

Research Paper

The Mediating Role of Postpartum Depression and Childbirth-related PTSD in the Relationship Between Attachment Styles and Postpartum Bonding Among Mothers in Ahvaz City, Iran



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ABSTRACT

Objective: Several studies have explored the correlation between postpartum depression and a weak mother-infant bond; however, fewer studies have analyzed how other postpartum mental health conditions, such as childbirth-related post-traumatic stress disorder (PTSD), or important personal characteristics, including adult attachment styles, affect the quality of the mother-infant bond. This study aims to examine the association between attachment styles and postpartum bonding in mothers, considering the mediating influence of postpartum depression and childbirth-related PTSD.

Methods: A total of 150 mothers, 4 to 12 weeks postpartum, completed a demographic questionnaire, the Edinburgh postpartum depression questionnaire, the posttraumatic stress questionnaire related to the birth of a child, the mother-child bonding questionnaire, and the attachment style questionnaire. The posttraumatic stress related to the birth of a child questionnaire was translated into Persian for the first time and was used after confirming its validity and reliability. The proposed model was examined by the structural equation modeling method.

Results: The conceptual model's results showed that the direct and standardized effect of anxious attachment style ($\beta=0.49$, $P=0.001$) and avoidant attachment style ($\beta=0.47$, $P=0.001$) on postpartum depression were significant. Also, the direct effect of anxious attachment style ($\beta=0.59$, $P=0.001$) on postpartum PTSD was significant. However, the coefficient of avoidant attachment style ($\beta=-0.04$, $P=0.581$) was not significant for postpartum PTSD. Also, the coefficients were investigated from the direct effect of postpartum depression, postpartum PTSD, anxious attachment style, and avoidant attachment style. The obtained results showed that postpartum depression ($\beta=0.27$, $P=0.001$), postpartum PTSD ($\beta=0.43$, $P=0.001$), and anxious attachment style ($\beta=0.39$, $P=0.001$) could predict the mother-child bond. However, the avoidant attachment style ($\beta=0.00$, $P=0.946$) could not predict the mother-child bond.

Conclusion: The findings of the study revealed that insecure attachment styles were linked to challenges in forming a strong mother-infant bond. Anxious attachment was also associated with bonding difficulties, which were influenced by symptoms of postpartum depression and childbirth-related PTSD. In contrast, a higher degree of avoidant attachment style was associated with more significant difficulties in bonding, which were mediated by symptoms of depression. Accordingly, if interventions aim to enhance the mother-infant bond, treatment should focus on addressing childbirth-related PTSD, PPD symptoms, and insecure attachment styles.

Keywords:

Postpartum depression, PTSD, Attachments, Bonding

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Highlights

- The mediating role of postpartum depression between anxious and avoidant attachment styles has been confirmed.
- Anxious attachment style was related to a weaker mother-infant bond with the mediation of childbirth-related post-traumatic stress disorder.
- Childbirth-related posttraumatic stress disorder did not mediate the relationship's avoidant attachment style and bonding.

Plain Language Summary

The postpartum period is a challenging time for mothers, and in the meantime, the concept of maternal bonding, meaning the mother's feelings and thoughts toward her baby, can be important. This is not only an important issue for the mother, but also affects the child's development in the future. Many factors are related to this concept, including postpartum depression, which affects a large number of mothers after pregnancy, along with posttraumatic stress related to the birth of a child, which can produce several severe anxiety symptoms in the mother. In addition to these variables, the mother's personality variables also contribute to this concept and this relationship, including the type of mother's attachment, which can be anxious or avoidant. In this study, we aimed to examine the relationship between these variables. The results showed that these variables are related. In other words, postpartum depression plays a significant role in the relationship between insecure attachment styles and mother-infant bonding difficulties, and childbirth-related PTSD only plays a role between anxious attachment style and bonding difficulties.

1. Introduction

John Bowlby, the father of the attachment theory, introduced the significance of sensitive attunement and bonding between a caregiver and their child through his studies on maternal deprivation and separation of young children (Bretherton, 1992). Subsequently, Kennell and Klaus attempted to distinguish bonding from attachment. They defined maternal-infant attachment as the infant's primitive proximity-promoting behaviors while describing the mother-child bonding as an attachment that is in the opposite direction, namely from parent to infant. The maternal bond is the emotional state of the mother that develops during pregnancy or after the baby's birth (Bicking Kinsey & Hupey, 2013). It develops during pregnancy or after the birth of a baby (Muzik et al., 2013) and continues until the early years of the baby's life (Klaus & Kennell, 1983). The parent-baby bond plays an essential role in the baby's well-being and cognitive and emotional development (Fuchs et al., 2016; Tichelman et al., 2019).

When a parent feels indifferent, irritated, or hostile toward the baby and lacks positive feelings for an extended period, bonding issues can arise (I et al., 2018). These difficulties in bonding are often linked to psychiatric

disorders (Brockington, 2004). However, even in the absence of psychiatric disorders, the presence of an infant may trigger psychopathological symptoms in a parent who is predisposed to bonding problems, leading to further complications in bonding (Brockington et al., 2017). Research on potential risk factors for maternal bonding has primarily focused on psychiatric characteristics, particularly postpartum depression (PPD) (Handelzalts et al., 2021). The global prevalence of PPD is reported to be around 17%, with significant heterogeneity across nations (Hahn-Holbrook et al., 2017), while in Iran, the prevalence of PPD is reported to be 28.7% (Sarokhani et al., 2013). Currently, there is primary evidence that PPD in the early days of birth can predict the problems of mother-child bonding up to 1 year after delivery (Kasamatsu et al., 2020; Kerstis et al., 2016).

In contrast, few researchers have examined the association between bonding and other psychopathologies, such as postpartum posttraumatic stress disorder (PTSD) (Handelzalts et al., 2021). The prevalence of childbirth-related PTSD (CR-PTSD) is lower than PPD, and according to meta-analytic findings, it affects 3% to 4% of women (Grekin & O'Hara, 2014). However, in a study by Modares et al. (2010), 20% of all women who were referred had PTSD. Research data that have measured the relationship between PTSD and bonding have not been consistent with each other. Some have reported the

relationship between PTSD and bonding and showed that CR-PTSD negatively affects the mother's emotions and, to some extent, increases the stress of parenting (McDonald et al., 2011; Parfitt et al., 2014). Some others did not report a relationship (Radoš et al., 2020). A review of the relationship between PTSD and outcomes for the child shows strong evidence supporting the relationship between PTSD and bonding (Cook et al., 2018).

In comparison to psychopathology, few studies have explored the influence of predisposing personality traits on bonding (Handelzalts et al., 2021). The adult attachment style is a crucial factor in parenting and bonding (I et al., 2018). According to Bowlby and Ainsworth's attachment theory, children develop internalized attachment relationships with their primary caregivers, which forms a model for future relationships outside the family. This theory suggests that these internal working models of self and others may shape expectations of care and interactive patterns in close relationships, including parenting (Jones et al., 2015). Several studies provide evidence to support this theory, indicating that insecure attachment styles are linked to maladaptive coping (Fearon et al., 2010), depression (Bifulco et al., 2004; Warfa et al., 2014), and PTSD (Iles et al., 2011; Woodhouse et al., 2015).

This issue is known to be related to parenting variables (Jones et al., 2015); however, there are limited studies on the relationship between attachment styles and bonding, and the available evidence is not consistent. For example, some studies have found relationships between insecure attachment styles and problems in mother-child bonding (Handelzalts et al., 2021; I et al., 2018; Nonnenmacher et al., 2016; van Bussel et al., 2010). Handelzalts et al. (2021) discovered that the links between adult attachment styles and postpartum bonding were completely mediated by postpartum psychopathology. Avoidant attachment had indirect effects on bonding via general PTSD symptoms and PPD, while anxious attachment indirectly impacted bonding through general PTSD symptoms and PPD. In a separate study, I et al. (2018) found that insecure attachment styles were associated with bonding difficulties, and anxious/ambivalent attachment linked to higher infant-focused anxiety, mediated by PPD but not childbirth-related PTSD symptoms.

Conversely, a stronger avoidant attachment style was related to increased rejection and anger, mediated by CR-PTSD but not depression symptoms. This research supports the association between attachment styles and bonding and highlights the mediating roles of CR-PTSD and PPD symptoms. Nonnenmacher et al. (2016) re-

ported that women with dual/disorganized attachment had more bonding difficulties compared to individuals with secure or insecure attachment styles, mediated by depression. Additionally, Van Bussel, Spitz, and Demyttenaere (2010) observed weak correlations between secure and fearful attachment styles and impaired bonding measures. However, Chrzan-Dętkoś and Łockiewicz (2015) found that attachment style was linked to antenatal but not postnatal bonding experiences.

The current study aims to investigate the correlation between attachment styles, postpartum psychopathology, and mother-infant bonding by utilizing a mediation model. This model will assess the links between insecure, anxious, and avoidant attachment styles and postpartum bonding, which will be mediated by PPD and CR-PTSD.

This study hypothesized that anxious and avoidant insecure attachment styles are related to a weaker mother-infant bond with the mediation of PPD and CR-PTSD.

2. Materials and Methods

Study samples

The final sample consisted of 170 women in the postpartum period who visited Ahvaz Health Centers. The exclusion criteria included birth before 32 weeks of pregnancy or having a newborn with a chronic disease. A total of 20 out of the 170 people were excluded from the research due to unreasonable responses (such as not giving answers or repeated answers to questionnaire items) or having an infant outside the given range. Finally, 150 people were included in this study (Table 1).

This study is part of more extensive research that contributes to a deeper understanding of parent-infant bonding during the first year of life. The study method was that the mothers who were 4-12 weeks after giving birth and visited the health centers were explained about the research and filled out the informed consent form. Then, they were asked to complete the demographic questionnaire, the Edinburgh postpartum depression questionnaire (EPDS), and the posttraumatic stress questionnaire related to the birth of a child. Then, among these mothers, those who scored 13 or higher on the postpartum depression questionnaire and 19 or higher on the posttraumatic stress questionnaire related to childbirth were screened, and then the rest of the questionnaires, which include the mother-child bonding questionnaire and the attachment style questionnaire, were provided to them. Finally, after completing the questionnaires, they were

given a gift as a thank you. The obtained data were statistically analyzed via the SPSS software, version 26, and the R programming language.

Study instruments

Demographic questionnaire

The demographic questionnaire included items on the age of the mother and the baby, sex of the baby, education level, social and economic conditions, employment status, wanted or unwanted pregnancy, history of psychological problems, use of infertility treatments, number of previous births, breastfeeding, and type of delivery.

Postpartum depression questionnaire (EPDS)

The EPDS was created to screen for PPD and includes 10 items, each rated on a 4-point scale ranging from 0 to 3, with a maximum score of 30. The sum of responses indicates the risk for depression, with a score over 10 indicating depressive symptoms and a score over 12 indicating significant depressive symptoms, according to Cox et al. (1987). In some studies, the questionnaire was found to be a reliable and valid tool. Its sensitivity was obtained at 3.95%, and its specificity was equal to 9.87% (Mazhari & Nakhaee, 2007). Ahmadi Kani Golzar and Gholizadeh (2015) obtained the Cronbach α value for EPDS at 0.7 and the validity of the test with the Beck scale equal to 0.44.

Postpartum bonding questionnaire

The postpartum bonding questionnaire (PBQ) was created for the initial diagnosis of the mother-child bonding disorder. This scale has 25 questions with 4 components as follows: defective mother-child bond, rejection and anger, caregiving anxiety, and risk of child abuse. The questions are scored on a Likert scale from 0 (never) to 5 (always). The cut-off point of the whole scale is considered 38. Aflakseir & Jamali (2014) have obtained the validity and reliability of this scale in Iran. Accordingly, the reliability coefficient was equal to 0.52, 0.67, 0.70, and 0.74 for the components, respectively, based on the Cronbach α method. The validity of defective, rejection and anger, care anxiety, and the risk of child abuse components were obtained and considered suitable based on the factor analysis method.

Adult attachment interview questionnaire

The adult attachment interview (AAI) questionnaire was created in 1987 by Hazen and Shaver. This tool in-

cludes 15 items, of which 5 items are assigned to each of the three components of secure, avoidant, and ambivalent attachment styles. Scoring is done based on a Likert scale from 0 (never) to 4 (almost always). Hazen and Shaver reported the representativeness of the whole questionnaire at 0.81 and the Cronbach α coefficient at 0.78. In their research in Iran, Rahimian Boogar et al. (2007), the Cronbach α coefficient for the whole test, ambivalent style, avoidant style, and secure style were obtained at 0.75, 0.83, 0.81, and 0.77, respectively. In addition, the content and form validity of the questionnaire was confirmed by several psychologists who were members of the Faculty at Isfahan University.

Perinatal posttraumatic stress disorder questionnaire

Callahan and his colleagues 2006 developed the perinatal posttraumatic stress disorder questionnaire (PPQ). This tool has 14 questions that measure the existence of traumatic memories after childbirth. The items are related to re-experiencing, avoidance, and hyperstimulation. Participants answer their agreement with the items based on a 4-point Likert scale (from very little to never). Higher scores indicate more marks. A score of 19 or higher has reasonable clinical specificity (0.82), and this scale's internal consistency was obtained at 0.79 in I et al.'s study (2018). The Cronbach α coefficient was equal to 0.889 for this questionnaire and the exploratory factor analysis and the confirmatory factor analysis proved the existence of three factors.

3. Results

The participants in this study were 150 mothers, of which 79 (52.7%) of their children were female and 71 (47.3%) were male. The mothers participating in this study were between 20 to 40 years old, and the mothers with bachelor's degrees constituted the largest number of participants. The mean of mothers' age was equal to 29.09 with a standard deviation of 5.08. The demographic characteristics of the participants are provided in Table 1.

The Mean \pm SD, kurtosis, skewness, minimum, and a maximum of the data are reported in Table 2. The kurtosis and skewness were between +1.96 and -1.96, which shows the normality of the data.

The correlation results indicated a significant and positive relationship between postpartum anger bonding and postpartum anxiety bonding with PPD, postpartum PTSD, anxiety, and avoidant attachment. The result indicates that with the increase of PPD, postpartum PTSD,

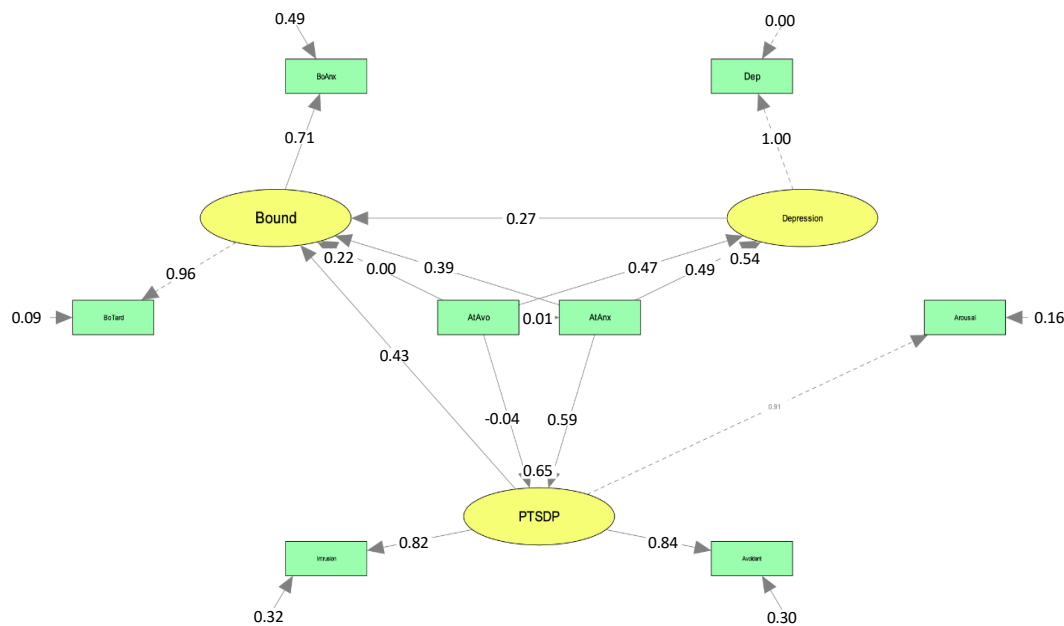


Figure 1. Conceptual model and standardized regression coefficients of the model

anxiety, and avoidant attachment, the mean of postpartum anger bonding and anxiety bonding increases and vice versa (Table 3). Also, the relationship between the research variables is less than 0.90, which shows no collinearity between the tested variables, and the assumption of non-co-linearity between the research variables is established. The graphs in the diameter of the correlation matrix show the normality of the data. Also, the cases with missing data were omitted from the analysis. Therefore, the normality, non-co-linearity, and missing data assumptions were met.

The measurement model for EPDS, PBQ, the attachment style questionnaire, and the CR-PTSD were tested. The study found that the measurement model of each scale had an appropriate goodness of fit. Furthermore, the conceptual model was measured, and the fitness indices reported in Table 4 suggested that the data were appropriate and aligned with the conceptual model.

The results obtained from the conceptual model, as presented in Table 5. Standardized, direct, indirect, and total of coefficients in the conceptual model of the research and Figure 1, showed that the direct and standardized effect of anxious attachment style ($\beta=0.49$, $P=0.001$) and avoidant attachment style ($\beta=0.47$, $P=0.001$) on PPD were significant. Accordingly, avoidant and anxious attachment styles can predict PPD. This means that with the increase of avoidant and anxious attachment styles, the rate of PPD increases and vice versa.

Also, the direct effect of anxious attachment style ($\beta=0.59$, $P=0.001$) on postpartum PTSD was significant and positive, and it indicated that with the increase of anxious attachment style, the amount of postpartum PTSD increases and vice versa. However, the coefficient of the avoidant attachment style ($\beta=-0.04$, $P=0.581$) was not significant for postpartum PTSD.

Also, the coefficients obtained from the direct effect of PPD ($\beta=0.27$, $P=0.001$), postpartum PTSD ($\beta=0.43$, $P=0.001$), anxious attachment style ($\beta=0.39$, $P=0.001$), and avoidant attachment style ($\beta=0.00$, $P=0.946$) was investigated. The obtained results showed that PPD, postpartum PTSD, and anxious attachment style could predict the mother-child bond, which means that with the increase in PPD, postpartum PTSD, and anxious attachment style, the amount of mother-child bond (anger and caregiving anxiety) also increases. However, the avoidant attachment style could not predict the mother-child bond (Table 5).

4. Discussion

This research investigated the relationship between attachment styles, postpartum psychopathology, and mother-infant bonding. The results showed that postpartum psychopathology, especially PPD and CR-PTSD symptoms, mediate attachment styles on the mother-infant bond.

Table 1. The participants’ demographic characteristics

	No. (%)	
Child’s Sex	Female	79(52.7)
	Male	71(47.3)
	Total	150(100.0)
Child Age (Week)	4-6	58(38.6)
	6-9	48(32.0)
	9-12	44(29.3)
Mother’s Age (y)	Total	150(100.0)
	20-25	41(27.3)
	25-30	43(28.7)
	30-35	48(32.0)
	35-40	18(12.0)
Mother’s Education Level	Diploma	41(27.3)
	Bachelor	87(58.0)
	Masters	13(8.7)
	PhD	9(6.0)

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In this research, the relationship between both anxious and avoidant attachment styles and bonding problems was found, and this finding was broadly consistent with studies that reported the relationship between insecure attachment styles and bonding (Handelzalts et al., 2021; I et al., 2018; Nonnenmacher et al., 2016; van Bussel et al., 2010).

This study is also consistent with the extensive literature correlating different insecure attachment styles with parenting variables (Jones et al., 2015). Avoidant and anxious attachment styles are likely linked to the emotional state of bonding with the infant. This is because the concept of bonding, which includes a mother’s emotions and thoughts toward her baby and herself as a parent, is expected to be connected to both avoidant and anxious attachment styles. Avoidant at-

Table 2. Correlation matrix, the Mean±SD of research variables (n=189)

Variables	Mean±SD	KU	SK	Min	Max	
Attachment	Anxious	14.65±1.502	0.180	0.213	11	19
	Avoidant	14.53±1.557	-0.052	0.209	11	19
Postpartum depression		14.49±1.230	0.243	0.250	11	18
Postpartum PTSD	Overstimulation	16.94±1.434	-0.057	-0.170	13	20
	Avoid	11.59±1.316	-0.273	0.197	8	15
	Reexperience	10.21±1.307	-0.196	0.066	7	14
Postpartum Bonding	Anger	20.59±1.594	0.051	0.188	17	25
	Anxiety	11.66±1.404	0.287	-0.274	7	15

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Abbreviations: PTSD: Posttraumatic stress disorder; SD: Standard deviation; KU, Kurtosis; SK: Skewness; Min: Minimum; Max: Maximum.

Table 3. Correlation matrix between the research variables (n=189)

Variables		1	2	3	4	5	6	7
Attachment	Anxious							
	Avoidant	0.005						
Postpartum depression		0.488**	0.474**					
Postpartum PTSD	Overstimulation	0.535**	-0.042	0.228**				
	Avoid	0.444**	-0.050	0.186*	0.781**			
	Reexperience	0.560**	0.011	0.223**	0.745**	0.675**		
Postpartum bonding	Anger	0.750**	0.107	0.539**	0.624**	0.569**	0.621**	
	Anxiety	0.527**	0.116	0.442**	0.484**	0.387**	0.501**	0.682**

**Significant at the 0.01 level.*Significant at the 0.05 level (2-tailed).

PTSD: Posttraumatic stress disorder.

achment models are typically associated with a lack of trust in others and a desire for independence, while anxious attachment models are characterized by feelings of helplessness and a fear of being alone (Mikulincer & Shaver, 2007).

The discovery that PPD mediates the association between insecure attachment and maternal bonding aligns with a significant amount of research indicating that PPD is linked to poorer outcomes for both the mother and the infant. These outcomes include impaired mother-baby bonding (Tichelman et al., 2019), reduced mother-infant interaction quality (Field, 2010; Lovejoy et al., 2000), and negative child outcomes (Goodman et al., 2011; Grace et al., 2003; Liu et al., 2017). These findings are consistent with prior studies indicating that PPD partially mediates the link between insecure attachment and bonding (Nonnenmacher et al., 2016; Tietz et al., 2014).

In this research, we concluded that CR-PTSD mediates anxious attachment style and mother-infant bonding problems, and anxious attachment style is more related to CR-PTSD symptoms than avoidant attachment style. These results are consistent with two meta-analyses, reporting that an anxious attachment style could have a more significant

effect than an avoidant attachment style concerning PTSD (Lim et al., 2020; Woodhouse et al., 2015). Accordingly, it can be explained why people with a high avoidant attachment style may experience fewer PTSD symptoms of avoidance and re-experiencing because the avoidant attachment style is even valuable for preventing the representation of traumatic events and because its underlying defenses have a function in facing specific life stresses (Lim et al., 2020; Woodhouse et al., 2015). While these results are not consistent with the research of I et al (2018), which found that post-birth trauma mediates the relationship between avoidant attachment style and bonding compared to anxious attachment style.

Cultural considerations are also a crucial piece to the motherhood experience. Cultural values provide parents with goals and strategies for rearing their children. Women rely on the values they hold about motherhood, as defined by their culture, to guide them when choosing which maternal characteristics of others they would like to model when deciding which of those modeled behaviors they want to adopt, as well as which of their self-characteristics they are to eliminate to better define themselves as a mother (Rubin, 1967).

Table 4. Fitness indices of the conceptual model of the research

Chi-Square	d _f	GFI	AGFI	CFI	RMSEA	NFI	IFI	SRMR
15.643	14	0.978	0.943	0.998	0.028	0.978	0.998	0.027

Abbreviations: d_f: Degree of freedom; GFI: Goodness of fit index; AGFI: Adjusted goodness of fit index; CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed fit index; IFI: Incremental fit index; SRMR: Standardized root mean square residual.

Table 5. Standardized, direct, indirect, and total of coefficients in the conceptual model of the research

Criterion Variables	Predictive Variables	ES	Std. E	Z	P	Std. lv	Std. all
Postpartum depression	Anxious attachment	0.492	0.061	8.094	0.001	0.215	0.486
	Avoidant attachment	0.499	0.064	7.850	0.001	0.218	0.471
PTSD	Anxious attachment	0.585	0.072	8.132	0.001	0.262	0.592
	Avoidant attachment	-0.040	0.073	-0.552	0.581	-0.018	-0.039
Bonding	Postpartum depression	0.334	0.080	4.191	0.001	0.266	0.266
	PTSD	0.556	0.084	6.597	0.001	0.430	0.430
	Anxious attachment	0.503	0.086	5.847	0.001	0.175	0.394
	Avoidant attachment	0.005	0.074	0.067	0.946	0.002	0.004

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Abbreviations: PTSD: Posttraumatic stress disorder; Std: Standard; ES: Estimate Standardization; Z: A non standardized significant level; Std.lv: Standardized latent variable; Std.all: Standardized parameter values that standardizes both latent and observed variables.

In Iranian culture, mothers feel a cultural imperative to be grateful and joyful after childbirth, despite any negative effect of traumatic childbirth experience or depression. This issue influences many mothers to silence or bury their feelings, which can prevent intervention and cause greater future concerns. Since motherhood is an important part of women’s identity in our culture, the ideal mother and ideal child are also affected by this idea and can change the relationship between mother and baby.

Study limitations

One of the limitations faced in this research was that our participants were from health centers in the upper regions of Ahvaz City, Iran, which limits the generalizability of the findings. Future studies could attempt to sample different populations and clinical samples, allowing a conclusion relevant to women suffering from PTSD or bonding problems. The second limitation of this study is based on its non-longitudinal design. Although our exploratory analyses revealed some reasons for the mediating role of PTSD and PPD, we know that mediation should always be evaluated with a longitudinal design to assess cause-effect relationships. The third limitation of this study is related to the measurement tools used. While the self-report scales utilized in this research are considered valid and reliable, there is a possibility that using different measures for attachment (such as the attachment interview) or PTSD and PPD (such as a psychiatric interview) could increase the reliability of the findings. The fourth limitation is that we considered bonding as a whole construct instead of examining specific bonding problems. We focused on analyzing PTSD and PPD

as mediating variables of attachment and bonding rather than the interplay between CR-PTSD and PPD. We believe that future research can shed light on these specific points. The fifth limitation is related to the selection of mediating variables. In this research, we used mediating variables related to the mother to investigate the relationship between attachment styles and bonding, which is better in future studies to include variables related to the infant as their temperament or support and relational variables, such as the relationship with her husband or social support should also be considered. Finally, in this study, we did not consider the severity of symptoms of postpartum depression and PTSD, and future studies can investigate its impact.

Study implications

Our results have some specific clinical applications. Since insecure attachment styles are associated with postpartum bonding problems, mother-infant attachment interventions can be suggested for women with insecure attachment who may have future bonding problems. In addition, birth-related symptoms can be stressful, and efforts should be made to reduce these effects on women. Nevertheless, if the interventions aim to improve the mother-infant bond, PTSD and PPD symptoms should be considered. Future research needs to examine the effects of different symptoms on the mother-infant bonding relationship, as well as the role of the nature of the trauma because threats to the infant can have different outcomes on the mother-infant relationship compared to threats to the mother.

5. Conclusion

In short, establishing a motherhood identity can take shape in various ways due to cultural considerations and early experiences. While the process of becoming a mother can vary, the meaning behind this phase of life is rather significant. When an adverse experience or experience occurs early in development, developmental constructs are impacted, especially as they relate to attachment and bonding.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Research Ethics Committee of the [Islamic Azad University of Shiraz](#) (Code: IR.SHIRAZ.REC.1400.044). All ethical principles were considered in this article. The participants were informed about the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information. They were free to leave the study whenever they wished, and if desired, the research results would be available to them.

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Authors' contributions

All authors contributed equally to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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