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COPARENTING AND MOTHER-INFANT INVOLVEMNT DIFFICULTIES: THE MODERATING ROLE OF HISTORY OF MENTAL HEALTH PROBLEMS AND POTENTIALLY TRAUMATIC EVENTS

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Abstract

Coparenting quality can influence parenting. However, evidence is needed on the association between coparenting and mother-infant involvement. The main objective of this study is to analyze the association between coparenting and mother-infant involvement difficulties, considering the moderating role of the history of mental health problems and potentially traumatic events. The sample comprised 150 mothers. At 2 months postpartum, participants completed a sociodemographic questionnaire and self-reported measures of coparenting quality (Coparenting Relationship Scale) and mother-infant involvement difficulties (Postpartum Bonding Questionnaire). The results revealed that higher levels of coparenting quality were associated with less mother-infant involvement difficulties ($B=-0.13$, $p<0.05$). Previous mental health problems were associated with more mother- infant involvement difficulties ($B=0.12$, $p<0.05$). History of mental health problems and potentially traumatic events did not moderate the association between coparenting quality and mother-infant involvement difficulties. The parenting interventions could be developed to educate couples on better co-parenting strategies and to screen and protect women at higher risk of developing mother-infant involvement difficulties.

Key-words: Coparenting, Mother-Infant Involvement Difficulties, History of Mental Health Problems, Potentially Traumatic Events

Resumo

A qualidade da coparentalidade pode influenciar a parentalidade. No entanto, são necessárias evidências sobre a associação entre a coparentalidade e o envolvimento emocional mãe-bebé. O principal objetivo deste estudo foi analisar a associação entre a coparentalidade e as dificuldades de envolvimento emocional mãe-bebé, considerando o papel moderador da história de problemas de saúde mental e de eventos potencialmente traumáticos. A amostra foi composta por 150 mães. Aos 2 meses pós-parto, as participantes completaram um questionário sociodemográfico e medidas de autorrelato para avaliar a qualidade a coparentalidade (Escala de Relação Coparental) e as dificuldades de envolvimento emocional mãe-bebé (Questionário de Vínculo Pós-parto). Os resultados revelaram que níveis mais elevados na qualidade da coparentalidade estavam associados a menos dificuldades de envolvimento emocional mãe-bebé ($B=-0.13$, $p<0.05$).

A história de problemas de saúde mental está associada a mais dificuldades de envolvimento emocional mãe-bebé ($B=0.12$, $p<0.05$). A história de problemas de saúde mental e eventos potencialmente traumáticos não moderou a associação entre a qualidade da coparentalidade e as dificuldades de envolvimento emocional mãe-bebé. Intervenções clínicas devem ser desenvolvidas com os pais, para educar os casais sobre melhores estratégias de coparentalidade e para rastrear e proteger mulheres em maior risco de desenvolver dificuldades de envolvimento emocional mãe-bebé.

Palavras-Chave: Coparentalidade, Dificuldades na ligação mãe-bebé, História de problemas de saúde mental, Eventos potencialmente traumáticos

Abbreviations

CEDIC – Comissão de Ética e Deontologia para a Investigação Científica

et al. – And Others

CRS – Coparental Relathionship Scale

ST – Standard Deviation

PBQ – Postpartum Bounding Questionnaire

SPSS – Statistical Package for Social Sciences

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Introduction

Better coparenting quality is associated with better emotional and behavioral outcomes for children, as it fosters a stable and supportive family environment (Feinberg, 2003). Conversely, low coparenting quality can lead to increased family stress, conflict, and negative outcomes for children, such as behavioral problems and emotional difficulties. (Feinberg, 2003). Coparenting is defined as the joint and reciprocal involvement of both parents in the upbringing, education, and decision-making regarding their children's lives. It includes the support they provide to each other, the sharing of responsibilities, and the coordination they maintain regarding childcare (Feinberg, 2003). It can be exercised by couples who are together and directly collaborate in parenting, or by former partners (McHale & Lindahl, 2011). It is a demanding task as it requires two individuals with different belief systems and values to work together continuously and consistently (Petren & Puhlman, 2021). Co-parenting is not an extension of the marital relationship but rather a distinct concept with its own characteristics (Feinberg, 2003). In recent years three important theoretical models have emerged for better understanding of the co-parenting dynamics. Firstly, there is the three-factor model of co-parenting by Margolin et. al. (2001). This model focuses on three dimensions: the level of conflict related to parenting issues, cooperation and triangulation displayed by the couple (Margolin et. al., 2001). Another important model is the Feinberg's (2003) Model of Internal Structure and Ecological Context of Coparenting. This model defines coparenting and its dimensions, considering coparenting as the sharing of responsibilities related to childcare. The coparenting relationship is directly linked to the quantity and frequency of coordination and support that each parent provides to the other regarding child-related tasks. This model suggests four fundamental components for the practice of

coparenting: agreement or disagreement in parenting practices, division of child-related tasks, support/sabotage of the coparenting role, and joint management of the family relationships. The success of each of these components determines the success of coparenting, although the weight that each component represents depends on the family characteristics. (Feinberg, 2003). At last, Van Egeren and Howkins (2004) model, focuses on the premise that coparenting has an external and internal structure. The theory defends that coparenting exists in all families with children, regardless of the marital status, sexual orientation of the individuals, or whether the child is biological or adopted. This model also suggests that the coparenting alliance begins when the couple starts discussing coparenting-related issues. It highlights the importance of each member's perception of the coparenting alliance and suggests that it impacts how coparenting is practiced (Van Egeren & Howkins, 2004). However, the concept of co-parenting does not mean that both parents always have the same responsibilities or authority, as roles can change over time or depending on the situation and specific needs (Frizzo et. al., 2005). Sharing the responsibilities is also influenced by the social and cultural context of the couple (Feinberg, 2003).

Positive coparenting practices, such as effective communication, cooperation between the couple and support, are associated with better outcomes for the infant and the parents (Feinberg, 2003). On the other hand, negative co-parenting practices, such as conflict, criticism, and lack of communication, can negatively impact the mother-infant involvement. High levels of conflict are associated with negative outcomes, as the child is more likely to experience stressful situations (Teubert & Pinquart, 2010). When the couple is unable to work together, the woman may also feel overwhelmed and helpless, which can affect her ability to connect with the infant compared to couples where both parents share the same responsibilities and support each other (Frizzo et al., 2005).

Mother-infant involvement is characterized by the emotional connection that develops between them (Tichelman et al., 2019). This relationship is characterized by affectionate ties, positive feelings, and emotional closeness from the mother towards the infant (Brockington, 2004). This process is gradual, beginning during pregnancy and continuing after childbirth (Behrendt, et al., 2019; Tichelman et al., 2019). When infants are born, they undergo a series of adaptations to an unfamiliar environment. Suddenly, they are exposed to a world filled with many different stimuli. Tichelman et al., 2019). For this adaptation to be successful, it is essential to establish a positive involvement between the mother and the infant. From an evolutionary perspective, this bond is crucial for the infant's survival (Tichelman et al., 2019). A strong bond between mother and infant in the early stages of life is also vital for the infant's social and emotional growth (Tichelman et al., 2019). This involvement process is reinforced through the mother's behaviors involving physical contact, such as, holding the infant, showing affection and breastfeeding, as well as through emotional interactions like talking to the infant, playing, and listening to the sounds the infant makes (Kennell & Klaus, 1984). The moment of childbirth is crucial for the bond that the mother will establish with the infant, as well as the initial interactions between them, which plays a fundamental role in this process (Brockington, 2004).

A strong involvement between the mother and the infant impacts the mother's mental health and overall well-being and can also positively impact the infant's emotional, social, and cognitive development (Tichelman et. al., 2019). A positive bond during pregnancy and the postpartum period is also positively associated with the establishment of secure attachment for the infant later in life (Tichelman et. al., 2019). The mother's availability for the infant and the behaviors she adopts are fundamental factors for establishing a strong bond. This can involve positive behaviors that facilitate the bond between the mother and the infant, or negative behaviors that hinder this

process (Brockington, 2001).

This connection is crucial as it is through it that the infant learns to interact and interpret the world and discovers their role in relation to others (Bowlby, 1979). However, this relationship is not always successfully achieved, and the mother may experience some challenges during this process (Brockington et. al., 2006). When there is a persistent breakdown in this bond, it can lead to later consequences for the child. If the mother has difficulties in the involvement with the infant, disturbances can arise with negative implications, potentially harming the mother's health and influencing the infant's development, as well as impacting the long-term relationship between both members of the dyad (Brockington, 2001). According to Brockington et. al., (2001), there are three types of disturbances in the mother-infant relationship: absence or delay of the maternal emotional responses (characterized by a sense of detachment, or lack of involvement with the infant), pathological anger towards the infant (manifested through verbal outbursts, impulses to harm the infant or aggressive acts towards the infant), and rejection of the infant(expressed a regret about the birth, or a desire for someone else to provide care). Later the authors added a dimension of anxiety towards the infant, characterized by an avoidance of the contact with the infant and of situations where the mother is alone with the infant (Brockington et. al., 2006).

Mothers with a history of previous higher levels of anxiety and depression tend to demonstrate lower levels of coparenting with their partners and perceive parenthood as a stress-causing challenge. (Hakanen et. al.,2019). Mothers with a history of mental health problems find it more difficult to respond to the infant's emotional needs. According to a study by Hakanen et al. (2019) mothers with pre-existing mental health issues struggle more in meeting the emotional needs of their infants (Hakanen et. al.,2019). And the history of maternal depression and anxiety is significantly associated with a poorer mother-infant involvement (Tolja et al., 2020).

A history of potentially traumatic experiences, as traumatic events in childhood and adulthood, can also adversely affect the bond between the mother and the infant (Wittkowski et al., 2007). According to Fuchs et al., 2015 mothers with a history of trauma have lower quality interactions with their babies, including less sensitivity to the infants' emotional needs. (In case of the trauma resulting from a previous abortion, women may experience higher levels of depression, which translates into difficulties in establishing a pre and postnatal bond. Regarding the trauma from a violent relationship, is serves as a poor predictor for the development of positive coparenting, negatively affecting the mother-child involvement. (Wittkowski et al., 2007). According to Moehler et. al. (2007), women who have experienced childhood abuse are more likely to engage in intrusive parenting styles, have a more punitive attitude towards the infant (Banyard, et., al., 2003), and engage in abusive acts towards their own infants (Pears & Capaldi, 2001). However, the type of abuse experienced is also relevant. Previous experiences of emotional abuse and physical mistreatment have a greater impact on parenting than experiences of sexual abuse (Moehler, et., al., 2007). Another risk factor for the development of a positive mother-child bond is the experience of a traumatic birth. Mothers who report trauma during childbirth face greater difficulties in establishing a strong bond with the infant (Dekel et. al., 2019).

Objectives

The main aim of this study is to analyze the association between coparenting and mother- infant involvement difficulties, considering the moderating role of the history of mental health problems and potentially traumatic events. Specific aims are to analyze: (1) the association between coparenting cooperation and conflict and mother-infant involvement difficulties; (2) the association between the history of mental health problems and history of trauma, and the mother's involvement difficulties with the infant; and (3) the moderating role of prior mental health problems and trauma in the association between positive and negative dimensions of coparenting and the mother's involvement with the infant.

Hypotheses

1. There is an association between positive and negative dimensions of coparenting and the mother's involvement difficulties with the infant.
2. There is an association between the history of mental health problems and potentially traumatic events and the mother's involvement difficulties with the infant.
3. History of mental health problems and potentially traumatic events moderates the association between positive and negative dimensions of coparenting and the mother's involvement difficulties with the infant.

Method

Participants

This study has a sample of 150 women. Participants' age is between 20 and 44 years old. The average age of the participants is around 33 years old. (M=33.0; DP=5.4). Most women were married or cohabiting (77.0%), identified as part of an ethnic majority (98.2%), and living on their birth country (83.4%) and were living in an urban area (89.1%) and more than half had an higher education (64.0%) and an average socioeconomic status (69.4%). More than half of the participants had a vaginal birth, or an elective cesarean section (61.7%) and reported no history of previous mental health issues (77.8%), nor history of previous trauma (57.2). Half of the participants reported not to have more than one child (52.7%). Most women reported no serious obstetric complications with the mother (92.4%), nor any serious complications with the infant (93.6%). Almost all the infants were born on the pregnancy term (>37 gestation weeks; 93.6%) and more than half was being exclusively breast fed (57.3%).

Table 1.

Socio-demographic data of the participants (N=150)

	(*n*)	*%*
Ethnicity		
Ethnic Majority	129	86.0
Ethnic Minority	2	1.3
Missing	19	12.7
Marital Status		
Married	113	75.3
Cohabitation	33	22.0
Has a partner but they don't live together	4	2.7
Residence in the birth country		
No	25	16.7
Yes	125	83.3

Education		
High School / 12º completed	51	34.0
Higher Education	98	65.3
Missing	1	0.7
Family Income		
Below average	9	6.0
Average	101	67.3
Above average	38	25.3
Missing	2	1.3
Type of birth		
Vaginal birth/ normal	63	42.0
Vaginal Birth	33	22.0
Instrumented birth		
Emergency caesarean section	21	14.0
Elective caesarean section	32	21.3
Missing	1	0.7

Obstetric complications		
No	85	56.7
Yes, mild complications	49	32.7
Yes, severe complications	13	8.7
Missing	3	2.0
Fetal/neonatal medical complications		
No	117	78.0
Yes, mild complications	24	16.0
Yes, severe complications	9	6.0
Prematurity		
No	137	91.3
Yes	13	8.7
Type of pregnancy		
Single	147	98.0
Twin	3	2.0

Previous trauma		
No	81	54.0
Yes	65	43.3
Missing	4	2.7
Previous Mental Health		
No	114	76.0
Yes	34	22.7
Missing	2	1.3

Procedures

This study is part and ongoing longitudinal study (2022.01825.PTDC). The longitudinal cohort includes four assessment points: (1) the 3rd trimester of pregnancy (28-32 weeks gestation), (2) 2 months postpartum (6-12 weeks postpartum), (3) 5 months postpartum (20-24 weeks postpartum), and 12 months postpartum (48-52 weeks postpartum). This study focuses on a subsample evaluated at the 2-month postpartum point, resulting in a cross-sectional design. Participants in the general study were required to be at least 18 years old, reside in Portugal, and be fluent in Portuguese. For the present study, additional criteria included being at the 2-month postpartum evaluation point, completing the PTSD symptoms questionnaire related to the infant's birth, having a partner, and experiencing a singleton pregnancy. This study was approved by the Ethics and Deontology Committee

for Scientific Research (CEDIC) of the Faculty of Psychology, Education and Sports at Lusófona University (Ref. RC000121), the Ethics Committee of São João Hospital in Porto (Ref. CES CHUSJ: 279/2022), and the Ethics Comittee of Alfredo da Costa Maternity Hospital (Ref. CES CHUSJ: 279/2022). The project was financed by the Foundation for Science and Technology Ref. 2022.01825.PTDC). The participants were recruited from São João Hospital in Porto, and Alfredo da Costa Maternity Hospital in Lisbon.

The purpose of the study was explained to all the participants and the informed consent was previously read and signed by each participant. During the process the participants were contacted to reinforce the importance of their participation. In total 809 women were contacted and of those, 752 accepted to participate and 95 decided to not follow through. The number of valid participants was 633. The participants were contacted again 2 months after the birth to fill in the questionnaire. 485 mothers were contacted and 10 declined to participate on the second moment of the study.

Measures

Sociodemographic and obstetric characteristics

To obtain sociodemographic and obstetric information, a self-reported was developed by the team. This instrument collects data about the participants age, marital status (Married/ Cohabiting; Lives with the partner; Has a partner but they do not live together), ethnicity (Ethnic majority, Ethnic minority; Unsure/ Prefer not to respond), residence in their birth country (Yes/ No), place of residence (Urban area/ Rural area), educational background (High school education/ 12^{th} grade completed), higher education (bachelor's, master's, doctorate) and socioeconomic status (below average, above average).

Coparenting

To assess coparenting the short version of the CRS – Coparenting Relationship Scale (Feinberg et al., 2012; Lamela et al., 2018) was used. This instrument has 14 items, with seven subscales (coparental agreement, coparental support, sabotage, division of the childcare responsibilities, exposure to conflict, and coparental closeness). The answers are given on a 7-point Likert scale, ranging from 0 (Not true about us/ Never) to 6 (Very true about us/ Very frequent) (Feinberg et al., 2012).

The original scale reveals a strong construct validity and internal consistency – α Cronbach of .94 (for mothers) and α Cronbach of .91 for fathers. It also shows a strong convergent validity (correlations raging from .60 to .71) and divergent validity (correlations raging from .34 to - .712) (Feinberg et al., 2012). The Portuguese version also shows a solid construct validity, good internal consistency (α ranging from .70 to .94), and reliable convergent and divergent validity (Lamela et al., 2018).

Potentially Traumatic Events

To assess prior trauma, the Sociodemographic Questionnaire was used, in which the participant was asked to indicate all the events they had experienced or witnessed at any point in their life. The events included a) serious life-threatening illness (heart attack, etc); b) severe injuries from a fight; c) sexual assault (rape, attempted rape, forced sexual act with a weapon, etc); d) physical assault (attack with a weapon, severe injuries from a fight, threatened with a fire arm); f) military combat or living in a war zone; g) childhood abuse(severe physical assault, sexual acts with someone 5 years older, etc) ; h) accidents (severe injury or death from a car accident, at work, or house fire, etc.),; i) natural (tornado, earthquake, etc.)disasters; j) any other traumatic event.

History of Mental Health Problems

To access the History of Mental Health Problems the Sociodemographic Questionnaire was used as well. The questionnaire has an item that evaluates the history of psychological problems and treatment with the question “Have you ever been diagnosed with any psychological problem or mental health issues?”. The response options for this item are: “Yes”, “No”, “I don't know”, and “I prefer not to answer”.

Mother-infant involvement difficulties

The Postpartum Bonding Questionnaire (PBQ; Brockington et al., 200; Nazaré et al., 2012) was used to assess mother-infant involvement difficulties. It is a self-report instrument with 12 items that assess the mother’s emotional and cognitive engagement with the infant. The total score is obtained by the sum of the items. The answers are given on a 6-point Likert-type scale ranging from 0 (always) to 5 (never). The PBQ demonstrates good internal consistency ($\alpha = .80$) and suitable values for convergent and discriminant validity (Nazaré, Fonseca & Canavarro, 2012). In this study, a Cronbach's alpha of 0.74 was obtained.

Data analyses strategy

To analyze the results obtained, the SPSS Statistics vs 29 data analysis program was used. Initially, descriptive statistical analyses were conducted using measures of central tendency and dispersion to describe the variables under study, coparenting and mother-infant involvement difficulties. Also, in descriptive terms, comparative analyses were made using the ANOVA test to verify whether the results of mother-infant involvement difficulties and coparenting vary based on sociodemographic variables (age, socioeconomic status, marital status, having one baby or twins, residence area, education

level), and those related to the health of the mother and the infant. The history of mental health problems and potentially traumatic events acted as a moderator.

Thus, to test objective 1, - the association between coparenting cooperation and conflict and mother-infant involvement difficulties - a simple linear regression model was performed, with Coparenting (CRS) as the dependent variable and difficulties in mother-infant involvement (PBQ) as the independent variable. For objective 2 - the association between the history of mental health problems and history of trauma, and the mother's involvement difficulties with the infant - two different multiple linear regression models were adjusted. In the first model, only the existence of prior traumas and the existence of previous mental health issues were introduced as independent variables, with mother-infant involvement difficulties as the dependent variable. In the second model, the aim was to strengthen the first model by including age as a covariate**,** in order to check how the relationship between the existence of prior traumas and previous mental health issues (independent variables) is affected when controlling for the mothers' age. Finally, to test objective 3- the moderating role of history of prior mental health problems and potentially traumatic events, moderate the association between positive and negative dimensions of coparenting and the mother's involvement with the infant a multiple linear regression model was adjusted with two moderating effects (interaction variables between prior trauma and coparenting, and between mental health issues and coparenting) along with the independent variables coparenting (CRS), prior traumas, and previous mental health issues. The independent variable age was also included as a control variable.

To be considered significant, the results obtained must present a p-value (sig) less than or equal to 0.05 ($p \leq 0.05$).

Results

Preliminary analysis

The results for descriptive statistics for mother-infant involvement and coparenting are presented in table 2. No associations were found between sociodemographic and obstetric characteristics and coparenting and mother-infant involvement difficulties (see attachments).

Table 2. Descriptive statistics for coparenting and mother-infant involvement difficulties

	M	SD	Min	Max
Coparenting	3.82	0.45	1.86	4.79
Mother-infant Involvement difficulties	0.72	0.31	0.42	2.50

Association between positive and negative dimensions of coparenting and mother-infant involvement

The results indicated that Model 1 explains 3.6% of the variance in difficulties related to mother-infant involvement difficulties ($R^2 = .036$, $F(1,148) = 5.50$, $p < .05$), showing statistical significance. Thus, Model 1 revealed that coparenting (CRS) significantly contributes to the reduction in the mother's involvement difficulties with the infant ($b = -0.19$, $p = .020$) (Table 10).

Table 3. Association between positive and negative dimensions of coparenting and mother-infant involvement

	B	b	SE
Constant	1.21	-	0.21
Coparenting	-0.13*	-0.19	0.06
R^2	.189		
R^2adj	.036		

Association between history of mental health problems, potentially traumatic events, and mother-infant involvement

The results indicated that Model 1 explains 3.0% of the variance in difficulties related to mother-infant involvement difficulties (R^2 = .030, F(2,141) = 2.21, p > .05), which is not significant. Thus, Model 1 revealed that prior trauma does not contribute to the decrease in the mother's involvement with the infant (b = -0.06, p = .475), but that the presence of prior mental health problems contributes to an increase in the mother's involvement difficulties with the infant (b = 0.18, p = .040) (Table 11). In Model 2, which was controlled for age, it was found that it explains 3.3% of the variance in difficulties in mother-infant involvement difficulties (R^2 = .033, F(3,140) = 1.58, p > .05), which is also not significant (Table 11). However, despite this model not being significant, the presence of prior mental health problems contributes to the reduction of difficulties in mother-infant involvement difficulties (b = 0.18, p = .037). On the other hand, the presence of trauma (b = -0.07, p = .414) and age (b = 0.05, p = .557) do not contribute to variations in difficulties in mother-infant involvement difficulties (Table 11).

Table 4. History of mental health problems and potentially traumatic events and mother-infant involvement difficulties

Modelo		B	b	SE	R^2	R^2adj
Modelo 1	Constant	.70	-	.03	.03	.02
	Previous Trauma	-.03	-.06	.05		
	Previous Mental Health	.12*	.18	.06		
Modelo 2	Constant	.61	-	.14	.03	.01
	Previous Trauma	-.04	-.07	.05		
	Previous Mental Health	.12*	.18	.06		
	Age	.00	.05	.00		

*p<.05

The moderating role of history of mental health problems and potentially traumatic events in the association between coparenting and mother-infant involvement difficulties

The results indicated that the model explains 5.1% of the variance in difficulties related to mother-infant involvement difficulties (R^2 = .051, F = 1.21, p > .05), which is not significant (Table 12). According to the same table, the present model revealed the following: the influence of positive and negative dimensions of coparenting on the difficulties in mother- infant involvement is not significant (B = -0.04, p = .607), This means that the quality of co- parenting does not substantially affect mother-infant involvement. The presence of prior mental health problems significantly contributes to the increase in difficulties in mother-

infant involvement (B = 0.12, p = .039). In other words, mothers with a history of mental health problems are more likely to experience challenges in involvement with their infant. The moderating effect of prior mental health problems (interaction Previous Mental Health* CRS) is not statistically significant (B = 0.07, p = .523). This means that a history of mental health issues do not change or influence how co-parenting affects mother-infant involvement. The presence of prior trauma does not significantly contribute to the difficulties in mother-infant involvement difficulties (B = -0.05, p = .343). Thus, trauma history does not have a notable impact on mother-infant involvement. There is no significant moderating effect of prior trauma (interaction Previous Trauma* CRS) (B = -0.11, p = .308). This indicates that a history of trauma does not alter the relationship between coparenting quality and mother-infant involvement.

Table 12. The Moderating role of the history of mental health problems and potentially traumatic events in the association between coparenting and mother-infant involvement difficulties

	R (R^2)	F	B	Sig	CI 95%
Mother-infant involvement	.23 (.06)	1.22		.301	
Constant			.63	.000	.35 .91
Coparenting			-.04	.607	-.19 .11
Previous Mental Health			.12	.039	.01 .22
Previous Mental Health* Coparenting			.07	.523	-.14 .28
Previous Trauma			-.05	.343	-.14 .05

Previous Trauma*Coparenting	-.11	.308	-.32 .10
Age	.00	.632	-.01 .01

The results indicate that the model explains 5.1% of the variance in mother-infant involvement difficulties ($R^2 = .051$, $F = 1.2$, $p > .05$). Which is not significant.

Discussion

The present investigation aimed to study the association between coparenting negative and positive dimensions and mother-infant involvement difficulties; (2) the association between the history of mental health problems and history of trauma, and the mother's involvement difficulties with the infant; and (3) the moderating role of history of mental health problems and potentially traumatic events in the association between positive and negative dimensions of coparenting and the mother's involvement with the infant. Regarding the first objective of the study, the verified results reveal a positive association between the level of coparenting and mother-infant involvement, indicating that when there is a higher level of coparenting, there is also a more positive and adequate relationship between the mother and her infant. These results show that certain positive coparenting practices, such as effective communication, support, and cooperation between the couple, are associated with a strong involvement of the mother with her infant. Regarding the second objective, in studying the relationship between coparenting and the mother's involvement with her infant, the existing association between the presence of prior traumas and the existence of previous mental health issues was also analyzed.

The results obtained only partially confirmed this hypothesis, as a positive association was found between the existence of mental health problems and the level of the mother's involvement with her infant. The present results confirm some existing literature, such as the study by Hakanen et al. (2019), which indicates that mothers with a prior history of mental health problems have more difficulties in meeting their babies' emotional needs. According to Tolja et al. (2020), mothers with a history of anxiety and depression problems exhibit weak mother-infant involvement.

Regarding the third objective and since some literature was found that, relates the existence of a relationship between mental health problems and the mother's involvement with her infant (Hakanen et al., 2019; Tolja et al., 2020), we sought to understand to what extent the presence of traumas and previous mental health problems could influence the relationship between positive coparenting and mother-infant involvement. However, the obtained results reveal that both the moderating effect of the presence of prior trauma and the existence of mental health problems are not significant, thus not affecting the relationship between coparenting and the existence of difficulties in the mother-infant involvement. It is possible that coparenting quality independently influences mother-infant involvement, without being significantly impacted by a mother's past experiences with trauma or mental health issues. In this case, co-parenting dynamics might play a more direct role in shaping involvement, and past psychological experiences may not change how coparenting affects the mother-infant involvement.

Mother-infant involvement and coparenting may be influenced by a complex combination of factors. While trauma and mental health issues undoubtedly affect maternal well-being, they might not directly influence how co-parenting quality interacts with involvement. Other factors, such as emotional support, personality, and coping strategies,

could be more critical in moderating this relationship. The results do not allow us to confirm the raised hypothesis; however, it is also important to note that this hypothesis is only a possibility, as no studies were found that analyzed the true nature of the observed relationship. Once again, there is a gap in the literature that should be addressed by conducting more studies that analyze this moderating effect as in the present study. In summary, while coparenting and potentially traumatic events do not seem to significantly affect mother-infant involvement, a history of mental health problems does contribute to more difficulties in this area. However, neither the history of mental health problems nor potentially traumatic have a significant moderating influence on the effect of coparenting.

This study highlights the critical relationship between coparenting quality and mother-infant involvement, emphasizing that positive coparenting practices can enhance maternal involvement, regardless of a mother's prior experiences with trauma or mental health issues. Although these past factors may negatively impact maternal well-being and involvement difficulties, they do not appear to significantly moderate the influence of coparenting on the mother-infant relationship. Given the identified gaps in existing literature, further research is essential to explore the intricate dynamics between coparenting, trauma, and maternal mental health to deepen our understanding and inform effective interventions for supporting mothers and infants.

Strengths and Limitations

This study was conducted in two different hospitals, located in two of the largest cities in the country, which presents as a strength as it ensures a good representation of the Portuguese population. Some limitations to consider include the fact that the study is cross-sectional, and therefore does not ensure the possibility of causality between the variables. Since it focuses only on a specific point in time, it does not allow for predictions

or considerations about what happens before or after. The use of self-reported measures is a limitation, as response may be influenced by social desirability bias. The fact that participants responded in a more favorable manner may influence the results. The lack of the father's perspective is also a limitation. Including it on the study could give us a more comprehensive perspective about the coparenting relationship.

Implications for practice and research

The findings emphasize the need for comprehensive interventions to support mothers during the postpartum period, addressing multiple dimensions such as social support, mental health, and preparation for the maternal role. Further research is essential to deepen the understanding of these complex relationships, contributing to improved maternal and infant outcomes in the postpartum period. Even though this study focuses on women, it doesn't diminish the importance of exploring the perspective of the other partner. It would also be important to study both heterosexual and homosexual couples and compare them, to verify if any differences are found. It would also be important to conduct the study in different geographic areas, particularly in rural regions, where cultural and socioeconomic contexts may influence the mother's perceptions and how she relates to pregnancy and her infant. The trends observed in this study, though not statistically significant, underscore the complexity of coparenting relationships. Future research should focus on larger, more diverse samples to determine whether sociodemographic variables such as income, education, and living arrangements play a more substantial role in shaping coparenting perceptions. Additionally, further investigation into the role of emotional and social support, parenting styles, and the quality of the romantic relationship could yield a more nuanced understanding of the factors that contribute to successful coparenting. These emerging trends suggest that

future research should use larger sample sizes to further investigate how perinatal factors, such as multiple births, serious health complications, and birth type, influence coparenting dynamics. Furthermore, the inclusion of other variables—such as emotional support, relationship quality, and parenting stress—may offer a more comprehensive understanding of the factors influencing coparenting relationships. Research should also consider the role of external support systems, such as healthcare providers, family members, and community resources, in shaping coparenting outcomes, particularly in the context of stressful or medically complex births.

Conclusions

The relationship between coparenting and mother-infant involvement remains largely unexplored in the existing literature, with very few studies addressing this connection, both internationally and nationally. The results obtained confirmed the hypothesis regarding the existence of a relationship between coparenting and mother-infant involvement. In this case, it was found that higher levels of coparenting are associated with a decrease in difficulties in the mother-infant relationship. These results are important as they highlight the need for developing more measures that reinforce coparenting and a positive relationship between parents.

It is significant to note that previous mental health issues seem to contribute to an increase in difficulties in the mother-infant involvement. Therefore, the creation of measures and intervention programs for the prevention and treatment of mental health issues in mothers becomes crucial to promoting a better relationship between mother and the infant.

In conclusion, the findings underscore the crucial role of coparenting in enhancing mother-infant involvement, suggesting that fostering positive coparenting dynamics can reduce difficulties in this relationship. Additionally, addressing maternal history of

mental health issues and potentially traumatic events is essential, as these challenges significantly contribute to involvement difficulties. Therefore, the development of targeted interventions and support systems focused on improving coparenting and maternal mental health can greatly benefit both mother and infant, promoting healthier family dynamics and emotional development for the child.

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Attachments

Attachment 1. Pearson correlation between mother-infant involvement and age

	Age	p
PBQ	.054	.513

Attachment 2. Associations between mother-infant involvement and sociodemographic characteristics

	Mother-Infant Involvement Difficulties		
Birth Country	***M***	***SD***	***Sig***
Yes	0.70	0.28	.793
No	0.71	0.32	
Ethnicity	***M***	***SD***	***Sig***
Ethnical majority	0.72	0.31	.829
Ethnical minority	0.67	0.24	
Income	***M***	***SD***	***Sig***
Below average	0.65	0.28	.187
Average	0.70	0.29	
Above average	0.79	0.04	
Education level	***M***	***SD***	***Sig***
High school	0.65	0.23	.102
Higher Education	0.73	0.29	
Marital status	***M***	***SD***	***Sig***

Married	0.73	0.33	
Lives with a partner	0.69	0.25	.576
Has a partner but they don't live together	0.58	0.18	

Attachment 3. Associations between mother-infant involvement (PBQ) and sociodemographic characteristics

		PBQ	
One Child or Twins	M	SD	Sig
One baby	0.72	0.31	.787
Twins	0.67	0.14	
Prematurity	M	SD	Sig
No	0.71	0.31	.730
Yes	0.74	0.27	
Birth Type	M	SD	Sig
Normal	0.72	0.31	.316
Vaginal Instrumental	0.64	0.22	
Emergency C Section	0.69	0.28	
Elective C Section	0.78	0.39	
Previous Mental Health	M	SD	Sig
No	0.72	0.30	.227
Yes	0.68	0.32	
Maternal Complications	M	SD	Sig
No	0.69	0.27	
Light	0.77	0.39	.220
Serious	0.62	0.22	

Infant Complications	M	SD	Sig
No	0.74	0.34	
Light	0.61	0.13	.093
Serious	0.62	0.21	
Exclusivity	M	SD	Sig
No	0.77	0.38	.054
Yes	0.67	0.22	

Attachment 4. Associations between coparenting relationship scale (CRS) and sociodemographic characteristics

	Coparenting		
Birth Country	***M***	***SD***	***Sig***
Yes	3.76	0.45	.468
No	3.83	0.45	
Ethnicity	***M***	***SD***	***Sig***
Ethnical majority	3.82	0.47	.826
Ethnical minority	3.75	0.15	
Income	***M***	***SD***	***Sig***
Below average	3.91	0.36	
Average	3.79	0.47	.379
Above average	3.89	0.42	
Education level	***M***	***SD***	***Sig***
High school	3.88	0.38	.304
Higher Education	3.80	0.47	

Marital status	***M***	***SD***	***Sig***
Married	3.78	0.46	
Lives with a partner	3.92	0.39	.242
Has a partner but they don't live together	3.96	0.65	

Attachment 5. Association between coparenting relationship scale (CRS) and sociodemographic characteristics

	Coparenting		
One Child or Twins	***M***	***SD***	***Sig***
One baby	3.81	0.46	.498
Twins	4.00	0.12	
Prematurity	***M***	***SD***	***Sig***
No	3.82	0.47	.678
Yes	3.87	0.19	
Birth Type	***M***	***SD***	***Sig***
Normal	3.83	0.46	
Vaginal Instrumental	3.93	0.39	.120
Emergency C Section	3.87	0.35	
Elective C Section	3.67	0.54	
Previous Mental Health	***M***	***SD***	***Sig***
No	3.87	0.43	.112
Yes	3.76	0.43	
Maternal Complications	***M***	***SD***	***Sig***
No	3.81	0.47	.069

Light	3.77	0.44	
Serious	4.09	0.31	
Infant Complications	***M***	***SD***	***Sig***
No	3.84	0.45	
Light	3.68	0.52	.281
Serious	3.84	0.26	
Exclusivity	***M***	***SD***	***Sig***
No	3.78	0.52	.375
Yes	3.85	0.39	

Table 6. Associations between previous trauma and previous mental health and sociodemographic characteristics

	Previous Trauma	Previous Mental Health
		1.000
Prematurity	.774	1.000
Lives in the birth country	.269	.443
Ethnicity	1.000	.376
Income	.731	.287
Education	.157	.541
Marital Status	.394	.885
Birth Type	.640	.667

Other Children	.406	.078
Mother Complications	.103	.749
Infant Complications	.094	.537
Exclusivity	.095	.241