



# Investigating the Relationship Between Mother-Child Bonding and Maternal Mental Health

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## Abstract

**Background:** Mother-child bonding is rooted in the affective relationship between mother and child that is shaped during pregnancy and leads to the mental growth of infants.

**Objectives:** This study was conducted to determine the relationship between mother-child bonding and maternal mental health in Ilam.

**Methods:** In this descriptive-analytical study, 300 mothers in Ilam were selected using a two-stage cluster sampling method. The demographic characteristics questionnaire, the mother-infant bonding scale, Spielberger anxiety inventory, and edinburgh postnatal depression scale constituted the data collection instruments in this study, which were completed in the eighth to tenth postnatal week. Data were analyzed in SPSS via descriptive statistics (means and standard deviations) and inferential tests (t tests and ANOVA).

**Results:** The results of this study revealed that the mean and standard deviation of the obtained mother-child bonding scores were  $38.48 \pm 12.86$ . Weakened mother-child bonding and risk of child abuse comprised the highest and lowest frequencies, respectively. Mother-child bonding had a statistically significant association with mothers' state anxiety, trait anxiety, and depression, and these variables affected mother-child bonding ( $P < 0.05$ ).

**Conclusions:** Considering the relationship between mother-child bonding and maternal mental health, proper screening is required to pursue secondary prevention in pregnant mothers. In addition, it is essential to perform necessary interventions to improve maternal mental health to facilitate better mother-child bonding.

**Keywords:** Mother-Child Bonding, Stress, Anxiety, Depression, Postpartum

## 1. Background

Mother-child bonding is rooted in the affective dimension of the mother-infant relationship (1), which is shaped during pregnancy and leads to the mental growth and development of infants (2). Mother-child bonding is influenced by different factors, which are as follow: infant-related factors including delayed birth, breastfeeding, physical problems, and restlessness; parental factors including attachment style, physical ailments, postpartum depression, and social support networks; and maternal mental health problems (3, 4).

Mother-child bonding leads to a mother's gentleness, warmth, concern, and care about her child's health and it is characterized by maternal behavior, such as looking at, touching, smiling, and talking with the child (5). In fact, mother-child bonding facilitates children's mental, affective, and social health (6, 7). However, possible disruptions

in the formation of this bond will affect children's development and result in the appearance of complications, such as psychosocial disorders, avoidant personality disorder, separation anxiety disorder, failure to thrive, criminal activity, and/or borderline IQ (8, 9).

In the postpartum period, mothers experience several physiological and psychological changes, which sometimes lead to mental disorders. These postpartum mental disorders cause difficulties for the baby, the mother, and other family members. Also, postpartum depression can be a threat to the health and safety of the mother, the baby, and other family members (10-12). Indeed, postpartum depression is an important mood disorder that is the cause of 12.5% of hospital admissions in women (13, 14). Various factors, such as the instruments used to assess depression, sample size, and cultural background, affect the prevalence of postpartum depression, but the general

prevalence of this disorder has been reported to be high in several studies (14, 15). Anxiety is another common postpartum mood disorder, which is experienced by 20% to 15% of young mothers. If this disorder persists, it can exacerbate the risk of postpartum depression (16-18).

The results of several previous studies have shown that maternal postpartum depression has adverse effects on mother-child bonding and relationships (19). Previous research on the effect of depression in pregnant women has been mainly conducted in relation to mothers' demographic factors or other variables, such as unintended or intended pregnancy and gender of newborns (14), type of delivery (20), impact of anemia on depression (21), gestational diabetes (22), diet (23), and social support (24). Thus, research on the relationship between mother-child bonding and mental health has become more important than ever. Only 2 studies have been performed in Iran on the relationship between mother-child bonding and mental health. In one of these studies, only maternal depression was investigated. Galeshi et al. (2016) assessed maternal depression in Tabriz (25) and Aflakseir and Jamali assessed maternal depression and anxiety in Shiraz (19).

## 2. Objectives

Given the importance of mother-child bonding and the essential role of mental health in maternal health and considering the fact that few studies have been conducted in this field, the present study was conducted to determine the relationship between mother-child bonding and maternal mental health in Ilam in 2016.

## 3. Methods

In the present descriptive-analytical study, those mothers who were referred to the health centers in Ilam in 2016 were assessed. The optimal sample size of 300 participants was selected based on previous studies (25). A two-stage cluster sampling method was implemented in this study. Thus, each of the 10 clinics in Ilam was considered as a cluster, and 30 participants were enrolled in the study from each of the clusters. The inclusion criteria for participation in this study consisted of willingness to participate in the study, being at least literate, and having no history of mental disorder. The exclusion criteria included having a baby who died, the occurrence of an incident such as the death or hospitalization of a family member, and the hospitalization of pregnant women due to delivery complications.

In this study, the data collection instruments included the demographic characteristic questionnaire, the mother-infant bonding scale (19), the Spielberger anxiety

inventory (26), and the Edinburgh postnatal depression scale (25-27), which were completed in the eighth to tenth postnatal week. The mother-infant bonding scale was used for the early diagnosis of mother-child bonding disorder; it contains 25 items with 4 factors: rejection and anger (7 items), anxiety about caring for the baby (4 items), weakened bonding (12 items), and risk of abuse (2 items). The items of this scale are scored using a Likert-type scale from never (0) to always (5). Finally, respondents obtain a score between 0 and 125, with higher scores representing problematic mother-child bonding. Previous studies have confirmed the validity and reliability of this scale (19, 25).

The Spielberger anxiety inventory consists of 40 questions that measure state anxiety (20 items) and trait anxiety (20 items). The items pertaining to state anxiety are scored using a Likert-type scale from very low (1) to very high (4), and the items related to trait anxiety are scored on a Likert-type scale from never (1) to always (4). For this assessment tool, scores between 20 and 40 suggest mild anxiety, scores from 41 to 60 represent moderate anxiety, and scores from 61 to 80 suggest severe anxiety. The reliability of this questionnaire was confirmed in Behrooz Mahram et al.'s study, with a Cronbach's alpha coefficient of 0.91 (26). The Edinburgh Depression Scale contains 10 four-choice questions, with ascending scoring from low to high intensity for items 1, 2, and 4, and descending scoring from high to low intensity for items 3, 5, 6, 7, 8, 9, and 10. In this scale, each item is scored from 0 to 3 and the total scores range from 0 to 30. Mothers who obtain a score above 12 are considered to be depressed. The reliability of this assessment tool was examined and verified in Galeshi et al.'s (2016) study (25, 27).

Considering the ethical aspects of this study, the researcher embarked on conducting the research after obtaining permission from the ethics committee of Ilam University of Medical Sciences. Participants were free to accept or reject participation in the research. The participants in this study were assured that their information would remain confidential and that they would not need to provide their names. Data were analyzed using descriptive statistics (means and standard deviations) and inferential tests (independent t-tests, ANOVA) at a significance level of less than 0.05.

## 4. Results

Table 1 presents the demographic results. As shown in the most mothers (n = 123, 49.2%) were high school graduates (2/49) and were homemakers (n = 114, 45.6%).

The mean scores and standard deviations for the 4 mother-child bonding factors were as follow: risk of abuse ( $2.16 \pm 1.77$ ), anxiety about caring for the baby ( $7.02 \pm 3.55$ ),

**Table 1.** Demographic Profile of Pregnant Mothers

Variable	No. (%)
<b>Education</b>	
Below diploma	78 (31.2)
High school diploma	123 (49.2)
University	49 (19.6)
<b>Occupation</b>	
Housewife	114 (45.6)
Self-employed	42 (16.8)
Employed	63 (11.2)
<b>Income</b>	
Less than 1 million	88 (35.2)
Between 1 and 2 million	89 (35.6)
More than 2 million	31 (12.4)
<b>Number of pregnancies</b>	
1	98 (5.2)
2	103 (5.2)
3 or more	49 (5.2)
<b>Number of deliveries</b>	
1	57 (22.8)
2	48 (19.2)
3 or more	15 (6)
<b>Spousal support</b>	
Low	66 (26.4)
Average	105 (42)
High	79 (31.6)
<b>Support of family members</b>	
Low	13 (5.2)
Average	13 (5.2)
High	13 (5.2)
Age, y	27.04 (6.4)
Duration of marriage, y	2.78 (1.3)

rejection and anger ( $17.16 \pm 8.68$ ), and weakened bonding ( $38.48 \pm 12.86$ ). The average total score for mother-child bonding was  $66.04 \pm 13.98$ .

Table 2 demonstrates the results for maternal anxiety. The results indicate that most women have some degree of anxiety. The mean state anxiety and covert anxiety scores were well above average. The findings revealed a link among mother-child bonding scores and state anxiety and depression, as indicated by significant correlations ( $0 = 0.000$ ).

**Table 2.** Mean Scores for Anxiety of Mothers

Variable	Without	Slight	Moderate	Severe	M $\pm$ SD
<b>Anxiety</b>					
State anxiety	36 (14.4)	43 (17.2)	100 (40)	71 (28.4)	46.23 (23.13)
Covert anxiety	74 (29.6)	55 (22)	84 (33.6)	37 (14.8)	37.52 (23.79)

## 5. Discussion

The findings of this research showed that most of the mothers suffered from a mother-infant bonding disorder. A weakened bond was the most prevalent type and the least common disorder was related to the risk of child abuse. In Galeshi et al.'s (2016) study, which was done in Tabriz (25), the highest and lowest levels of disorder pertained to weakened bond and anxiety about caring for the baby, respectively. In Aflakseir and Jamali's study in Shiraz (19), weakened bond was the most prevalent disorder, which is consistent with the results of this study.

Moreover, most of the mothers in this study were depressed. Similar findings were found in a number of studies: Zangeneh et al.'s study on women in Kermanshah showed that 40.7% of the participants suffered from depression (14); in Ghojzadeh et al.'s study in Tabriz, 34.7% of the participants were depressed (28); Salary et al.'s study in Mashhad indicated that 9.9% of the participants suffered from depression (15); and 23.7% of the participants in Khorramirad et al.'s study in Qom were found to be depressed (13). Various factors, such as living in developing countries and cultural issues, were involved in the high prevalence of depression. In this regard, culture, beliefs, and traditions can affect the incidence of postpartum depression (29, 30).

The results of this study also revealed a statistically significant relationship between depression and mother-child bonding. In other words, with the increase of depression in mothers, mother-child bond disorders will also increase. This finding is consistent with that of the studies conducted by Galeshi et al. in Tabriz (25) and Aflakseir and Jamali in Shiraz (19) in which mother-child bonding disorders increased with the rise of depression in mothers. Bener et al.'s study in Qatar indicated that mothers with depression did not establish a good relationship with their children after childbirth (17). It seems that postpartum depression caused some changes in mother-child bonding, which is consistent with the results of the present study.

One limitation of this study was the employment of self-report measures, which may have affected the accuracy of the data. Therefore, future studies should focus on the diagnosis and clinical examination of depression. An-

other limitation was that father-child bonding was not assessed; thus, future studies should also consider this variable.

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