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Evaluation of Depression and Mother–Infant Attachment in the Postpartum Period: The Case of Somalia

Handan Özcan¹ | Ayşe Çuvadar² | Adow Nur Sharif³ | Naimo Mahdi Sheikh Ibrahim³

¹Department of Midwifery, University of Health Sciences Faculty of Health Sciences, İstanbul, Turkey | ²Department of Midwifery, Karabük University, Faculty of Health Sciences, Karabük, Turkey | ³University of Health Sciences, Somalia Mogadishu Recep Tayyip Erdoğan Faculty of Health Sciences, Mogadishu, Somalia

Correspondence: Ayşe Çuvadar (aysecuvadar@karabuk.edu.tr)

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ABSTRACT

Aim: This study evaluated postpartum depression levels among mothers in Somalia and examined its impact on mother–infant attachment.

Methods: This descriptive correlational study was conducted at a training and research hospital in Mogadishu, involving a sample of 178 postpartum women. Data were collected using a “Personal Information Form” for demographics, the “Beck Depression Inventory” to measure depression levels, and the “Maternal Attachment Inventory” for maternal attachment characteristics. Statistical analysis using SPSS 26 software indicated significance at $p < 0.05$.

Results: The results revealed moderate depression symptoms and low maternal attachment levels among the participants. Higher depression and attachment scores were observed among university graduates, employees, and those with planned pregnancies ($p < 0.05$). Furthermore, a weak positive relationship existed between the Beck Depression Inventory and the Maternal Attachment Inventory scores ($r = 0.282$, $p < 0.001$).

Conclusion: The results suggest the importance of recognizing and intervening in postpartum depression early, with a focus on identifying contributing factors and emphasizing the need for targeted counseling to enhance maternal attachment.

1 | Introduction

Pregnancy and childbirth stand as pivotal life events for women, initiating profound shifts in roles and responsibilities. The postnatal period, characterized by significant adjustments, poses an increased risk for postpartum depression (PPD). Acknowledged as a severe mental health concern [1], the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-V) defines PPD as a major depressive episode “beginning during birth,” with mood symptoms emerging during pregnancy or after the 4th week. However, in practical terms, PPD is often recognized within a broader timeframe, spanning from 4 weeks to

12 months post-birth [2]. Clinically, PPD may also be identified by surpassing a defined threshold on screening measures like the Edinburgh Postnatal Depression Scale [3]. Even when not meeting the full criteria for a major depressive episode, persistent depressive symptoms for up to a year postpartum can significantly impact maternal, child, and familial well-being [4].

PPD typically manifests within 4 to 6 weeks after childbirth, presenting as symptoms associated with a major depressive disorder like depressed mood, loss of interest in activities, sleep disturbances, decreased concentration, appetite changes, loss of energy, feelings of worthlessness or guilt, irritability, anxiety,

and, in severe cases, suicidal thoughts [1]. Left untreated, PPD poses negative consequences for both infants and mothers [5]. The prevalence of PPD varies globally, influenced by factors such as diagnostic criteria, screening tools, and cultural contexts [1]. Developed countries report prevalence rates ranging from 1.9% to 82.1%, with variations observed between nations, such as the lowest prevalence in Germany and the highest in the United States [6].

Mother-infant attachment is a vital process where a mother forms an emotional connection, offering protection and care to her infant. The quality of this attachment significantly influences the child's health and development, as well as the mental health and well-being of the mother [7, 8]. Mother-infant attachment, an emotional relationship initiated in the earliest moments of life, evolves between the baby and the mother, with its development susceptible to the social and psychological status of the mother during the postnatal period [9, 10]. Mothers experiencing high anxiety and depressive symptoms tend to exhibit lower levels of maternal attachment and sensitivity toward their infants [11]. When mothers experience mental health challenges, they may exhibit reluctance in caring for their infants, which can manifest as leaving the baby alone and showing a lack of both verbal and non-verbal affection. Such circumstances can contribute to a range of developmental issues in the infant, affecting physical, mental, emotional, social, and even language development [10].

Recent findings from a systematic review indicate that the relationship between maternal depression and infant attachment is complex and dynamic. Future studies in this field should consider potential confounding factors and adopt a multifactorial and prospective approach when designing research protocols. Additionally, more studies should aim to include a broader range of cultural and ethnic diversity in their samples [12]. In line with this need, the present study was designed to examine the effects of PPD among mothers within Somali culture and to assess how this condition influences mother-infant attachment.

1.1 | Research Question

What are the levels of PPD among mothers in Somalia, and how does this depression affect mother-infant attachment?

2 | Methods

2.1 | Type of Research

The research is a descriptive-correlational study.

2.2 | The Location and Time of the Study

The study was conducted between March 2023 and March 2024 at the Mogadishu, Somali-Türkiye Recep Tayyip Erdoğan Training and Research Hospital.

2.3 | Population and Sample of the Study

The study focused on women who underwent childbirth at Mogadishu Somalia-Türkiye Recep Tayyip Erdoğan Training and Research Hospital. To determine the study sample, a two-tailed hypothesis was employed, and the required sample size was calculated using the G*Power 3.1.9.7 software [13], based on the correlation coefficient. The calculation assumed a medium effect size ($r = 0.30$), a 5% margin of error ($\alpha = 0.05$), and 95% statistical power ($1 - \beta = 0.95$). As a result, it was determined that a minimum of 138 participants would be required for the study. The literature indicates that, in studies with relatively small populations, selecting a sample size larger than the minimum requirement can enhance representativeness and improve the reliability and validity of the findings [14]. Accordingly, a total of 178 women were voluntarily included in the study.

2.3.1 | Inclusion Criteria

The inclusion criteria were giving birth at Research Hospital in Mogadishu, Somalia, completing the 1-month postpartum period, being proficient in English, having no risky conditions, having no history of psychological disorders, and agreeing to participate in the study.

2.3.2 | Exclusion Criteria

The exclusion criteria were withdrawing from the study for any reason.

2.4 | Data Collection Tools

The data collection involved three stages, utilizing the following instruments: the 38-question "Personal Information Form," the twenty-one-question "Beck Depression Inventory," and the twenty-six-question "Maternal Attachment Inventory." Since Somali people actively use Somali and English, the original English versions of the questionnaire and scales were used.

2.4.1 | Personal Information Form

It is a questionnaire consisting of 38 items regarding socio-demographic, obstetric, and birth outcomes.

2.4.2 | The Beck Depression Inventory (BDI)

Developed by Beck et al. in 1961, the BDI gained widespread use, with translations into numerous languages and applications in over 2000 studies [15]. Although the Beck Depression Inventory (BDI) is not a diagnostic tool for depression, it is designed to quantify the severity of depressive symptoms. The scale consists of 21 items, each presenting four graded statements that describe varying intensities of depressive states, with scores ranging from 0 to 3 for each item. The cumulative score

(0–63) provides insights into the respondent's level of depression. Scores falling within 0–16 indicate mild depressive symptoms, 17–29 indicate moderate symptoms, and 30–63 indicate severe symptoms. A score exceeding 17 points signifies a risk of depression. In this study, Cronbach's α was 0.95.

2.4.3 | The Maternal Attachment Inventory (MAI)

Designed as a self-administered tool to determine maternal emotions and behaviors reflective of affection, the MAI is suitable for women proficient in reading, writing, and comprehension. Developed by Müller in 1994 [16], the scale assesses maternal affectionate attachment through a 4-point Likert-type system with 26 items, each ranging from “always” to “never.” Each item is assigned a numerical value: Always (a) = 4 points; Frequently (b) = 3 points; Sometimes (c) = 2 points; and Never (d) = 1 point. The cumulative score, derived from the sum of all items, indicates the overall level of maternal attachment, with higher scores indicating greater attachment. The lowest possible score on the scale is 26, while the highest is 104. The scale has no cut-off score. In this study, Cronbach's α was found to be 0.88.

2.5 | Ethical Approval

Approval was obtained from the Ethics Committee of Recep Tayyip Erdoğan Training and Research Hospital before conducting the study (date: 19/12/2022; number: MSTH/12755). Necessary permissions for the measurement tools used in the study were obtained. Participants were informed about the purpose of the study following the Helsinki Declaration and were invited to participate voluntarily. Written consent forms were obtained from all participants.

2.6 | Statistical Method(s)

The research data were analyzed using the SPSS-26 program with error checks, tabulation, and statistical assessments.

Statistical evaluations were presented using both numerical values and percentages, accompanied by normality assessments. To evaluate the distribution of the data, histogram plots, skewness, kurtosis values, and the Kolmogorov-Smirnov test were employed to assess conformity with the normal distribution. The variables did not follow a normal distribution; therefore, non-parametric tests were preferred for data that did not meet the assumptions of parametric tests. Accordingly, the Mann-Whitney *U* and Kruskal-Wallis tests were used for group comparisons, while Spearman correlation analysis was employed to examine relationships between variables. Additionally, effect sizes and confidence intervals were considered in the interpretation of the findings. Appropriate statistical analyses were selected based on the results of normality assessments, and a significance level of $p < 0.05$ was considered for all statistical tests.

3 | Results

The mean age of the female participants was 27.17 ± 4.37 , while the mean age of their spouses was 33.23 ± 8.45 . Regarding educational attainment, 21.9% of the women held a bachelor's degree, 17.4% were employed, and 51.7% had an extended family. 86% reported a kinship relationship with their husbands, and 12.9% had no chronic disease. The mean number of pregnancies among the women was 5.10 ± 2.79 , 36.5% had a history of stillbirth, 42.1% had a history of miscarriage, 18.5% had a history of preterm birth, and 15.7% had a history of an anomalous baby. The last mode of delivery was vaginal delivery in 75.3% of the women, and 36% had a planned pregnancy (Table 1). The gender of the child was important for 32% of the women, 39.3% had tetanus vaccination, and 83.1% received support from their husbands during pregnancy. Women felt happy (45.9%), emotional (24.2%), and very excited (24.2%), especially when they breastfed their babies (Table 2).

The mean total score on the Beck Depression Inventory was 25.76 ± 9.67 , indicating moderate levels of depressive symptoms. The “Maternal Attachment Inventory” scores range from a minimum of 26 to a maximum of 104. In the present study,

TABLE 1 | Obstetric characteristics of women ($n = 178$).

Variables	Mean $\pm$ SD (min-max)	Variables	Mean $\pm$ SD (min-max)
Number of births	4.65 ± 2.70 (1–14)	Number of living children	4.25 ± 2.36 (0–10)
Number of pregnancies	5.10 ± 2.79 (0–15)	Number of abortions	0.35 ± 0.64 (0–4)
Stillbirth/infant loss	<i>n</i> (%)	Number of miscarriages	<i>n</i> (%)
Yes	65 (36.5)	Yes	75 (42.1)
No	113 (63.5)	No	103 (57.9)
History of preterm birth	<i>n</i> (%)	History of anomalies	<i>n</i> (%)
Yes	33 (18.5)	Yes	28 (15.7)
No	145 (81.5)	No	150 (84.3)
Mode of last birth	<i>n</i> (%)	Planning the last pregnancy	<i>n</i> (%)
Vaginal	134 (75.3)	Yes	64 (36.0)
Caesarean section	44 (24.7)	No	114 (64.0)

Abbreviation: SD, standard deviation

TABLE 2 | Some characteristics of women about the newborn and pregnancy.

	Mean $\pm$ SD
First contact time after birth (min)	41.43 $\pm$ 42.78
	<i>n</i> (%)
Importance of the gender of the baby	
Yes	57 (32)
No	121 (68)
Having trouble visiting a doctor during pregnancy	
Yes	14 (7.9)
No	164 (92.1)
Vaccinations during pregnancy	
Influenza	2 (1.1)
Tetanus	70 (39.3)
Hepatitis	26 (14.6)
Changes in the relationship with the partner after conception	
No	124 (69.7)
Positive changes	40 (22.5)
Negative changes	14 (7.9)
Support from the partner during pregnancy	
Yes	148 (83.1)
No	30 (16.9)
Having supporters during pregnancy	
Yes	156 (87.6)
No	21 (11.8)
Experiencing any problems in the postnatal period	
Yes	35 (19.7)
No	143 (80.3)
Experiencing any problems in the postnatal period	
Yes	20 (11.2)
No	152 (85.4)
Any complications in the baby	
Yes	19 (10.7)
No	159 (89.3)
Emotions at the first breastfeeding of the baby	
Fear, stress	7 (3.9)
Worry	4 (1.8)
Feeling very excited	43 (24.2)
Feeling emotional	43 (24.2)
Feeling happy	81 (45.9)

Abbreviation: SD, standard deviation

the mean attachment score was found to be 35.43 ± 8.38 . This value may be considered relatively lower when compared to sample means reported in some studies that have used similar scales to assess maternal attachment levels. Accordingly, the

findings of this study indicate low levels of maternal attachment [17, 18].

There are significant differences between the educational status of the women and depression and attachment scale scores. University graduate women had higher rates of depression and attachment than the other groups ($p < 0.05$). The effect size for the relationship between educational level and depression was very small ($\eta^2 = 0.0016$), whereas the effect size for the attachment scale indicated a moderate relationship ($\eta^2 = 0.082$). The levels of depression and attachment were higher among employed women than housewives and retirees ($p < 0.05$); for depression, this relationship showed a large effect size ($\eta^2 = 0.156$). Depression scores were higher among women who had a kinship with their spouses, with an effect size of $r = 0.23$, indicating a small-to-moderate effect (Table 3).

Depression and attachment scale scores differed significantly according to pregnancy planning status. Women with planned pregnancies had higher levels of depression and attachment than those with unplanned pregnancies ($p < 0.05$). For women with planned pregnancies, the effect size was $r = 0.30$ for depression (moderate effect) and $r = 0.17$ for attachment (small effect). Attachment scores were also higher among women who considered the baby's gender important ($p < 0.05$; $r = 0.13$). In addition, women who had a cesarean delivery reported higher attachment scores than those who had a vaginal delivery ($p < 0.05$, Table 4), with an effect size of $r = 0.20$.

Significant differences emerged in attachment and depression scores among women who received spousal support compared to those who did not. Those lacking spousal support exhibited higher attachment and depression scores than their counterparts ($p < 0.05$). This relationship was determined to have an effect size of $r = 0.28$ (moderate effect) for depression and $r = 0.24$ (small-to-moderate effect) for attachment.

Women who experienced complications during delivery had significantly higher depression scores than those who did not, with an effect size of $r = 0.20$. Similarly, women who encountered postpartum complications also showed higher depression scores ($r = 0.21$) ($p < 0.05$, Table 4).

Spearman's correlation analysis explored the relationship between the BEI and the MAI scores, revealing a weak positive correlation ($r = 0.282$, $p < 0.001$). The 95% confidence interval for this relationship was found to range between 0.14 and 0.41, indicating that the association is statistically significant and consistent.

4 | Discussion

PPD significantly affects mothers' psychological health, quality of life, and interactions with their infants, partners, and relatives. Depressed women often find themselves in a vicious cycle where they become increasingly sad and angry, while their sense of competence diminishes. The accumulation of these factors creates an environment that is not conducive to the personal development of mothers or the optimal development of their children [1]. Timely diagnosis and intervention for PPD

TABLE 3 | Mean total scores of the beck depression inventory and maternal attachment inventory of women.

Variables	N	Min-max scores to be obtained	Participants' min-max scores	Mean $\pm$ SD
Beck depression inventory	178	0–63	20–60	25.76 $\pm$ 9.67
Mild	—	0–16	—	—
Moderate	139	17–29	20–27	21.10 $\pm$ 1.33
Severe	39	30–63	30–60	42.36 $\pm$ 8.29
The maternal attachment inventory	178	26–104	26–68	35.43 $\pm$ 8.38

Abbreviation: SD, standard deviation

are crucial for the well-being of the mother, newborn, and the entire family, ensuring successful navigation through this period without negative consequences [9]. This study evaluated the impact of PPD on mother-infant attachment within the Somali culture and revealed that women exhibited moderate depression symptoms and lower levels of maternal attachment. Interestingly, a study in Türkiye found low levels of PPD and high levels of maternal attachment [9], while a study in Iran reported high attachment levels and low depression levels [19]. These differences may stem from cultural and socioeconomic variations, as well as differences in social support systems and societal expectations among mothers.

Severe or chronic maternal depression poses a higher risk to children's development than mild depression [1]. Current literature has indicated a negative relationship between PPD and mother-infant attachment [10, 20, 21]. However, in our study, a slight increase in attachment levels was observed as depression levels increased, indicating a weak positive correlation between depression and attachment. This finding contradicts the existing literature and may be interpreted in various ways. Primarily, the results may be explained by the fact that most women in our sample live within extended family structures and receive strong social support from their close surroundings. Social support during the postpartum period both reduces the impact of depressive symptoms and strengthens mother-infant attachment [22, 23]. Additionally, in a country like Somalia, which experiences ongoing internal conflicts and has limited socioeconomic resources, individuals' coping mechanisms may be shaped by cultural fatalism, solidarity, and belief systems. However, these explanations remain at the hypothesis level, as our study did not collect data to support these relationships. Therefore, alternative explanations should also be considered. For instance, social desirability bias may be present, whereby mothers might have tended to respond to societal expectations related to motherhood roles. Similarly, reporting bias and low awareness of the effects of depression could have influenced the results of the scales used. Furthermore, the cultural validity and psychometric properties of the scales used should be taken into consideration. Although validity and reliability studies have been conducted for these instruments, it should be noted that inventories measuring complex structures like attachment may be subject to contextual meaning shifts. Future research is recommended to conduct more in-depth analyses by testing models that examine the mediating or moderating effects of variables such as social support, religious coping strategies, and family structure in the relationship between depression and attachment.

Literature suggests a correlation between age and PPD. Younger mothers are noted to face a higher risk of PPD than their older counterparts [24, 25]. A study exploring the interplay of demographic factors such as race, age, and economic status with prenatal and postnatal depressive symptoms identified age as the most influential factor affecting PPD [26]. However, no direct link was reported between age and depression, despite higher depression scores among women under 25 in another study [10]. In the present study, no significant relationship was found between age and depression.

In the present study, depression scores were significantly higher among working mothers and those with a university education. This finding contrasts with a study conducted in Türkiye, which indicated no significant association between depression and factors such as employment status and education level [10]. Other studies in the literature [23, 27] have reported high depression scores among mothers who are housewives and not employed. The high depression scores among working mothers in our study could be attributed to factors such as reduced time spent with their families and infants. Additionally, the challenges faced by working mothers in a country experiencing civil unrest, coupled with livelihood concerns, may contribute to symptoms of depression.

The precise cause of PPD remains elusive. While the literature suggests that unplanned pregnancies can lead to PPD [27–29], our study yielded a contrary result. Surprisingly, in our investigation, depression scores exhibited a positive correlation with planned pregnancies. However, it was also noted that planned pregnancies coincided with increased maternal attachment, aligning with existing literature that highlights a positive relationship between planned pregnancies and maternal attachment [10, 30]. In the study, the high level of depression in planned pregnancies is theorized to be linked to the high fertility rates in Somalia. In the context of Somali conditions, a woman with a planned pregnancy may necessitate additional care or health services, potentially increasing her vulnerability to depression.

Furthermore, the study found that women who placed importance on the baby's gender exhibited higher levels of depression. Social pressures or stigmas related to gender might impose additional stress, particularly on mothers with specific gender preferences for their babies, potentially contributing to high depression scores. Notably, a study conducted in Türkiye found no significant relationship between infant gender and PPD [10].

TABLE 4 | The effect of socio-demographic characteristics of the women on the mean scale scores.

Variables	<i>n</i>	The beck depression inventory <i>r</i> /mean $\pm$ SD	The maternal attachment inventory <i>r</i> /mean $\pm$ SD
Age		$r_s = -0.70$ $p: 351$	$r_s = -0.125$ $p: 095$
Education level (<i>n</i>)			
Illiterate ^a	49	23.61 $\pm$ 1.16	35.89 $\pm$ 0.97
Primary school ^b	16	25.25 $\pm$ 2.23	34.87 $\pm$ 2.43
Secondary school ^c	34	22.00 $\pm$ 0.60	32.79 $\pm$ 0.74
High school ^d	40	24.97 $\pm$ 1.53	32.95 $\pm$ 1.02
University ^e	39	32.76 $\pm$ 1.90	39.92 $\pm$ 1.87
Test value		$\chi^2: 4.269$ $p = 0.001$ $e > a, b, d$	$\chi^2: 14.995$ $p = 0.005$ $e > c, d$
Employment			
Yes ^a	31	34.09 $\pm$ 2.32	39.51 $\pm$ 2.16
Retired ^b	19	21.36 $\pm$ 0.72	36.57 $\pm$ 1.57
Housewife ^c	128	24.39 $\pm$ 0.72	34.27 $\pm$ 0.63
Test value		$\chi^2: 29.337$ $p = 0.001$ $a > b, c$	$\chi^2: 6.832$ $p = 0.033$ $a > c$
Consanguinity with the Spouse			
Yes	153	24.42 $\pm$ 0.67	34.63 $\pm$ 0.56
No	25	33.96 $\pm$ 2.62	40.32 $\pm$ 2.68
Test value		$Z: -3.036$ $p = 0.002$	$Z: -1.480$ $p = 0.139$
Planned Pregnancy			
Yes	64	28.73 $\pm$ 1.31	36.04 $\pm$ 1.46
No	114	24.07 $\pm$ 0.81	35.08 $\pm$ 0.53
Test value		$Z: -4.017$ $p = 0.001$	$Z: -2.235$ $p = 0.025$
Giving importance to the gender of the baby			
Yes	57	29.87 $\pm$ 1.58	38.12 $\pm$ 1.49
No	121	23.82 $\pm$ 0.69	34.16 $\pm$ 0.56
Test value		$Z: -2.299$ $p = 0.021$	$Z: -1.493$ $p = 0.135$
Mode of birth			
Vaginal	134	25.31 $\pm$ 0.76	34.38 $\pm$ 0.63
Cesarean section	44	27.13 $\pm$ 1.77	38.61 $\pm$ 1.57
Test value		$Z: -0.76$ $p = 0.939$	$Z: -2.676$ $p = 0.007$
Receiving spousal support			
Yes	148	23.88 $\pm$ 0.57	34.43 $\pm$ 0.61
No	30	35.03 $\pm$ 2.68	40.33 $\pm$ 1.99
Test value		$Z: -3.743$ $p = 0.001$	$Z: -3.249$ $p = 0.001$
Difficulties during birth			
Yes	35	29.45 $\pm$ 2.11	36.48 $\pm$ 1.96

(Continues)

TABLE 4 | (Continued)

Variables	<i>n</i>	The beck depression inventory <i>r</i> /mean $\pm$ SD	The maternal attachment inventory <i>r</i> /mean $\pm$ SD
No	143	24.86 $\pm$ 0.72	35.17 $\pm$ 0.62
Test value		Z: -2.662 <i>p</i> = 0.008	Z: -0.821 <i>p</i> = 0.412
Postpartum difficulties			
Yes	20	31.35 $\pm$ 2.94	38.15 $\pm$ 2.90
No	152	24.76 $\pm$ 0.69	35.00 $\pm$ 0.59
Test value		Z: -2.786 <i>p</i> = 0.005	Z: -0.32 <i>p</i> = 0.777

Note: χ^2 Kruskal Wallis Test, r_s Spearman Correlation Test, Z Mann-Whitney U Test.

The correlation between the mode of birth and PPD remains a subject of debate. Some studies suggest that a caesarean section may be a factor increasing the risk of PPD [31–33]. In our study, although depression scale scores were higher in women who underwent a caesarean section, no significant relationship was established. Women who had a caesarean section displayed higher mean MAI scores than those who gave birth vaginally. This finding contrasts with the results reported by Çankaya et al., who stated that contrary to our study, women who gave birth vaginally had higher mean MAI scores [10]. In contrast to these findings, there is a study reporting that the mode of delivery does not affect the MAI scores [34]. The study, along with existing literature, reveals divergent effects of the mode of delivery on maternal attachment.

Notably, women lacking spousal support during the postnatal period exhibited high mean depression scores alongside high levels of maternal attachment. Previous research has reported increased PPD among women with strained spousal relationships and inadequate support in baby care [10], emphasizing the crucial role of spousal support in postnatal management. Social support, highlighted as essential for sustaining and enhancing infant attachment during the prenatal and postnatal periods [35, 36], underscores the significance of a supportive network. However, contrary to the prevailing literature, this study found higher mean MAI scores among mothers lacking spousal support, suggesting potential support from other family members within the extended family structure.

While the depression scores were high among mothers facing challenges during labor and the postpartum period, no significant difference was observed in their maternal attachment status. Research indicates that complications during a woman's pregnancy, childbirth, and postpartum stages heighten the risk of depression in the postpartum period [10, 37]. A systematic review from 2020 identified high-risk groups as participants with psychosocial and/or socio-demographic risk factors. For example, mothers with poor financial situations, adolescent mothers, mothers with a history of stillbirth, and mothers of very low birth weight infants are considered high-risk groups [12]. Mothers undergoing risky pregnancy, birth, and postpartum situations should undergo close monitoring for depression. Although the average scores on the MAI were higher for mothers encountering issues during and after birth, this

difference did not reach statistical significance. Other studies have noted that mothers facing postnatal complications exhibit notably low mean MAI scores [10, 22].

The effectiveness of touch-based interventions to strengthen mother-infant bonding among mothers experiencing high levels of PPD has been increasingly emphasized in the literature. Specifically, skin-to-skin contact, kangaroo care, and sensory approaches involving emotional touch contribute to reducing stress in both mother and infant, increasing oxytocin levels, and enhancing bonding [38, 39]. Initiating these interventions early supports the development of secure attachment between mother and infant, thereby mitigating the negative effects of PPD on bonding. Moreover, these interventions stand out as cost-effective, accessible, and sustainable strategies, particularly in low- and middle-income countries where mental health services are limited. Studies focusing on the neurobiological foundations of emotional touch have shown that such interventions can have lasting effects on nervous system development, stress responses, and social relational abilities [40]. In this context, integrating these types of practices into postpartum care protocols may provide significant benefits for both short- and long-term maternal-infant mental health.

4.1 | Limitations

This study has several limitations, including its cross-sectional design and sample size. A cross-sectional design does not allow for the determination of causal relationships between variables; therefore, future research should utilize longitudinal designs to further explore these relationships. The sample was obtained from a single center in Somalia, which may limit the generalizability of the findings. Data collection through participants' self-reports may introduce social desirability bias. Data were collected from a single hospital and only from English-speaking mothers, which may have excluded mothers with lower education levels or those who speak local languages. Therefore, the sample may not fully represent the general postpartum female population and reduces the generalizability of the findings. Future studies should aim to include more diverse and representative samples to ensure more reliable and comprehensive results.

5 | Conclusion

The study involving postpartum mothers revealed that factors such as a higher level of education, employment, lack of spousal connection, planned pregnancy, gender-related concerns, absence of spousal support, and encountering issues during and after birth were associated with high depression scores. Additionally, among the women surveyed, those with higher education levels, employment, planned pregnancies, cesarean sections, and no spousal support exhibited higher MAI.

In a related study conducted in Somalia, it was found that depression levels among postpartum women were high, while maternal attachment rates were low. Recognizing and addressing PPD is advisable. Identifying contributing factors and offering essential counseling are crucial steps to enhance maternal attachment during this period.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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