved institutions (CH and DBF); these services involved housing support, support during a diversity of emergencies, and educational opportunities, among others. Many of the participants were not literate, so consents were read to them in Kryo by a local professional, and they provided a mark as signature. A witness was present during this procedure. Mothers gave written consent for the recording of mother-child interaction videos and for their participation in the program. All study procedures were approved by the Ethics Committee of the university that coordinated this research (CPU).

A pre-intervention assessment process included the administration of a series of questionnaires to mothers as well as the recording of mother-child interactions to assess maternal sensitivity (see below for details). Questionnaires were administered orally (in Kryo) by the program facilitators. Assessments were carried out during the week prior to the start of interventions, and they consisted of two separate sessions, one for the administration of the questionnaire and another for the recording of interactions. An equivalent assessment process was conducted 2 weeks after intervention to test changes among participants.

2.3 | The SBSP program

The SBSP program consists of six sessions of attachment-centered group work with mothers. The following components of intervention are present in each of these sessions: (1). Psychoeducation of basic developmental concepts, which are used to facilitate parents' reflection about their relationship with their children, and as a source of developmental guidance (Lieberman & van Horn, 2008) to enhance parental mentalization; (2). Group work, to create community dynamics of mutual help and support, and to provide a direct experience of connection, protection and mutual recognition (an elemental aspect of secure attachment) (Pitillas & Berástegui, 2021); (3). Video-feedback, to enhance mothers' abilities to detect and interpret their children's attachment and exploration signals; and (4). Storytelling, to facilitate mothers' understanding of their own attachment histories and their impact upon the current relationship with their children, as well as to facilitate the co-creation, within the group, of future caregiving "projects".

Six groups of mothers were run, with an average of eight mothers in each group, over a period of 6 weeks. Each group was conducted by two facilitators (one male and one female in all cases). Mothers attended alone, rather than with their children. In cases where this posed an important problem of family logistics, mothers were helped by the coordinators to find support (e.g., childcare from DBF).

Group sessions included the shared processing of mother-child relational episodes, presentation and discussion of basic developmental concepts, video-feedback, and a final reflection (a 'lesson for the week') that was shared within the group.

The co-processing of relational episodes was facilitated by the application of previously discussed developmental concepts. These concepts dealt with very central themes of attachment and parent-child relationships, and were presented by using local proverbs as a source of reflection (for example, the Kryo proverb 'If a child says his mother won't sleep, he can't sleep either', is used to reflect upon the impact of parents' emotions upon the child's emotional state).

Video-feedback was used with all participating mothers. The recordings used for video-feedback had been recorded in a naturalistic setting before intervention (i.e., the child in daily interaction with their main caregivers, other relatives, and peers, at home or outside). They were used as a tool to illustrate concepts that had been presented in previous sessions, as well as a means to review significant interactions with a focus on the child's signals, the mothers' interpretations of those signals, and the interactive patterns that emerged from this signal-interpretation system.

At the end of each session, participants were invited to derive a 'lesson for the week'. This comprised a discovery or feeling that was significant for each mother, and that entailed a new way of feeling or doing in the relationship with the child (e.g., 'I can see now that my son needs me more than I thought'; 'I want to stop and try to understand what my daughter needs, before responding')

3 | MEASURES

3.1 | Maternal sensitivity

Ainsworth's 9-point rating scale for sensitivity (Ainsworth et al., 1978) was used to evaluate maternal sensitivity during 5-min free play sequences that were videotaped at the center where the intervention took place. The maternal sensitivity scale yields a score that places each caregiver on a scale between 1 - highly insensitive ("responds insensitively almost all of the time, sensitive responses are extremely rare or absent") and 9 - highly sensitive ("virtually always responds sensitively, and any lapses are

extremely rare and very small"). Mothers and children were presented with a diverse set of toys that were suitable for the whole age range, and mothers were instructed to play with their child as they would usually do. Two trained coders (the first and last author) completed a reliability set of 14 videos (35% of the total sample of videos), yielding high inter-rater reliability (.90 – intraclass correlation, single rater absolute agreement). Afterwards, each coder scored half of the pretest and half of the posttest of the remaining videos, so that the two assessments were independently coded. Coders were blind to the pre-test or post-test nature of each video.

3.2 | Parenting stress

The first two subscales of the Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995) were used to assess stress related to parenting among the participating mothers: Parenting Stress (PS; e.g., "I feel trapped by my responsibilities as a parent", "I feel lonely and without friends"); and Parent-Child Dysfunctional Interaction (PCDI; e.g., "Sometimes I feel my child doesn't like me and doesn't want to be close to me", "When I do things for my child I get the feeling that my efforts are not appreciated"). Each subscale consists of 12 items rated from 1 (strongly disagree) to 5 (strongly agree), with subscales scores ranging from 12 to 60. This instrument has been used in numerous studies with vulnerable populations and has shown good reliability and validity (Aracena et al., 2016; Barroso et al., 2016; Haskett et al., 2006; Lee et al., 2016; Whiteside-Mansell et al., 2007). A total score was computed by summing the item scores and dividing the sum by the total number of items, resulting in an average item score. The internal consistency (Cronbach's alpha) of these 24 items was .65 in the current sample, which is adequate.

3.3 | Child problems

A list of common child problems and sources of worry for parents was established after developing focus groups with local professionals and families in the study region. This method was used to gather difficulties that are significant within the cultural context where this research took place. A final list of 15 worrying behaviors or child problems was established after reviewing the material from the focus groups. Child problems were reported by mothers using this questionnaire at both pre-test and post-test. The questionnaire consists of 15 culturally-relevant problems (e.g., "Child is never calm"; "Does not like to interact with others"; "Talks badly to adults") scored on a scale

of 1 to 3: 1 (not true), 2 (somewhat true), 3 (very true or often true). The internal consistencies (Cronbach's alphas) of the 15 items were low at .51 (pre-test) and .58 (post-test). Two separate principal component analyses of the pre-test and post-test items revealed very different factor structures between the two assessments. Forcing the items onto a single factor also did not reveal a clear core set of items with relatively similar loadings across the pre-test and post-test, with some items even loading in the opposite direction at pre-test compared to post-test. Because of these unclear factor structures, analyses will be conducted using the original total scores for all items (average item score), and we will return to the internal consistency issues in the Discussion section.

3.4 | Violent discipline

To assess violent discipline a 10-item list of discipline practices from the UNICEF Multiple Indicator Cluster Survey (MICS; UNICEF, 2015) was used. Items were binary (0 = No, 1 = Yes), based on the presence of physical and violent discipline strategies, including "Shaking the child"; "Beating him/her up, hitting him/her as hard as one could"; "Not giving him/her food"; or "Hitting him/her with something like a belt, hairbrush, stick, or another hard object", among others. UNICEF has worked with the MICS combining these items into a general score of "violent discipline" (Cappa & Khan, 2011). A final binomial item assessing mothers' belief in punishment as an essential aspect of child-rearing was added to the 10 main items. Internal consistencies (Cronbach's alphas) were .63 at pre-test and .60 at post-test.

4 | RESULTS

Table 2 shows the descriptive statistics for each observed sensitivity, mother-reported parenting stress and child problems at pre-test and post-test. Figures 1(a) and (b) show the frequencies of Ainsworth sensitivity scores at pre-test and post-test, and reveal rather low sensitivity levels at both time points (many mothers scoring below 5 'more sensitive than insensitive'), although the distribution shifts to a higher score range from pre-test to post-test. The average change in sensitivity from pre-test to post-test was 1.05 (SD = 2.27), with 25 mothers an increase in sensitivity, nine mothers showing a decrease, and nine mothers no change. Table 2 shows the results of paired-sample t-tests examining pre-post-test differences, and reveals a significant increase in observed maternal sensitivity, and a significant decrease in mother-reported parenting stress, child problems and violent discipline practices.

TABLE 2 Means (SD) for sample characteristics, and pre- post-test comparisons (N = 43)

	Pre-test	Post-test	Difference pre-post
Observed sensitivity	3.88 (1.63)	4.93 (2.25)	$t(42) = -3.03, p < .01$
Parenting stress	2.96 (.42)	2.19 (.60)	$t(42) = 7.24, p < .01$
Child problems	1.81 (.26)	1.45 (.23)	$t(42) = 6.53, p < .01$
Violent discipline	.47 (.19)	.09 (.12)	$t(42) = 10.67, p < .001$

A

B
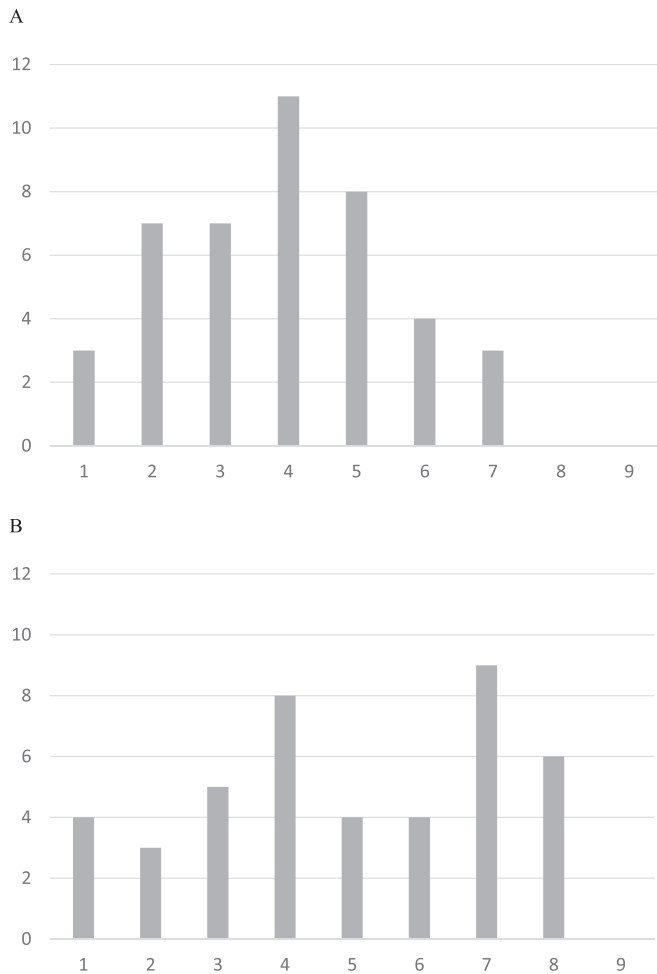
FIGURE 1 (a): Frequency of sensitivity scores (1–9) at pre-test (N = 43). (b): Frequency of sensitivity scores (1–9) at post-test (N = 43)

TABLE 3 Results of K-cluster analysis examining correlates of pre-post change in observed sensitivity (N = 42)

	Cluster 1 (n = 25)	Cluster 2 (n = 17)	Cluster diff. (p value)
For all variables: 0 = no; 1 = yes			
Sensitivity increase	.76	.29	.002
Parenting stress decrease	.88	.88	.982
Child problems decrease	.92	.88	.692
Violent discipline decrease	.88	.94	.519
Male child	.40	.71	.053
Child older than 3 years	.12	.76	.000
Mother older than 29 year	.24	.94	.000
More than one sibling	.44	.53	.580
More than two caregivers	.36	.53	.287
Father resident	.92	.53	.003

Note: Because all variables were dichotomized into 0–1 variables (absent vs. present), the values in the cluster columns can be read as proportions. Three missing values for mothers' age were imputed by the average age of other mothers in the sample with a child of the same age and the same (or similar) number of children.

To examine patterns of family characteristics that cluster with different levels of changes in sensitivity from pre-test to post-test, a k-means cluster analysis was conducted. This procedure employs an algorithm that identifies relatively homogeneous groups of cases based on selected characteristics. The results of this analysis are presented in Table 3, and reveal two clusters of N = 25 and N = 17. The results of the ANOVAs shown in the final column of Table 3 reveal that Cluster 1 (compared to Cluster 2) is characterized by a higher positive change in sensitivity levels, younger children, younger mothers, somewhat more female children, and more resident fathers. Number of siblings and caregivers, changes in parenting stress, changes in child problems, or changes in violent discipline did not significantly distinguish between the two clusters. Finally, the correlations between the four change variables (pre-post) were calculated, revealing significant associations between decreases in parenting stress and violent discipline ($r = .48, p < .01$), and decreases in parenting stress and child problems ($r = .77, p < .01$). Changes in observed sensitivity were not related to changes in any of the self-reported variables (parenting stress, child problems, violent discipline).

5 | DISCUSSION

This pilot study presents preliminary evidence of the feasibility and positive impact of *SBSP*, a culturally sensitive, attachment-centered intervention program for the enhancement of caregiver sensitivity among families living under conditions of extreme poverty in urban Sierra Leone.

The main finding of the current study is that mothers were significantly more sensitive in their interactions with their children, and reported lower levels of parenting stress, child problems, and violent discipline at posttest compared to pretest. Families in which the mothers showed an increase in sensitivity were characterized by younger mothers, younger target children, and present fathers compared to those who did not improve in sensitivity. These findings are promising for targeted intervention efforts, as they suggest that early intervention, when mothers and children are young and fathers (still) present, can be successful in changing the family dynamics, possibly preventing exacerbation of parenting problems. It would seem that mothers who were older, whose children were older, and who had to parent their children without the presence of father may face more challenges and/or more complex situations (e.g., raising a child under the stigmatizing effect of being single). Future research will need to explore the differential effects of these variables. Moreover, research should test whether the families who seem to be more vulnerable should be served by interventions that integrate relationship building with behavior-based contingency learning (based on Patterson's coercion theory; Patterson, 1982), as has been suggested by previous research (Leijten et al., 2019).

Decreases in sensitivity did not go together with decreases in self-reported parenting and child characteristics, confirming earlier findings that observations yield very different information than self-reports. Changes in the self-reported variables did show significant overlap, suggesting that mothers quite consistently reported more positive and less negative family functioning. The reduction in the self-reported domains of problems was almost complete, with only four or five mothers not reporting a decrease in each of them. However, some of this may be due to socially desirable answering. Having followed the intervention program, mothers may have caught on that the parenting qualities that were valued by the facilitators (who were the very professionals that collected the data, both pre- and post-intervention) did not include harsh strategies, for example. This may in part account for the positive parental ratings that are not backed up by observational data. Although this could also be true for the reported decreases in parenting stress and child problems (mothers realizing that these were aims of the program and wanting to please the facilitator), these seem a little less obviously influenced by social desirability. The lack of association between changes in observed sensitivity and self-reported parenting problems may also reflect individual differences in the extent to which (or the speed with which) certain changes are generalized across domains. Parenting stress may decline before sensitivity increases, or vice versa. Observations of all relevant variables would be needed to gain more insight in observable changes in family functioning.

The preliminary support for the effectiveness of the SBSP speaks to the value of its approach, which includes psychoeducation, group work, video-feedback, and storytelling as means to enhance caregiver sensitivity. Psychoeducation reduces parental anxiety and enhances sensitivity by means of providing information about early childhood, basic developmental needs and the emotional aspects of child-rearing. It has been used in the context of child-parent psychotherapies with families from a diversity of cultural backgrounds (Berlin et al., 2016). Video-feedback provides a means for parents to review their relationship with their children from a stance of security and reflection. With video-feedback, parents develop new ways of seeing their children and themselves and, most importantly, their sensitivity to subtle clues of interaction is enhanced (Fukkink, 2008; Schechter et al., 2006; Steele et al., 2014). Storytelling was used very frequently for parents and facilitators to review significant relational episodes that took place daily, to enrich the mothers' narratives about their children, and to generate a sense of cooperation and community within the intervention. By means of proverbs, drama and the cooperative narration of experience, these mothers were more able to stop and think about their relationship with their children, their own attachment history, and what they wanted to provide their children with in the long term. Our approach recognizes earned security (Phelps et al., 1998) as an essential source of change, and thus uses groups to tap into the local valuing of community life, and to facilitate new, secure experiences of relatedness (Pitillas & Berástegui, 2021).

These components may impact differently upon parenting and be perceived in diverse ways among mothers who benefitted from the intervention. Therefore, collection of parental feedback and satisfaction data on the various components of the program will be needed as part of future feasibility studies. Qualitative exploration of parents' experiences with the program may also help us understand whether the decreases in parenting stress were partly related to some of the group processes that facilitators try to activate within SBSP (e.g., mutual support, shared regulation of difficult affects, celebration of achievements, etc.).

In spite of the significant increase in sensitivity from before to after the intervention, maternal sensitivity levels remained low overall, which merit attention in further research. More qualitative analyses could be employed to see in which areas sensitivity improved and where challenges remained. The increased but still quite low sensitivity levels also suggest that maternal attention to the child's social-emotional needs remains compromised in a context that continues to be characterized by harsh socioeconomic conditions. It could be argued that, under more favorable conditions, the positive impact of intervention would be translated into sensitivity levels closer to the 'adequate' level (scores 5–6 onwards). Also, a question can be raised about the dosage of intervention: the program took place within a short time span (3 weeks), something that could account for the low levels of sensitivity overall. Do these mothers need a bigger (or more protracted) dose of intervention? Future studies should address this question.

The proof of the pudding would also need to be in positive effects on child development, which were only measured by mother reports in this study and were unrelated to sensitivity levels. Maybe more precise measures would have captured improvements that were linked to sensitivity increases. Alternatively, it could be that sensitivity as the main (or only) target for intervention and outcome indicator is not appropriate for this cultural context. Maybe, other dimensions of child-rearing, articulated around different values, need to be considered. Assessing sensitivity by means of a 5-min free play interaction is not ideal due to its short and non-naturalistic nature. Future studies would ideally include coding of naturalistic interactions over a longer period of time (Asanjarini et al., 2021; Fourment et al., 2020; see also Mesman et al., 2016a).

Finally, we believe that proof of positive effects on child development would also entail a longer follow-up, and could also involve teaching specific parenting skills to families.

Here, we also want to come back to the low internal consistency of the child problems scale, and the lack of a consistent factor structure across pretest and posttest. The decision for not using other validated measures of this variable stemmed from the intention to prevent cultural bias in our assessment. However, although the items were developed in close collaboration with local partners, they do not appear to show a coherent pattern across time. This measure will need to be evaluated, adapted, and piloted (again) before using it in other studies.

Reflecting on the limitations of our study, and avenues for future research, we want to emphasize the preliminary nature of the current analyses and their results. The small sample size, the lack of a randomized design, and the marginal internal consistency of some of the mother-report measures mean that the results need to be inter-

preted with caution. Future studies that address these issues are needed to gain more insight into the potential value of the SBSP in improving family life in urban poverty-stricken regions in the non-Western world.

Despite its limitation, the current study is unique in studying a locally co-created parenting intervention program based on attachment theory principles in a West-African urban slum setting, using video observations and a pre-post design. Co-designing the final version of the program with local professionals yielded methods and an intervention philosophy that would not have been achieved otherwise. The use of proverbs, song or drama, among others, resulted from this fruitful interchange. This helped facilitators overcome limitations in literacy and introspections (two factors that we often taken for granted when intervening with Western families). In addition, the program's ability to acknowledge and speak within the mothers' cultural codes may have been useful in generating fruitful conversations about physical punishment (which is central to child-rearing in this context, as recent evidence provided by Pengpid and Peltzer (2020) has shown) and opening these dialogues to the consideration of alternatives to such practices. As our analyses show, the program's results are very promising and suggest that this is a worthy avenue for further study. Generally, it appears that this philosophy of intervention was instrumental in generating interest and positive responses from mothers who participated in the program.

Overall, and despite the limitations of the current research, we believe that these results speak of the transcultural value of the sensitivity concept and the value of preventing the effects of severe disadvantage upon children by focusing on parent-child relationships. Designing tools that use the same social-emotional codes as families in each context, and collaborating with local agents in the implementation of these programs, seem promising strategies for the development of sensitive child protection measures. More research will need to confirm if these elements—or which of them especially—are useful in helping mothers to develop forms of caregiving that are safer and, at the same time, embedded in local understandings of the parenting role.

CONFLICT OF INTEREST
The authors confirm that there are no conflicts of interest associated with this publication.

DATA AVAILABILITY STATEMENT
The sharing of our data could compromise our ethical/legal commitments towards the subjects (mothers and children) of our study. The material we have worked with (videotaped mother-child interactions) is sensitive in terms of confidentiality and minor protection issues.

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