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An explanatory model of parental sensitivity in the mother–father–infant triad

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Abstract

Quality of early family interactions has been associated with child development, bonding, and mental health. Childhood adversity, stress, and depression impact parenting, affecting the quality of the interaction within the mother-father-child triad. The aim of the present study was to analyze the influence of parents' adverse childhood experiences, depressive symptoms, and parental stress, on their sensitive response toward their tooddler and quality of traidic interactions. A correlational cross-sectional method was used. The sample included 80 mother–father–child triads, of toddlers with social–emotional difficulties. Parents early adverse experiences, parental stress, and depressive symptoms were assessed through self-report measures. Observational measures on parental sensitivity and triadic interaction were used. For mothers and fathers, adverse childhood experiences were associated with depressive symptoms in adulthood. Sensitivity toward their child and stress were positively associated among both parents. Symptoms of depression in mothers were associated with lower sensitivity toward their child, but in fathers, their sensitive response was influenced by the level of parental stress in the mother. In both parents, greater sensitivity in the dyadic interaction with the child was associated with a higher quality of the triadic interactions, in the triad as a whole, and in the regulation and involvement of the child.

KEYWORDS
parental mental health, parental sensitivity, triadic interaction

1 | INTRODUCTION

1.1 | Sensibility and triadic interaction during early parenting

The influence of dyadic interactions quality on child development and mental health has been well-documented in the literature, mainly alluding to mother–child interactions (Bouvette-Turcot et al., 2017; Salomonsson et al., 2015). In this context, the concept of parental sensitivity is especially relevant. Parental sensitivity refers to the parents' ability to perceive and accurately interpret the child signals and respond to them in an appropriate and contingent manner (Ainsworth et al., 1978). This concept has been widely revised and is associated with the attachment patterns that the infant develops toward both parents (Manning, 2019; Planalp & Braungart-Rieker, 2013; Zeegers et al., 2017). Studies show that maternal sensitivity contributes to positive child development (Bouvette-Turcot et al., 2017), specifically socio-emotional

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development (Riera, 2016) and mental health (Sidor et al., 2013).

Although the concept of parental sensitivity has been relevant for understanding early dyadic relationships, interactions during this period are not exclusively dyadic and usually include a second primary caregiver. That is, a triangular relationship between the two parents and their child (Fivaz-Depeursinge, & Corboz-Warnery, 1999). The participation of a third party modifies the dyadic dynamics, generating more complex interactions and enrichening the socio-emotional experience of the participants (Leidy et al., 2013; Teubert & Pinquart, 2010). It has been described that the ability to interact in a triadic setting constitutes one of the main developmental tasks for an autonomous self and the acquisition of social skills (Fincham, 1998; Sroufe, 1996).

Triadic interactions allow three people to learn to share affection, attention, and common goals; and also, to learn to deal with feelings of exclusion. All of which are necessary for the development of more complex interpersonal skills (Liszkowski et al., 2004; Fivaz-Depeursinge, & Corboz-Warnery, 1999).

Studies have shown that fathers and mothers with high parental sensitivity exhibit more cooperative and functional triadic interactions (Tissot et al., 2016, 2015). Additionally, affection and complicity between the parents, during their children's infancy, constitute a protective factor for parental practices (Shapiro et al., 2000). Fathers and mothers who receive high levels of support show greater sensitivity toward their children, and these children present less behavioral difficulties (Bernier et al., 2014). On the contrary, the participation of a child in conflictive family interactions has been associated with flawed regulatory mechanisms, difficulties in conflict management, and relationships with peers (Cummings & Davies, 2010; McHale, 2007). For example, the presence of maternal depressive symptoms decreases levels of reciprocity, synchrony, and coordination in mother–infant interaction, affecting the dyadic and triadic capacity to facilitate affective regulation (Feldman, 2007).

Parents' ability to share tasks associated with parenting, provide support and show commitment, is defined as positive co-parenting, which favors child development (McHale & Kuersten-Hogan, 2004). On the contrary, competitive and hostile co-parenting has been associated with internalizing and externalizing symptoms in children (Elliston et al., 2008). Since different elements of the family system are interconnected (Le et al., 2016), the couple subsystem influences co-parenting quality (Durtschi et al., 2016), and parenting affects the psychological functioning of the parents and the general well-being of the child, as well (Oronoz et al., 2007).

Relevance

The quality of early family interactions at dyadic and triadic levels impact child development, bonding, and mental health. Parental childhood experiences impact parental mental health, which impacts the quality of parenting in both mothers and fathers. It is necessary to consider the dynamic influences between members of a family to achieve a better understanding of its functioning and impact on the emotional well-being of each of its members. This is of great value to inform interventions that promote the well-being of their individuals considering dyadic and triadic perspectives.

1.2 | Depression, stress, and early parental adverse experiences

Previous studies have shown that some individual characteristics of the parental dyad can have a negative influence in the quality of interactions with their children, as it occurs with depressive symptoms (Salomonsson & Sleed, 2010; Parsons et al., 2017) and a history of adverse childhood experiences, which are often at the root of depression (Lomanowska et al., 2017, Cicchetti & Rogosch, 2001; Heim et al., 2008; Nemeroff, 2016). These early adverse experiences, in some cases, have a negative impact on the ability to understand and properly process the childs signals (Hiraoka & Nomura, 2019). An impact on behavior and brain development has also been described (Schore, 2010), as well as the alteration of neurochemical processes that increase activity levels in the hypothalamic–pituitary–adrenal axis, involved in the regulation of reactions to stress (Heim et al., 2008). Adverse childhood experiences have also been associated with long-term effects on relational abilities, which may restrict parents' capability to build healthy interactions and bonds with their children (Alexander, 2015). Accordingly, studies have shown that physical neglect and emotional abuse during childhood have significant effects on adult abilities for caring for their children (Bottos & Nilsen, 2014; Kwako et al., 2010; San Cristobal et al., 2017). Furthermore, early parenting can activate adverse childhood experiences that negatively interfere with the parental role (Slade et al., 2009).

In Chile, approximately a third of the adult population has a history of adverse experiences during childhood (Zlotnick et al., 2006) and between 50% and 80% of the individuals who seek mental health treatment for a depressive disorder report to have had at least one adverse

experience during their first years of life (Vitriol et al., 2014). Another study conducted with a clinical sample showed that the prevalence of adverse experiences during childhood reached 82% (Vitriol et al., 2017). In line with these findings, Ballesteros et al. (2007) found that Chilean depressed women who reported several adverse experiences during childhood present more severe symptoms and interpersonal difficulties; which supports the association between symptoms of depression and early family interactions.

Regarding depression, international studies show that between 6% and 38% of women suffer from depression during or after childbirth (Field, 2011). In developing countries such as Chile, perinatal depression is twice as prevalent, with a higher prevalence in low-income women (Alvarado et al., 2000). As for maternal postpartum mental health, 40% of mothers experience anxiety and/or depressive symptoms during this period (Chile MINSAL, 2013) and 19.2% of Chilean women experience major depression at 3 months postpartum (Chile MINSAL, 2013). A recent meta-analytical study, which analyzed the prevalence of postpartum maternal depression in 56 countries, placed Chile in the first place (38%), associating the figure with income inequality (Hahn-Holbrook et al., 2018).

Regarding the effects of maternal depression, a negative impact has been reported on the quality of mother–infant interactions, showing lower synchronic interaction and greater avoidance, crying, and negative affect in the child. Also, maternal depression has been associated with reduced confidence in mothers' parental role (O'Higgins et al., 2013; Zietlow et al., 2014). Consistently, a recent meta-analysis showed that mothers with higher levels of depression show less sensitivity toward their children than those with lower levels of depressive symptoms (Bernard et al., 2018). This is also reflected in a higher incidence of insecure childhood attachment, especially in children of mothers with severe and chronic depression (McMahon et al., 2006). Additionally, depressive symptoms have been associated with parental difficulties to correctly identify emotions in themselves and in their children and to mentalization difficulties, which negatively contribute to the development of positive parent–infant interactions (Belvederi et al., 2017; Mattern et al., 2015).

Effects of depression on early parenting have been widely described in mothers, and to a much lesser extent in fathers. Yet, it has been shown that depressive symptoms can enhance conflict by reducing parental cooperation and decreasing co-parenting quality (Tissot et al., 2017). Regarding the contribution of paternal mental health, some studies indicate that it could play a protective role for the child, by reducing the association between maternal and child depressive symptoms (Gere et al., 2013).

Recent studies report a prevalence between 1.8% and 47% of depression in fathers between the first trimester and the first postpartum year (Cameron et al., 2016; Pérez et al, 2017) showing specific symptoms such as increased hostility, open conflict confrontation, frustration, and substance abuse (Morales et al., 2018). Paulson & Bazemore (2010) reported that 10.4% of new fathers experience anxiety and/or depressive symptoms.

There is also evidence that shows an association between maternal and paternal depression when parents are a couple (Paulson & Bazemore, 2010). Still, further studies are required to deepen the understanding of the role of parental depressive symptoms in early family interactions.

Regarding the effects of paternal depression in the interaction with their young children, depressed fathers show reduced sensitivity, less verbal communication, difficulties on emotional recognition, and a critical attitude toward the child, when compared to nondepressed fathers (Koch et al., 2019). From the child's perspective, paternal depression has been associated with a greater risk of development and behavioral problems in their child (Sweeney & MacBeth, 2016; Gentile & Fusco 2017). Interestingly, studies that review the quality of co-parenting and its relationship with parental depressive symptoms show that only in mothers does the quality of co-parenting mediates the relationship between their depressive symptoms and the child symptoms. This association has been not observed in fathers (Tissot et al., 2016).

Stressful experiences while raising young children have been identified as risk factors for the development of maternal depressive symptoms (Leigh & Milgrom, 2008; Manuel et al., 2012; Nærde et al., 2000). Different domains that can cause maternal stress have been described, including stress related to the parental role and stress related to the child domain, such as perceptions of how difficult the infant is, as well as stress related to mother–child interactions. Among these domains, the one that has shown a more consistent association with maternal depressive symptoms is stress related to the parental role (Cornish et al., 2006; Horowitz & Goodman, 2004; Misri et al., 2006; Sidor et al., 2011). On the other hand, stress related to the perceptions of how difficult the infant is, as well as stress related to mother–child interaction have shown mixed results, some confirming this association (Britton, 2011; Cornish et al., 2006; Mason et al., 2011; McGrath et al., 2008; Sidor et al., 2011) and others showing no association at all (Pritchard et al., 2012). Feelings of incompetence and problems in the marital relationship have also been relevant variables for the understanding of parental stress and depressive symptoms in young children's parents (Johansson et al., 2017). On the other hand, partner and instrumental support have been shown

to act as potential protective factors to reduce the negative effects of stress and depression (Manuel et al., 2012).

1.3 | The current study

The present study was conducted in Chile, where—as in many Latin American countries—traditional gender roles are still common and where women often have caregiving roles (PNUD, 2019). A national study conducted in Santiago, the capital city, showed that 71% of the unpaid workload is women's responsibility (SERNAM, 2009). Although women's participation in the workforce has dramatically risen over the past years, men's involvement in caregiving activities has slowly increased and their participation in domestic chores is still limited (Barker & Verani, 2008). This is consistent with an earlier study, which highlights the importance attributed to motherhood in Chilean women's lives and the high-value women often place on providing care and being responsible for their children (Pérez & Jaramillo, 2009), especially during the first years of their lives.

The aim of the preset study is to analyze the influence of parents' adverse childhood experiences, depressive symptoms, and parental stress on the sensitive response toward their 1–3-year-old children, who presented socioemotional difficulties and to analyze the association of these parental variables with the quality of the participants' triadic interactions.

It was hypothesized, through a theoretical model, that parental adverse childhood experiences would be positively associated with depressive symptoms in parents, and that the more elevated the depressive symptoms reported, the lower the degree of parental sensitivity in the parents' interaction with their child. Considering the elevated comorbidity that exists between anxiety and depressive symptoms, the effect of anxiety symptoms could have on parental sensitivity was controlled by including it as a covariable. Additionally, it was hypothesized that the sensitive response in the mother/child and the father/child interaction would impact the functionality of the interaction in the different subsystems of the triad (see Figures 1 & 2). Finally, when specifically considering the role that mothers and fathers play, the previously reported evidence would allow us to hypothesize that most of the model applies to both parents. However, since paternal depressive symptoms are expressed through specific symptoms such as greater hostility, open conflict confrontation, frustration, and substances abuse (Morales et al., 2018), and not only mood alteration and loss of interest or pleasure, it was hypothesized that in fathers, the proposed general model would present some particularities.

2 | METHODS

2.1 | Design

The study is a secondary data analysis of the baseline measurements of a project that assessed mother–father–child triads pre- and post-video-feedback intervention (FONDECYT de Iniciación N°11140230, National Commission for Scientific and Technological Research, CONICYT, Chile).

2.2 | Participants

Families with children (1–3 years of age) who presented socio-emotional difficulties assessed by the ASQ-SE (Squires et al., 2002) from Santiago, Chile, were recruited to daycare and public health centers or referred by other participants. A total of 80 mother–father–toddler triads participated in the study.

The inclusion criteria for the study were: adult parents (≥18 years old), currently in a heterosexual relationship that have a child age 12–36 months, with socio-emotional difficulties reported by parents or the referrer. Difficulties were related to behavioral, sleep, eating, emotional, and/or relational difficulties. Parents with diagnosed psychosis and/or addictions and parents or children with disabilities were excluded from the study.

The sample is composed by 80 triads of 80 children (32 girls, M_{age} = 24.73 months, SD = 7.35) and their parents (mothers: M_{age} = 32.26 years, SD = 4.97; fathers: M_{age} = 34.66 years, SD = 6.34). In Table 1, sociodemographic information of the participants is described.

2.3 | Measures

2.3.1 | Personal information sheet

This sheet was used to collect families' sociodemographic information such as the child's age, gender, birth order, and number of siblings, as well as parents' age, years of education, employment situations, and history of psychological/pharmacological treatment.

2.3.2 | Beck Depression Inventory, BDI (Beck et al., 1961)

This is a self-report questionnaire composed of 21 items. It evaluates current depressive symptoms. In each item, the individual must choose the phrase that best describes his or her emotional state over the previous week, from

TABLE 1 Descriptive sociodemographic information ($N = 80$)

Variables	M (SD)
Mothers	
Age (years)	32.26 (4.97)
Education (years)	14.96 (2.67)
Full-time payed job (%)	48.8%
Fathers	
Age (years)	34.66 (6.34)
Education (years)	15.09 (2.52)
Full-time payed job (%)	93.8%
Children	
Age (months)	24.73 (7.35)
Gender (%)	
Boy	60%
Place of birth among siblings (%)	
First	71.3%
Second	20%
Third or more	8.7%

a set of four alternatives, ordered from lowest to highest severity. Each item is score in a 0–3 point scale, with total scores varying from 0 to 63. Higher scores indicate greater depressive symptoms. Adequate reliability has been reported on the Spanish version of the instrument, applied to patients with psychological disorders, obtaining a Cronbach alpha value of.90 (Vásquez & Sanz, 1999). The instrument has been validated in Chilean samples with an appropriate degree of internal consistency (Cronbach alpha = .92) and both exploratory and confirmatory factor analysis suggested a one-factor solution (Valdés et al., 2017). The Cronbach-alpha value obtained in the present study was.83 for mothers and fathers.

2.3.3 | Parenting Stress Index—Short Form, PSI-SF (Abidin, 1995)

It is a 36-item, self-report measure of parenting stress. It includes three subscales: Parental Distress (PD), which assesses the discomfort experienced by the individual in the exercise of the parental role and the restriction associated with it (e.g., "I feel trapped by my responsibilities as a parent"), Parent–Child Dysfunctional Interaction (PCDI) captures the perception of the parent regarding the fulfillment of their expectations by the child, the reinforcement they provide as a parent and the extent to which they feel accepted and close to their child (e.g., "When I do things for my child I get the feeling that my efforts are not appreciated"), and Difficult Child (DC), focuses on the parent's view of the child's temperament, defiance, noncompliance, and demandingness. (e.g., "My child makes more demands on me than most children," "My child gets upset easily over the smallest thing"). Each subscale consists of 12 items rated from 1 (strongly disagree) to 5 (strongly agree), with subscales scores ranging from 12 to 60. A total score is calculated by summing the three subscales, scores ranging from 36 to 180. Scores of 90 or above may indicate clinical levels of stress. Abidin (1995) reported Cronbach's alpha coefficients of .87, .80, and .85 for PD, PCDI, and DC subscales, respectively. The Chilean validation of the instrument was done by Aracena et al. (2016), who reported a structure compatible with the original instrument, with three factors and adequate internal consistency (PD: $\alpha = .81$; PCDI: $\alpha = .89$; DC: $\alpha = .88$). In the present investigation, adequate levels of reliability are reported in mothers (PD: $\alpha = .87$; PCDI: $\alpha = .80$; DC: $\alpha = .87$) and fathers (PD: $\alpha = .78$; PCDI: $\alpha = .80$; DC: $\alpha = .83$).

2.3.4 | Childhood Trauma Questionnaire-Short Form (CTQ-SF)

The CTQ-SF (Bernstein & Fink, 1998) is a 28-item retrospective self-report questionnaire assessing adverse experiences when growing up. Each item is scored on a 5-point Likert scale (1 = never true to 5 = very often true). Three items compose the Minimization/Denial scale designed to detect socially desirable response style (false negatives). The other 25 items are divided into five clinical subscales, with five items each: Emotional Abuse (EA, e.g.,: "I felt that someone in my family hated me"), Physical Abuse (PA, e.g.,: "I was punished with a belt, a board, a cord, or some other hard object"), Sexual Abuse (SA, e.g.,: "Someone molested me"), Emotional Neglect (EN, e.g.,: "I felt loved," reversed score), and Physical Neglect (PN, e.g.,: "I didn't have enough to eat"). Each of the five clinical subscales' scores can range from 5 to 25. Scores on the 25 items can also be summed to produce a total CTQ-SF score. In this study, the Spanish version was used, Cronbach's α coefficients ranged from.66 for EN to.94 for SA (Hernandez et al., 2012). Chilean version of the CTQ-SF demonstrated an acceptable fit to a five-factor model, discriminant validity and reliability (from.41 for EN to.94 for SA) in a clinical sample (Behn, et al., 2020). In the present study, Chronbach's alpha for the total scale was .91 for mothers and .89 for fathers.

2.3.5 | CARE-Index, Experimental Index of Child–Adult Relationships (Crittenden, 2006)

The instrument uses a 3–5-min video recording of play interaction between the child and the adult. The coding system includes three descriptors for the adult, that

is, sensitive, controlling, and nonresponsive, and four for the infant, that is, cooperative, difficult, compulsive, and passive. It also includes a dyadic sensitivity scale that ranges from 0 to 14 points, with 0–4 signaling "risk," 5–6 "suggest the need for parental education," 7–10 "adequate," and 11–14 "sensitive" interaction; scores below 7 indicate the need for intervention. The video coding was performed by psychologists trained by the author of the instrument and reached a reliability of ≥.7 in the various scales used. The inter-rater reliability between the three coders who participated in the study was kappa = .83 ($p < .001$).

2.3.6 | Lausanne Triadic Play (LTP) (Fivaz-Depeursinge & Corboz-Warnery, 1999)

This instrument uses a semi-structured procedure for the observation and evaluation of triadic family interaction. The triadic interaction is videotaped. Parents are instructed to play as they typically do, but following a four-step structure: (1) the mother or the father actively plays with the child while the other adult is "simply present"; (2) parents switch roles; (3) the father, the mother, and the child play actively; and, (4) finally, parents interact among them while the child is present. The three participants are placed in an equilateral triangle, with three seats and a table in the center. Three sets of three small toys (puppets, cups, and animals) were used to facilitate symbolic play and the development of co-constructed activities. The family interaction is videotaped with two cameras, one facing the parents' body and face and another the infants' body and face. The family is informed that they have between 10 and 15 min in total to perform the four stages and that they themselves regulate the distribution of time through a clock located in a visible place for both parents. The family interaction was analyzed with the Family Alliance Assessment Scales (FAAS; Lavanchy et al., 2013). This instrument measures triadic and two subsystems interactions: (a) *the triad as a whole*, assessing the participation and organization during the activities, focus, and co-construction of the task, parental support towards the child, errors in communication and if the activity takes place in the climate of warmth, validation, and authenticity. (b) *The coparenting dyad*, which considers only the members of the parental dyad, capturing support, cooperation, and their ability to resolve conflicts; and (c) *the child*, assesses the child's participation in the interaction, based on their involvement, motivation, and capacity for self-regulation. The triadic dimension scores range from 0 to 22 points and coparenting and child involvement dimensions scores range from 0 to 4 points. Also, the Triadic Total Score (not used in this study) is calculated through the sum of the three dimensions, ranging from 0 to 30 points, and offers information on the functionality of the interaction. Studies conducted by the Lausanne team reported mean scores of 19 points in a normative sample and 10.3 in a clinical sample (Favez et al., 2011). In Chile, one study reported an average of 10.09 in a nonclinical mid and low socioeconomic status population (Pérez et al., 2017). The FAAS showed moderate-to-good interrater reliability, $\kappa = .61–.90$, $p < .05$ (Favez et al., 2011). Three coders who trained with the developers of the FAAS in Switzerland evaluated the videos. Twenty-five percent of the videos were coded three times to calculate the interrater reliability for family scores, which was found to be excellent (intraclass correlation coefficient, ICC = .97).

2.4 | Procedure

This study was certified by the ethics committees of the Pontifical Catholic University of Chile and the National Commission for Scientific and Technological Research (CONICYT).

Families were recruited through professionals from JUNJI (National Board of Preschools of the Ministry of Education of the Government of Chile) nurseries and preschools, family public health centers, and self-referrals. In the first contact with the families, the parents were informed of the study's goals, and the inclusion and exclusion criteria were assessed. Families who met the criteria and were willing to participate in the study gave their informed consent, after which a home visit was arranged for their data to be collected. The first assessment session was video-taped to measure the quality of triadic and dyadic interactions (see results in Olhaberry et al., 2017), and scales and questionnaires were completed. Data were collected during 2015 and 2016 by psychotherapists who were previously trained in the use of the above-mentioned questionnaires.

2.5 | Data analysis

A descriptive and correlational analysis of the data was conducted. The comparison of the means of the variables studied between mothers and fathers was conducted with the *t*-student test for related samples.

To meet the objective of the research, two path analyzes were carried out, one for each parent. As hypothesized, the theoretical model establishes that early adverse experiences would be positively associated with depressive symptoms in adults, and that the greater the symptoms, the lower the parental sensitivity. Considering the high comorbidity between anxious and depressive symptoms, the

effect it could have on parental sensitivity was controlled by including anxiety symptoms as a covariate.

In the model involving mothers, none of the parental stress dimensions had a significant impact (see Figure 1) so the original model was maintained. In the case of father, the mother's PD impacted paternal sensitivity by modeling it in conjunction with paternal depressive symptoms (see Figure 2). Additionally, it was hypothesized that the sensitive response in the mother/child (and father/child) interaction would affect the functionality of the interaction in the different subsystems of the triadic interaction, namely, triadic scores, coparenting score, child score (see Figures 1 & 2). Finally, the correlation between the errors among each of the functioning indicators of the subsystems of the triad was allowed, considering that the participants form a family.

Descriptive analysis was done using SPSS. Path analysis was performed in MPLUS 6.11 (Muthen & Muthen, Los Angeles, CA, U.S.). All tested models used restricted maximum likelihood estimation (RML) and completely standardized path coefficients are presented. Goodness of fit was evaluated using different indices: Chi-square, Chi-square/df ratio, Comparative Fit Index (CFI), Root-Mean-Square Error of Approximation (RMSEA), and the Tucker–Lewis index (TLI). The Chi-square not significant indicated that the model fits the data. A Chi-square/df ratio values lower than 2 are widely considered to represent a minimally plausible model (Byrne, 1991). TLI and CFI cut values of.95 or greater are considered to be evidence of good model fit. RMSEA $\leq .06$ and SRMR $\leq .08$ indicate good model fit (Shrout & Bolger, 2002).

3 | RESULTS

3.1 | Descriptive

Table 2 presents the descriptive data of the assessed variables. The results indicate that mothers have higher levels of depressive symptoms, $t(79) = 4.52$, $p < .001$ and indicators of childhood adverse experiences than their partners, $t(79) = 3.47$, $p < .001$. Also, mother present higher levels of parental distress, $t(79) = 2.77$, $p = .007$, and perceive their children as more difficult to deal with $t(79) = 2.13$, $p = .036$, than fathers. No significant differences on reported sensibility were identified, $t(79) = -1.19$, $p = .239$, nor parent–child dysfunctional interaction, $t(79) = -.22$, $p = .829$ among mothers and fathers.

Regarding early adverse experiences, 46.3% of the mothers reported experimenting at least one of the following forms of physical violence: a member of the family hit her so harshly that left marks on her skin; she was punished by being beaten with a belt, stick, rope, or another hard object; or was so badly beaten that another person (i.e., neighbor, teacher) noticed the marks. Further, 28.7% of the women reported suffering from at least one form on sexual violence, including someone tried to touch her or touched her in a sexualized way, someone threatened her if she refused to have sex with him or her, someone forced her to have sex or made her watch sexual activities, or were victims of sexual harassment during childhood or adolescence. With regard to fathers, 46.3% reported experiencing at least one form of physical violence (as described above) and 10% reported suffering at least one form of sexual violence.

3.2 | Correlations

Regarding the patterns of correlations, in the case of mothers, depressive symptoms were positively and significantly associated with the level of early adverse experiences, and to each of the dimensions of parental stress. In addition, depressive symptoms were significantly and negatively associated with parental sensitivity and level of functionality of the triadic system. Regarding fathers, depressive symptoms were only related to the level of early adverse experiences and their own parental distress.

Maternal sensitivity was related to a lower perception of the child as difficult to deal with and greater functionality of the triadic system. As for fathers, sensitivity was only associated with two of the functioning dimensions of the family system (triadic as a whole and child dimensions). The mother's parental distress was negatively associated with the indicators of family system functioning. This relation was not identified in fathers. Finally, it can be seen that the performance indicators of the family subsystems showed positive and significant correlations with each other. Regarding the correlations between mothers' and fathers' evaluations (Table 3), both parents sensitivity was significant and positive associated, as well as all dimensions of the parental stress report. Both depressive symptoms and the level of adverse experiences of each of the parents did not present a significant association.

Additionally, the following correlations are presented between maternal and paternal measurement: the greater the maternal depression, the lower the sensitivity and the greater the paternal stress; the greater the paternal sensitivity, the lower the maternal parental distress. Also, the greater the early adverse experiences in the mother, the greater the paternal depression; and the greater the perception of difficulty in the interaction with the child from the mother's perspective, the higher the paternal report on perception of the child as hard to deal with and/or as less adaptable.

TABLE 2 Mean (DS) y correlations among variables

Variables	*Mean (SD)*		Correlations								
	Mother	Father	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Depressive symptoms[a]	10.28 (6.53)	6.45 (5.40)	-	.262*	−.237*	.646***	.441***	.341**	−.253*	−.213	−.120
(2) Early adverse experiences[b]	50.95 (13.25)	44.83 (9.18)	.244*	-	−.173	.129	.204	.020	−.251*	−.200	−.147
(3) Parental Sensitivity[c]	6.02 (1.65)	6.29 (1.98)	−.112	.013	-	−.212	−.212	−.231*	.348**	.183	.202
(4) Parental Distress[d]	28.27 (9.90)	25.06 (6.84)	.659***	.267*	−.147	-	.542***	.494***	−.313*	−.252*	−.315**
(5) Parent–Child Dysfunctional Interaction[d]	19.44 (6.48)	19.61 (6.24)	.156	.219	.017	.429***	-	.610***	−.215	−.121	−.214
(6) Difficult Child[d]	28.62 (9.82)	26.65 (7.92)	.106	.006	−.131	.219	.518***	-	−.125	−.233*	−.060
(7) The triadic as a whole[e]	9.89 (4.36)		−.122	.058.	.289**	−.157	−.143	−.057	**	*.628****	*.575****
(8) Coparenting dyad[e]	2.20 (.91)		−.063	−.035	.074	−.131	−.150	−.130	-	-	*.316***
(9) The Child[e]	2.13 (1.33)		−.035	−.106	.276*	−.217	−.15	−.207	-	-	-

Note: Maternal correlations ($n = 80$) are located over the diagonal and paternal ($n = 80$) below the diagonal. Variables 7, 8, and 9 are triadic measures (correlations in italics).

Instruments: [a]Beck Depression Inventory.

[b]Childhood Trauma Questionnaire—Short Form.

[c]CARE-Index, Experimental Index of Child–Adult Relationships.

[d]Parenting Stress Index—Short Form.

[e]Lausanne Triadic Play (LTP).

*$p < .05$, **$p < .01$, ***$p < .001$.

TABLE 3 Correlations between maternal and paternal scores

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Maternal Depressive symptoms[a]	.206	.262*	.005	−.237*	−.301**	.646***	.244*	.441***	−.025	.341**	.117
(2) Paternal Depressive symptoms[a]	-	.364**	.244*	−.043	−.112	.147	.659***	.031	.156	−.018	.106
(3) Maternal early adverse experiences[b]		-	.043	−.173	−.150	.129	.170	.204	.100	.020	.134
(4) Paternal early adverse experiences[b]			-	.055	.013	−.064	.267*	−.011	.219	−.004	.006
(5) Maternal sensitivity[c]				-	.414***	−.212	.054	−.212	.028	−.231*	−.122
(6) Paternal sensitivity[c]					-	−.403***	−.147	−.171	.017	−.208	−.131
(7) Maternal Distress[d]						-	.273*	.542***	.094	.494***	.200
(8) Paternal Distress[d]							-	.171	.429***	.018	.219
(9) Mother–Child Dysfunctional Interaction[d]								-	.357**	.610***	.363**
(10) Father–Child Dysfunctional Interaction[d]									-	.168	.518***
(11) Difficult Child[d] – Mother report										-	.583***
(12) Difficult Child[d] – Father report											-

Note: Instruments:
[a]Beck Depression Inventory.
[b]Childhood Trauma Questionnaire-Short Form.
[c]CARE-Index, Experimental Index of Child–Adult Relationships.
[d]Parenting Stress Index—Short Form.
*$p < .05$, **$p < .01$, ***$p < .001$.

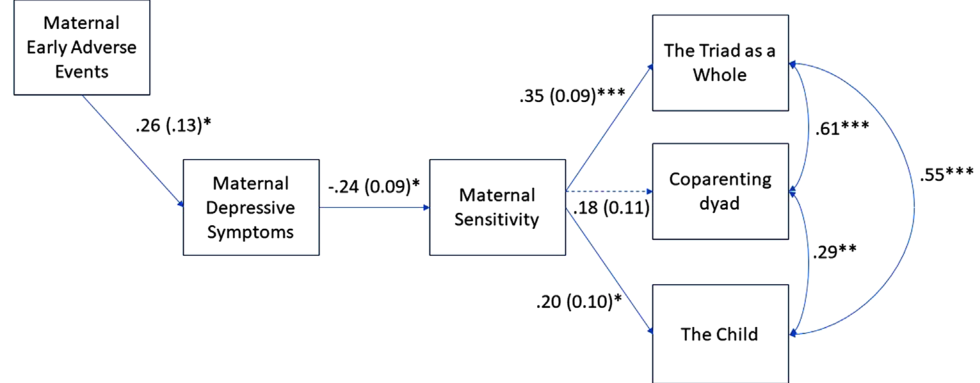

FIGURE 1 Mothers' model

3.3 | Mothers' model

Results on mother model are displayed in Figure 1. Models' goodness-of-fit indexes are $X^2(7, N = 80) = 7.52$, $p = .945$, Chi-square/df ratio = 1.07, CFI = .99, TLI = .99, RMSEA = .030 (90% IC .000–.143), SRMR = .082. All fit indexes indicate a good model fit.

Coefficients models indicated that maternal depressive symptoms are predicted by personal adverse experiences during childhood, and that maternal depression is associated with lower maternal sensitivity in the interaction with her child.

Maternal sensitivity is related to two of the three aspects of family system functioning, specifically, with greater functionality within the family triad, and better child's functioning in the triadic interaction.

Thus, with greater maternal sensitivity, the mother–father–child triad interaction is participatory, organized and focused on the task, activities are co-constructed; also, adequate parental support towards the child and a climate of warmth, validation, and authenticity is observed. In addition, the child seems motivated, involved, and self-regulatory adequately.

3.4 | Fathers' model

Results on the fathers' model are displayed in Figure 2. The models' goodness-of-fit indexes are $X^2(11, N = 80) = 16.25$, $p = .132$, Chi-square/df ratio = 1.48, CFI = .95, TLI = .90, RMSEA = .077 (90% IC .000–.151), SRMR = .075. Most of absolute fit indexes indicated a good model fit, but incremental indexes (CFI and TLI) are below the cutoff. The model coefficients indicated that paternal depressive symptomatology is predicted by the level adverse childhood experiences, but the level of paternal depression was not associated with his sensitivity once the effect of maternal distress is controlled. In this context, the level of personal discomfort experienced by the mother in her parental role was the variable that is associated with lower paternal sensitivity. Like what was found in mothers, paternal sensitivity is associated with two of the three aspects of family system functioning, specifically, greater paternal sensitivity in the dyadic interaction, greater the functionality within the family triad, and better child's functioning in the triadic interaction.

4 | DISCUSSION

The results of the present study show a complex pattern of relationships between maternal and paternal characteristics, and family functioning. The association observed between fathers and mothers in terms of depressive symptoms, parental stress, and sensitivity is consistent with previous studies that show reciprocal influences between the members of the parental couple.

Previous research suggests that parental stress in one member of the couple is associated with greater depressive symptoms in the other (Vismara et al., 2016) and reduced satisfaction with the couple's relationship (Choi, 2019); which could have a negative impact in parental sensitivity. Likewise, Scott et al. (2018) propose that mothers and fathers who cohabit influence each other's parental sensitivity and involvement.

Regarding the role of early adverse experiences, our results confirm that experiencing these events during childhood is associated with depressive symptoms in adulthood, both for mothers and fathers. In a meta-analysis on the subject, Mandelli et al. (2015) report that early experiences of neglect, domestic violence, and physical and emotional abuse increase the risk of developing depression in later years. Likewise, a recent study suggests that emotional neglect and emotional abuse would have a greater effect on adult depression, when compared to other types of adverse experiences suffered during childhood.

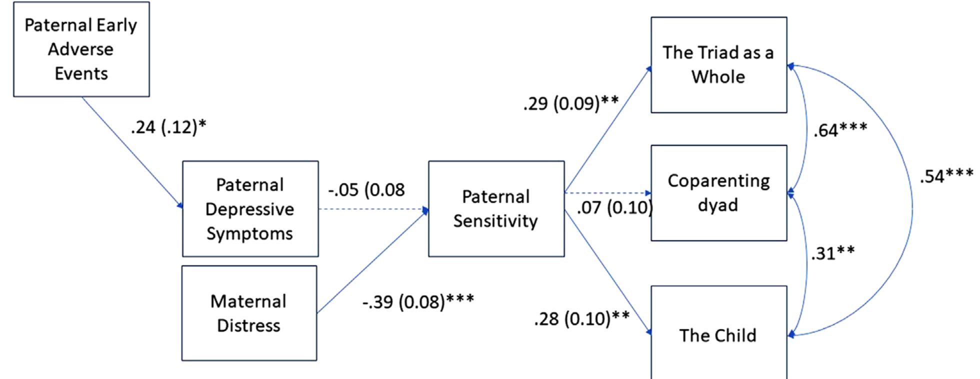

FIGURE 2 Fathers' model

Despite the fact that all types of abuse would increase the risk of developing a depressive disorder in adulthood (Humphreys et al., 2020). By studying the underlying mechanisms of this phenomenon, Wang et al. (2020) argue that an early exposure to high levels of stress that exceed the individual's coping capacities would affect the functioning of the HPA axis associated with the monoamine circuit (including norepinephrine, dopamine, and 5-HT), which play a critical role in the mood disorders.

When exploring the association between depressive symptoms and sensitivity in the interaction with the child, the differences between mothers and fathers are valuable information. In the present study, maternal depression symptoms were associated with lower sensitivity, as previous studies have shown (Hazell Raine et al., 2020), which describe how maternal depression leads to less emotional availability to attend and respond to the demands and needs of the child in mother–infant interaction (MacMillan et al., 2020).

As for fathers, sensitivity in father–child interaction was influenced by the mothers' parental stress, but not by the father's depressive symptoms. This can be due to a number of reasons. First, fathers who participated in this study reported low levels of depression, which would imply a reduced impact on paternal sensitivity. On the other hand, it is important to consider that depression can manifest itself differently in men and women. Baldoni and Giannotti (2020) proposes that men express their emotional distress more commonly through externalizing behaviors and behavioral symptoms, such as irritability, lack of interest, and distancing from close relationship (such as children and partner). In addition, depression in fathers can be masked by other symptoms, such as addictive behaviors and acting out. Therefore, it is possible that the evaluation of depressive symptoms with the BDI, which does not evaluate these types of symptoms, only partially captures paternal emotional difficulties (Baldoni et al., 2018). Additional assessments on paternal depression, with instruments that evaluate externalizing behaviors and other behavioral symptoms, could yield different results on the impact of paternal depression on their sensitivity during father–child interactions.

It is noteworthy that, despite paternal depressive symptoms were not associated with paternal sensitivity, maternal stress did contribute to a lower sensitivity in the father–child interaction. Dyadic studies involving fathers and mothers have reported two-way influences between parents and suggest that parental involvement is affected by multiple aspects of the couple's relationship and the family context. For example, a recent cohort study that included 7058 families found that maternal depression was associated with reduced paternal involvement, which in turn had a negative effect on behavioral problems in 4-year-olds (Gutierrez-Galve et al., 2015). Likewise, an earlier study on predictors of paternal sensitivity observed that fathers who reported a more positive perception of the couple's relationship quality, were more sensitive when interacting with their 3-year-old children (Rockville, 2000). It is possible that maternal stress might impact the couple's functioning and through this mechanism influence the father's involvement in parenting. Future studies could address the mechanisms through which parental stress reported by mothers impacts paternal sensitivity.

On the other hand, the maternal perception of the child's behavior and difficulty in interacting with him/her was associated with the paternal perception of the child as difficult and less adaptable. Although the results do not allow to establish causal relationships between maternal and paternal perceptions of their child, it is possible that mothers who, in the cultural context of the sample spend more time interacting with their children than fathers on parenting tasks (SERNAM, 2009; PNUD, 2019), contribute with their perception to the formation of the fathert's representations about the child.

When examining the association between parental sensitivity and triadic functioning, we observed that, in both

mothers and fathers, greater sensitivity in the interaction with the child was associated with positive family functioning at a triadic level and of the child in the triadic context. This is consistent with previous studies, which show that the sensitivity of one parent towards the child increases in the triadic context (dyad within the triad) when there is a positive family alliance and that this, in turn, is associated with greater sensitivity in fathers and mothers (Udry-Jørgensen, et al., 2016).

These results suggest that a systemic approach, which considers fathers, mothers, and the dynamics between the different members of the family, may allow a better understanding of maternal and paternal characteristics that favor positive family functioning. It is interesting that sensitivity was not associated with co-parenting, which reinforces the notion that both constructs are different and are associated with particular skills and behaviors that, in the case of co-parenting, include the ability to support each other and reach agreements regarding child rearing and parenting (Favez et al., 2018). On the other hand, it is possible that the families that participated in the study do not usually have spaces in which both parents interact with the child at the same time. This could be associated with the traditional distribution of roles that usually occurs in Chilean families (Barker & Verani, 2008; SERNAM, 2009), where mothers—who are more involved in parenting—tend to promote the father–child interaction when the father is present, instead of promoting triadic interactions. The presence of the father, through assuming the childcare role, could offer rest spaces for the mother in tasks associated with parenting (Cabello et al., 1992). From another perspective, the lack of association between parental sensitivity and co-parenting may be associated with the low variability in co-parenting scores observed in the sample, which were in a medium range. It is possible that, being families of young children (1–3 years), co-parenting coordination is still in a development stage and subject to changes over time. Likewise, the motivation of couples to participate and the fact that an inclusion criterion was to be current couple relationship with the mother/father of their child might have limited the participation of couples in more conflictive situations that show low levels of co-parenting.

4.1 | Strengths, limitations, and future directions

The results of this study are limited by the characteristics of the sample, whose participants voluntarily decided to participate in an intervention to improve family interactions quality. Likewise, only families with cohabiting mother and father were included. Future studies could explore the association between mental health, sensitivity, and triadic functioning in more diverse families. This would also allow for the development and validation of instruments sensitive to possible gender differences, sexual roles, and diversity among caregivers. An additional limitation refers to the sample size, which is limited for some of the analysis performed. However, most studies on triadic interaction show similar sample sizes, due to the complexity of assessing and coding both dyadic and triadic interactions.

Regarding the evaluation of depressive symptoms, it is possible that the use of the BDI for assessing paternal depression only partially captures emotional distress. Future studies could consider the inclusion of other instruments that complement the traditional evaluations. This is particularly relevant when working with diverse families, in which it is necessary to capture a wider variability on the manifestation of emotional distress.

5 | CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

Despite these limitations, the present study has several strengths, such as considering both maternal and paternal influence, including parental sensitivity assessment both at a dyadic and triadic family functioning level, and focusing on a clinical sample of children who present socio-emotional difficulties.

The presented results reinforce the need to consider the dynamic influences between members of a family to achieve a better understanding of its functioning and its impact on the emotional well-being of each of its members. Likewise, they could inform interventions that consider the complex interactions that occur in the family context and that promote the well-being of their individuals considering dyadic and triadic perspectives.

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CONFLICT OF INTEREST

All authors declare they have no conflict of interest regarding the present research.

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