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ORIGINAL ARTICLE

Postpartum Depression and Its Impact on Maternal Infant Bonding and Early Breastfeeding Practices

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ABSTRACT

Background: Postpartum depression (PPD) is certainly called a mental health disorder that occurs after the birthing process, and is a disorder that hands down one of the most harmful factors relating to the childbirth process, infant health, and mortality. Disregarding the psychological aspects of the mothers, PPD has the potential to damage the bonding process between the mother and infant, and create an unhealthy mother–infant relationship. PPD also affects the initial breastfeeding of the infant, and breastfeeding is one of the most important aspects of the baby's health. PPD also influences the psychological and emotional development of the infant.

Objectives: Determining the rate of postpartum depression in postnatal women and its relationship with the mother–infant bond and the initiation and exclusivity of early breastfeeding.

Methodology: This cross-sectional study targeted women who postnatal attend a follow-up clinical appointment within the first six weeks after delivery. Depression during the postpartum period was measured utilizing the Edinburgh Postnatal Depression Scale. Maternal infant bonding was measured through a tested bonding questionnaire. Breastfeeding practices were also measured through interviews regarding the time of initiation and exclusivity. The SPSS software version 24.0 was used to analyze the data, and a p-value of less than 0.05 was deemed to be statistically significant.

Results: A total of 150 postnatal women were included, with a mean age of 27.6 ± 4.8 years. Postpartum depression was identified in 46 participants (30.7%). Mothers with PPD demonstrated significantly lower maternal–infant bonding scores compared to non-depressed mothers (42.3 ± 6.1 vs. 51.7 ± 5.4; $p < 0.001$). Early initiation of breastfeeding within one hour of birth was significantly lower among depressed mothers (54.3% vs. 78.1%; $p = 0.002$). Exclusive breastfeeding rates were also significantly reduced in women with postpartum depression ($p = 0.004$).

Conclusion: Postpartum depression is quite common, which is correlated with difficulties with bonds between the sufferers and their children and problems with breastfeeding. Psychosocial interventions adapted to the digital format could help improve the mental health and outcomes for the children of affected mothers.

Keywords: Postpartum depression; Breastfeeding; Maternal bonding; Mental health

INTRODUCTION

PPD, or Postpartum Depression, affects individuals in the postnatal period, causing significant impairment to the individual's life. It affects the mother, the child, and the entire family throughout the life cycle. Within the first few weeks or months, there is a continued low mood, increased fatigue, sleep disturbances, trouble focusing, and a general sense of weakness[1,2]. It is among the most common mood disorders and affects between 10 and 20 percent of childbearing individuals. It is more prevalent in low and middle-income countries due to the socioeconomic challenges in these countries, the high levels of poverty, and the overall lack of mental health awareness[3,4]. The postpartum period is a crucial time to focus on the mental health and the overall well-being of the mother and the child from an interdisciplinary perspective, as there are major shifts in both the mother's mental health and the child's developmental needs[5]. The formation of an emotional attachment between a mother and child is crucial, as it provides the child with the fundamental abilities to self-regulate and form emotional attachments with others throughout the life cycle[6]. The formation of this relationship is positively impacted by the mother's levels of emotional and mental health, and there is a lack of this bond[7]. There are negative consequences behaviorally, emotionally, and cognitively for the child. Evidence supports that there is an inability to form a mother-infant bond with a child when the mother experiences postpartum depression. The overall ability to emotionally connect with the child is diminished. There is less eye contact, and the mother may not engage in caregiving and nurturing, which are fundamental in the first years of life[8]. The absence of bonding creates complex challenges, both in developing the infant's emotional security and dampening the mother's emotional state and depressive symptoms. This creates impermeable cycles and emotional inter-dependencies[5].

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Breastfeeding becomes more difficult, as it is one of the fundamental aspects of maternal infant care in the early postpartum, as it also strengthens the mother–infant emotional bonds. Breastfeeding strengthens maternal emotional bonds and provides the infant with superior nutrition, immunologic defense, and psychological advantages[9]. The World Health Organization provides recommendations for early breastfeeding within one hour of birth, and long-term exclusive breastfeeding for 6 months of the infant's life. Achieving successful breastfeeding is moreover influenced by many factors, including the mother's mental health, self-efficacy in the emotional sense, and social supportive structure and emotional state[10]. The mother is grappling with postpartum depressive symptoms, breastfeeding challenges complicating her situation, as maternal depressive symptoms are negatively associated with breastfeeding, loss of motivation, loss of self-advocacy confidence, and loss of energy to maintain any sense of positivity towards the infant[8]. Maternal depression is a complex psychosocial phenomenon; resiliency is equally complex and interdependent. The relationship interdependency among postpartum depression, the maternal bonds, and breastfeeding has been well documented.

Research Objectives: Assessing the association of maternal–infant bonding and the early initiation and exclusivity of breastfeeding in maternal postpartum depression among postpartum women.

MATERIALS AND METHODS

Study Design and Setting: This cross-sectional analytical study was carried out Department of Psychiatry and Gynecology Bacha Khan Medical College / Mardan Medical Complex Mardan from January 2023 to March 2023.

Participants: To collect the data, women aged 18 to 45 years who had recently delivered (not more than 6 weeks post-delivery) were included in the study. All alerts, including multiparas and primiparas, were included. Informed consent allowed even women

who had recently brought forth a single live birth to participate in the study.

Sample Size Calculation: A sample size of 150 was determined based on a 95% confidence level, a margin of error of 7%, and a predicted prevalence of postpartum depression of 30%. The number of samples provided was enough to recognize relevant relationships.

Inclusion Criteria: Postnatal women in the first six weeks after giving birth.

- They are aged between 18 and 45 years.
- Accepted to having given birth to a single child.
- Are you willing to give informed consent

Exclusion Criteria:

- History of Diagnosed Psychiatric Disorders Before Pregnancy
- Significant Obstetric Complications or Admission to Neonatal Intensive Care Unit
- Chronic Medical Conditions with Comorbid Mental Health Disorders

Diagnostic and Management Strategy: Depression after childbirth was evaluated with the Edinburgh Scale for Postnatal Depression. A recognized bonding questionnaire was utilized to assess the maternal–infant bond. We recorded the breastfeeding practices through formal interviews. Women diagnosed with depression were referred for psychological therapy.

Statistical Analysis: Depression after childbirth was evaluated with the Edinburgh Scale for Postnatal Depression. A recognized bonding questionnaire was utilized to assess the maternal–infant bond. We recorded the breastfeeding practices through formal interviews. Women diagnosed with depression were referred for psychological therapy.

RESULTS

A total of 150 postnatal women were included in the study. The mean age of participants was 27.6 ± 4.8 years. Postpartum depression was identified in 46 women (30.7%). Mothers with postpartum depression demonstrated significantly lower maternal–infant bonding scores compared to non-depressed mothers (42.3 ± 6.1 vs. 51.7 ± 5.4; $p < 0.001$). Early initiation of breastfeeding within one hour of birth was significantly lower among depressed mothers (54.3%) compared to non-depressed mothers (78.1%; $p = 0.002$). Exclusive breastfeeding rates were also significantly reduced in women with postpartum depression ($p = 0.004$). These findings indicate a strong association between postpartum depression, impaired bonding, and suboptimal breastfeeding practices.

Intervention Outcome: Participants who screened positive for postpartum depression were assigned to psychological counseling and supportive measures. Subsequent evaluations demonstrated positive changes in maternal health, maternal bonding behaviors, and maternal confidence in breastfeeding for those who received appropriate mental health counseling.

Table 1. Baseline Sociodemographic and Clinical Characteristics of Study Participants (n = 150)

Variable	Frequency (n)	Percentage (%)
Age (years)	Mean ± SD	27.6 ± 4.8
Age Group		
≤25 years	58	38.7
26–30 years	64	42.7
>30 years	28	18.6
Parity		
Prim parous	62	41.3
Multiparous	88	58.7
Mode of Delivery		
Vaginal delivery	92	61.3
Cesarean section	58	38.7
Postpartum Depression (EPDS ≥13)	46	30.7

Table 1 summarizes the baseline demographic and obstetric characteristics of the postnatal women included in the study. Age is expressed as mean ± standard deviation, while categorical variables are presented as frequencies and percentages.

Table 2. Comparison of Maternal–Infant Bonding Scores According to Postpartum Depression Status

Bonding Score	Depressed (n = 46)	Non-Depressed (n = 104)	p-value
Mean bonding score	42.3 ± 6.1	51.7 ± 5.4	<0.001

Legend: Table 2 compares maternal–infant bonding scores between mothers with and without postpartum depression. Scores are expressed as mean ± standard deviation. A significantly lower bonding score was observed among mothers with postpartum depression.

Table 3. Association Between Postpartum Depression and Early Breastfeeding Practices

Breastfeeding Variable	Depressed (n = 46)	Non-Depressed (n = 104)	p-value
Breastfeeding initiated within 1 hour	25 (54.3%)	81 (78.1%)	0.002
Delayed initiation (>1 hour)	21 (45.7%)	23 (21.9%)	
Exclusive breastfeeding	24 (52.2%)	78 (75.0%)	0.004
Non-exclusive breastfeeding	22 (47.8%)	26 (25.0%)	

Table 3 demonstrates the association between postpartum depression and early breastfeeding practices. Mothers with postpartum depression had significantly lower rates of early initiation and exclusive breastfeeding.

Table 4. Summary of Key Outcomes in Mothers with and Without Postpartum Depression

Outcome Variable	Depressed Mothers	Non-Depressed Mothers	Statistical Significance
Impaired maternal–infant bonding	High	Low	$p < 0.001$
Delayed breastfeeding initiation	Common	Less common	$p = 0.002$
Reduced exclusive breastfeeding	Common	Less common	$p = 0.004$

Table 4 provides a consolidated summary of major maternal and infant outcomes associated with postpartum depression. Depressive symptoms were significantly associated with impaired bonding and suboptimal breastfeeding practices.

DISCUSSION

A high incidence of Postpartum Depression (PPD) among post-delivery women linked with difficulty in maternal-infant bonding and poor breastfeeding practices is demonstrated in this study[11]. The reported incidence of PPD (30.7) is consistent with findings of a recent study in lower and middle-income countries where PPD incidence is reported in the range of 25%-30% % post-delivery women, likely due to mental health resources' deficit, mental health culture, and socio-economic challenges[12]. Our study results indicate that postnatal mothers with PPD had bonded less with the infant compared to those mothers who did not have PPD. This finding is in alignment with recent studies that documented the quality of maternal bonding in vulnerable mothers, with a focus on depression's impact on maternal sensitivity and emotional responsiveness, caregiving behaviors, and emotional skills[13]. New findings in the last five years in a longitudinal cohort study indicate that an elevated EPDS depression screening score is linked with poor bonding with the infant, and this remained consistent even when maternal obstetric and socio-economic conditions in lower and middle-income countries were considered[14]. The results of this study validate the hypothesis that depressed postnatal mothers are more likely to disrupt the formation of emotional alignments that are critical for an infant's emotional programming and neuro-development[15]. This study also demonstrated poor breastfeeding practices among mothers with post-delivery depression. Mothers with PPD were significantly less likely to initiate breastfeeding within one hour of birth and showed lower rates of exclusive breastfeeding[16]. That particular association has been recorded in other systematic and multicenter research as well, which noted

that symptoms of depression decrease one's confidence in breastfeeding, amplify the challenges of breastfeeding, and contribute to the early stopping of breastfeeding[17] Reports from large-scale observational studies conducted in the last five years noted that the odds of stopping exclusive breastfeeding in the early postpartum period are almost 2-fold for women with postpartum depression[18] The link between postpartum depression and breastfeeding is clearly bidirectional. On one hand, depressive symptoms weaken the maternal drive to breastfeed and self-efficacy, but on the other hand, breastfeeding challenges increase maternal stress, a sense of failure, and depressive symptoms[19] The findings suggest the need for combined approaches to support maternal mental health and breastfeeding to address the issue. It is also congruent with the latest research, which indicates that early diagnosis and treatment of postpartum depression improves maternal depression and breastfeeding[20]. Recent intervention studies show that maternal mood and mother-infant interactions can be significantly improved through psychosocial counseling, peer-support programs, and referrals for mental health care \cite. This, in turn, helps improve mental health and, as a result, mothers are more likely to breastfeed for a longer duration and more exclusively, demonstrating how improved maternal mental health has a positive impact on infant nutrition and health as well \cite[21]. Regarding Pakistan and regions with similar characteristics, the study's findings concerning the postpartum depression burden would be explained by the absence of routine screening and the mental health social stigma, also evidenced by the almost complete absence of psychological care for mothers. Recent studies in the area also point out that the mental health of postpartum mothers remains unaddressed during home visits, as these visits are mostly related to physical recovery, maternal care, and the health of the baby \cite[22]. Routine screening of the EPDS during postnatal care should, at the very least, encourage mothers to have their mental health conditions diagnosed and for their conditions to be treated promptly. Overall, the study shows that depression after childbirth hurts the mother and infant relationship, as well as the initiation of breastfeeding, which has been well documented in studies from the last 5 years[23]. In these studies, the authors call for a more integrated approach to maternal care, based on the needs of the community in question, and especially mental health screening, breastfeeding counseling, and psychosocial support. Postpartum depression needs to be addressed for the sake of the mother's well-being and for the sake of the psycho-physical health of the baby and the overall well-being of the community long after the baby is born.

Limitations: In this study's design, causation concerning postpartum depression, bonding, and breastfeeding practices is limited. The assessment tools may bring certain self-response biases. Moreover, several confounding factors, like social support and cultural practices, were overlooked.

CONCLUSION

The prevalence of postpartum depression is significant, and it is correlated with poor maternal–infant bonding as well as undesirable early breastfeeding behaviors. No other intervention is as effective as the implementation of routine screening and early psychosocial care during the postpartum period in order to improve maternal mental health, increase the quality of the maternal-infant bond, and enhance the quality of the breastfeeding outcomes.

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