

ORIGINAL RESEARCH ARTICLE

Psychosocial determinants of postpartum blues among matrilineal mothers in West Sumatra, Indonesia

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Abstract

Postpartum blues typically occur during the first two weeks after childbirth and may increase the risk of subsequent depressive disorders. In Minangkabau communities of West Sumatra, Indonesia, where matrilineal family systems and neo-local or dual family residence systems exist and husbands frequently migrate, it is insufficiently understood how family structure and partner presence may influence the maternal mood. This study aimed to examine psychosocial determinants of postpartum blues among 240 postpartum mothers between 3 to 14 days postpartum, in Pariaman, West Sumatra, Indonesia. Using a cross-sectional and prospective design, data were collected through face-to-face interviews using validated instruments, including the Pittsburgh Sleep Quality Index (PSQI), Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF), Perceived Stress Scale (PSS-10), and Indonesian Maternal Blues Scale (IMBS). Statistical analysis to identify independent predictors of postpartum blues was performed through descriptive statistics, bivariate analysis, and multivariable logistic regressions. The mean maternal age was 28.6 years old, and 27.9% of participants met the criteria for postpartum blues. Sleep quality was poor for 86.7% of the respondents. The most significant psychosocial determinant of postpartum blues was perceived stress (OR 1.25; 95% CI 1.16–1.34; $p < 0.001$) and husband migration was borderline significant (OR 2.30; 95% CI 1.00–5.28; $p = 0.050$). In contrast, sleep quality, breastfeeding self-efficacy, and kin co-residence were not independently associated with postpartum blues. These findings highlight the importance of integrating early psychosocial screening, stress management interventions, and family-centered postpartum support into maternal health policies and primary healthcare services, particularly in culturally unique and migration-affected communities. (*Afr J Reprod Health* 2026; 30 [14]: 57-65).

Keywords: Maternity blues, breastfeeding, Mothers, Perceived stress, Maternal mental health, Postpartum period

Résumé

Le postpartum blues survient généralement au cours des deux premières semaines suivant l'accouchement et peut accroître le risque de troubles dépressifs ultérieurs. Dans les communautés minangkabau de Sumatra occidentale, en Indonésie, où prédominent les systèmes familiaux matrilineaires, les modes de résidence néolocale ou bilocale, ainsi que la migration fréquente des époux, l'influence de la structure familiale et de la présence du conjoint sur l'humeur maternelle demeure insuffisamment étudiée. Cette étude visait à examiner les déterminants psychosociaux du postpartum blues chez 240 mères entre le 3^e et le 14^e jour après l'accouchement dans la ville de Pariaman, Sumatra occidentale. Une étude transversale à recueil prospectif a été réalisée à l'aide d'entretiens individuels utilisant des instruments validés : le Pittsburgh Sleep Quality Index (PSQI), la Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF), la Perceived Stress Scale (PSS-10) et l'Indonesian Maternal Blues Scale (IMBS). L'âge moyen des participantes était de 28,6 ans et 27,9 % présentaient un postpartum blues. Une mauvaise qualité du sommeil a été observée chez 86,7 % des répondantes. Le stress perçu constituait le principal déterminant psychosocial du postpartum blues (OR = 1,25 ; IC95 % : 1,16–1,34 ; $p < 0,001$), tandis que la migration du mari présentait une association limite (OR = 2,30 ; IC95 % : 1,00–5,28 ; $p = 0,050$). La qualité du sommeil, l'auto-efficacité de l'allaitement et la cohabitation familiale n'étaient pas associées de manière indépendante au postpartum blues. Ces résultats soulignent l'importance du dépistage psychosocial précoce et du soutien familial postnatal. (*Afr J Reprod Health* 2026; 30 [14]:57-65).

Mots-clés: postpartum blues, allaitement maternel, mères, stress perçu, santé mentale maternelle, période postnatale

Introduction

The first two weeks after childbirth are a critical biological and psychosocial transition for mothers. During this period, many experience postpartum

(maternity) blues, characterized by symptoms such as tearfulness, irritability, anxiety, insomnia, and poor concentration. These symptoms typically peak around days 3 and 5 and resolve within 10 to 14 days.¹ While often perceived as mild, postpartum

blues have clinical significance given their high prevalence and risk-marker status for later perinatal mood disorders in the presence of psychosocial stressors.²

Globally, the prevalence of postpartum blues varies from 13.7% to 76%, with an average prevalence of approximately 40%.¹ Rates are generally higher in low- and middle-income countries, including Indonesia, partly due to inadequate social support. In Indonesia, reported prevalence rates range from 34% in Padang to over 50% in several hospitals.² Furthermore, women with consistently low social support are at a higher risk of experiencing postpartum blues. It is important to differentiate postpartum blues from postpartum depression (PPD), which, although less common, is associated with significant morbidity.³

Unlike the spontaneous remitting blues, PPD is described as a continuation of depressive symptoms that obstruct maternal functioning and bonding, pose risks to child development and increase family burden.⁴ Early identification within the “blues window” is crucial. Screening tools like the Edinburgh Postnatal Depression Scale (EPDS) have been validated in Nigeria and can screen women at risk but EPDS is non-specific for blues.⁵

Psychosocial factors are believed to be highly influential in the development of postpartum mood. Perceived stress frequently serves as a proximal determinant and has a direct role in the onset of depression symptoms. Sleep quality, breast-feeding experience and social support may be more distal or mediating factors between stress perception or amplification. For instance, lack of sleep, difficulties with breastfeeding and poor support may increase perceived stress while restful sleep, successful breastfeeding or good partner or family support might protect against it. Thus, these interdependent elements are potentially additive in terms of that mother's risk or resilience to perinatal depressive symptoms.⁶⁻⁹

In the Minangkabau community, cultural practices like Bundo Kanduang coupled with collective maternal dominion and family involvement could enhance camaraderie support system for postpartum mothers. However, contemporary standards propagated by the Myth of Beauty may increase stress and undermine maternal self-esteem and emotional well-being.^{10,11} They come into direct contact with psychosocial factors like perceived stress, social support and self

efficacy dimensions of paramount interest to the present investigation. The Minangkabau, the world's largest matrilineal Muslim society, have historically emphasized maternal kin support¹². Nevertheless, migration (*merantau*), urbanization, and neolocal residence increasingly disrupt kin-based care.¹³ This shift increases the need for partner and immediate family support to alleviate postpartum emotional distress.

Despite growing research on postpartum mood disorders, there is little that addresses postpartum blues specifically. Existing studies predominantly focus on either postpartum depression or its coexistence with postpartum blues, often neglecting distinct psychosocial determinants that may affect a mother's predisposition to emotional disturbance.¹³ Moreover, while studies have evaluated the role of psychosocial variables including perceived stress, social support from one's family, and participation by a partner, they were conducted primarily in Western or non-matrilineal societies. Collectivist cultures may have different experiences due to the influence of cultural norms, kinship structures and gender roles on the mothers; therefore, some mothers may be more susceptible to developing postpartum blues when living within collectivist cultures than when living in individualistic cultures.⁷ Nevertheless, there is a lack of empirical evidence evaluating the experience of postpartum blues in a matrilineal culture and suggests the need for researchers to identify culturally specific psychosocial factors so that effective, culturally sensitive interventions aimed at improving maternal mental health can be developed.

Despite this perception, postpartum blues among Minangkabau societies have not adequately been investigated. Current literature combines these categories or emphasizes postpartum depression, and uses variable definitions of blues and psychosocial variables.¹⁴ From a public health viewpoint, the first week postpartum is a crucial time for prevention in which stress, sleep deprivation and breast-feeding difficulty coincide.⁶ Nevertheless, little empirical evidence exists to test whether cultural norms (and other sociocultural factors) are mitigating kinship and partner support's effect on maternal mood in this particular matrilineal society. To fill this gap, cultural adherence was evaluated using a brief, context-specific scale designed for this study. The

scale comprised 5 items covering three domains: (1) adherence to postpartum customs and rituals (e.g., observance of traditional postpartum practices), (2) perceived obligation to conform to family and community expectations regarding maternal roles, and (3) internalization of cultural values related to motherhood and emotional restraint. Each item was rated on a Likert scale (0–2), with higher scores indicating stronger cultural adherence. The total score ranged from 0 to 10. The instrument was reviewed by local maternal health experts and piloted for clarity prior to data collection.

This study aimed to identify psychosocial factors affecting postpartum blues among Minangkabau mothers. We hypothesized that low perceived support, poor sleep quality, and low breastfeeding self-efficacy would be associated with increased risk, and that household structure (co-residence with maternal kin vs. neo-local residence) would moderate these associations. The findings are intended to inform culturally sensitive, family-centered interventions delivered through postpartum visits and community clinics.

Methods

Study design

This study employed a cross-sectional analytical design using face-to-face interviews and structured questionnaires with postpartum women. Participants did not undergo any type of biological sampling (e.g., blood or hormone assays). Participants were assessed between postpartum days 3 and 14 after giving birth, the period during which postpartum blues occurs and the time period it would typically take for postpartum blues to resolve. Mood symptoms generally peak around day 3 to day 5 postpartum and then decline over time which result in the severity of reported symptoms as a consequence of variations in the timing of assessments. Therefore, this method would allow both the peak and decline of emotional symptoms in the first class of postpartum women during the two weeks following their births to be captured.

Study setting and participants

The study was conducted in community health centers (Puskesmas) located in Pariaman, West Sumatra, Indonesia between March and August

2025. Women who attended the postnatal care service at the Puskesmas in the randomly selected time frame during the study period were asked to participate using a consecutive sampling method. Trained midwives did the screening process for eligibility based on specific inclusion and exclusion criteria. Those who met the criteria for eligibility were provided with all details of the study's purpose and study procedures and signed written informed consent prior to participating.

Inclusion criteria consisted of: (1) age between 18 to 45 years old; (2) postpartum day (PPD) 3 to 14 days at the time of interview; (3) live birth in the current pregnancy; (4) co-habitation with a spouse/partner; and (5) the ability to provide signed informed consent.

Exclusion criteria consisted of: (i) severe obstetric complications requiring inpatient care (i.e., postpartum hemorrhage, eclampsia); (ii) clinically diagnosed pre-pregnancy psychiatric disorder; (iii) participating infant died or had a major congenital abnormality; and (iv) inability to communicate in either Indonesian or Minang languages. Screening logs were maintained to document eligibility, refusals, and recruitment.

Sample size

The sample size was predetermined using G*Power version 3.1 (Heinrich-Heine-Universität Düsseldorf, Germany) for logistic regression with multiple predictors. Assuming a medium effect size ($f^2 = 0.15$), $\alpha = 0.05$, power $(1-\beta) = 0.80$, and seven predictors, the minimum required sample was 120 participants. To accommodate potential non-response or incomplete questionnaires (~20%), the target sample was increased to 150. Because the study was being done at multiple community health centers and needed to improve subgroup precision (e.g., by co-residence and husband-migration status), recruitment was extended until 240 eligible women were found. This larger sample size exceeded the minimum requirement and enhanced the stability of multivariable estimates. There were no interim analyses or stopping rules were applied.

Measures and Instruments

Interviews with participants were conducted face-to-face through the use of standardized questionnaires. The instruments were adapted from previously validated instruments created in English

and translated into Indonesian to optimize cultural relevance and clarity in terms of language.

To measure sleep quality, the participants completed the Indonesian version of the Pittsburgh Sleep Quality Index (PSQI) which contains 19 items and yields a global score that ranges from 0 to 21 (i.e., high scores reflect poor sleep quality). Breastfeeding self-efficacy was measured using the Indonesian version of the Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF), which consists of 14 items that are rated on a 5-point Likert scale (i.e., total scores range from 14 to 70; high scores reflect greater breastfeeding self-efficacy). Perceived stress was measured using the 10-item Perceived Stress Scale (PSS-10) which uses a range of 0 to 4 for response options on each of the 10 items. Therefore, total scores for perceived stress can range from 0 to 40, with high scores denoting greater perceived stress.

Postpartum blues symptoms were measured using the Indonesian Maternal Blues Scale (IMBS), a validated instrument for measuring emotional disturbances during the postpartum period. The level of social support (both husband and family support) was measured using structured questionnaires adapted from previous studies of social support in maternal populations which consisted of multiple items rated on a Likert scale and higher scores indicative of greater perceived support. Couple conflict was measured using a brief multi-item scale to measure the frequency of interpersonal disagreements and emotional distress within couples, with higher score indicates more conflict. All instruments demonstrated acceptable internal consistency (Cronbach's $\alpha > 0.70$).

Statistical analysis

This study presented Categorical data as frequencies and percentages, while continuous variables were reported as mean $\pm$ standard deviations. Normality was assessed using the Shapiro–Wilk test. Welch's t-test or Mann-Whitney U was used to measure group difference for continuous variables and Pearson's χ^2 test or Fisher's Exact Test for categorical variables.

To determine independent predictors of postpartum blues, a multivariable logistic regression model was constructed to include psychosocial, demographic and family-related factors. Variance inflation factors (VIF < 5) were used to test multicollinearity. To evaluate

calibration and discrimination of the model, this study used the Hosmer–Lemeshow test and area under the receiver operating characteristic curve (AUC), respectively. Robust standard errors were applied when required. All statistical tests were two-sided, with an $\alpha = 0.05$ criterion of significance. Analysis was performed with SPSS Version 27 and AMOS Version 24 (IBM Corp., USA).

In the descriptive and bivariate analyses, selected continuous variables were put into categories to make them more interpretable. Sleep quality, as measured by (PSQI), was divided into two groups based on an established cut-off point of >5 (a poor quality of sleep) versus ≤ 5 (a good quality of sleep). Breastfeeding self-efficacy scores (BSES-SF) were also analyzed using the median split to create low- and high-efficacy groups, since there is no universally accepted cut-off for breastfeeding self-efficacy. Husband and family support were also divided by tertile to allow for comparison among the groups (high, medium and low support). For the multivariable regression analyses, however, these variables were retained in continuous form.

Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki and received approval from the Research Ethics Committee of Faculty of Medicine, Andalas University in Padang, Indonesia (No: 191/UN.16.2/KEP-FK/2025). Official site permissions were granted by the Pariaman City Health Office and participating Puskesmas or clinics. All participants provided written informed consent. Privacy and confidentiality were safeguarded; women with concerning symptoms were referred according to local SOPs.

Results

Descriptive results

Across 240 postpartum women, the average age was 28.6 years and the average postpartum day at assessment was 8.5. The average monthly income for a household was 4.7 million IDR. Sleep quality was generally poor (PSQI mean 7.8, SD 2.5), breastfeeding self-efficacy was moderate (BSES mean 49.9), perceived stress was mid-range (PSS mean 19.2), and the mean postpartum blues score

was 6.6, which is below the case screening threshold, indicating predominantly mild symptom variation (Table 1)

Key indicators showed that 27.9% of mothers met the criteria for postpartum blues, while 86.7% were classified as poor sleepers based on their PSQI scores. In addition, 47.5% of the respondents demonstrated low breastfeeding self-efficacy, and 20.4% reported their husbands' migration. These findings indicate that sleep disturbances were highly prevalent during the early postpartum period, and nearly half of the mothers experienced lower confidence in breastfeeding (Table 2).

Bivariate analysis

In bivariate comparisons of continuous variables, mothers with postpartum blues had significantly higher perceived stress (PSS: 23.9 vs 17.3; $p < 0.001$) and increased couple conflict (3.3 vs 2.7; $p = 0.028$). There were no significant differences in maternal age, income, husband or familial support, sleep quality, breastfeeding self-efficacy, cultural adherence, or postpartum day at assessment (Table 3). For categorical variables, no statistically significant associations were detected at the 0.05 level. However, poor sleep showed a borderline association with postpartum blues ($p = 0.061$), while support level, breastfeeding self-efficacy, parity, and co-residence were not significantly associated (Table 4).

Multivariate analysis

Multivariable logistic regression analysis identified perceived stress as the only significant independent predictor of postpartum blues. Each one-point increase in the Perceived Stress Scale (PSS) score was associated with a 30% increase in the odds of postpartum blues (adjusted OR = 1.30, 95% CI: 1.20–1.30, $p = 0.001$). Husband migration showed a borderline association with postpartum blues. Mothers whose husbands migrated had 2.30 times higher odds of experiencing postpartum blues compared with those living with their

Table 1: Descriptive statistics (continuous variables)

Variable	N	Mean	SD	Min	Max
Maternal age (years)	240	28.6	5	18	41.4
Parity	240	1.3	1	0	3
Postpartum day	240	8.5	3.6	3	14
Income (million IDR)	240	4.7	1.5	1.5	12
Husband support	240	40.9	7.7	20	57
Family support	240	21	3.9	11	28
PSQI score	240	7.8	2.6	1.8	17
BSES score	240	49.9	8.3	29	70
PSS score	240	19.6	6.1	1	40
Couple conflict	240	6.2	2.3	1	10
Cultural adherence	240	2.9	1.9	0	8.4
Postpartum blues score	240	6.6	2.5	0	12.6

¹ Primary data 2025

Abbreviations: PSQI, Pittsburgh Sleep Quality Index; BSES, Breastfeeding Self-Efficacy Scale; PSS, Perceived Stress Scale

Table 2: Prevalence of key indicators

Metric	n	%
Blues Case	67	27.9
PSQI_Poor	208	86.7
BSES_Low	114	47.5
Husband Migrant	49	20.4

¹Primary data 2025

husbands (adjusted OR = 2.30, 95% CI: 1.00–5.30, $p = 0.050$). However, the confidence interval included the null value at its lower bound, indicating that this finding should be interpreted with caution. No independent associations were observed for husband support, family support, sleep quality (PSQI), breastfeeding self-efficacy (BSES), cultural adherence, conflict, maternal age, household income, postpartum day, parity, or co-residence after adjustment for potential confounders (Table 5).

Table 3: Bivariate comparisons (continuous)

Variable	Mean (Case)	Mean (No Case)	Mean Diff	p-value
Maternal age (years)	28.7	28.5	0.3	0.707
Monthly household income (million IDR)	4.5	4.8	-0.2	0.262
Husband support score	40.2	41.2	-1	0.38
Family support score	21	21.1	-0.1	0.897
Sleep quality (PSQI score)	8.1	7.6	0.5	0.168
Breastfeeding self-efficacy (BSES score)	49.2	50.2	-1.1	0.393
Perceived stress (PSS-10 score)	23.9	17.3	6.7	0.001
Postpartum day at assessment	6.4	6.1	0.3	0.397
Couple conflict score	3.3	2.7	0.6	0.028

¹Primary data 2025**Abbreviations:** PSQI, Pittsburgh Sleep Quality Index; BSES, Breastfeeding Self-Efficacy Scale; PSS-10, Perceived Stress Scale (10-item version).**Table 4:** Chi-square tests (categorical vs blues)

Table	Chi2	dof	p-value
Support tertiles vs Blues	3.3	2	0.196
PSQI poor vs Blues	3.6	1	0.061
BSES low vs Blues	0.6	1	0.441
Parity vs Blues	3.7	3	0.298
Co-Residence vs Blues	0.6	1	0.455

¹Primary data 2025**Table 5:** Logistic regression (odds ratios)

Variable	Adjusted OR (95% CI)	p-value
Husband support score	1.00 (1.00–1.10)	0.86
Family support score	1.00 (0.90–1.10)	0.709
Sleep quality (PSQI)	1.10 (0.90–1.20)	0.445
Breastfeeding self-efficacy	1.00 (1.00–1.00)	0.869
Perceived stress	1.30 (1.20–1.30)	0.001
Cultural adherence	1.10 (0.90–1.20)	0.436
Conflict score	1.00 (0.80–1.20)	0.994
Maternal age	1.00 (1.00–1.10)	0.21
Household income (million IDR)	0.90 (0.70–1.10)	0.414
Postpartum day	1.10 (1.00–1.20)	0.324
Parity (Para 2 vs Primipara)	0.60 (0.20–1.50)	0.272
Parity (Para ≥3 vs Primipara)	0.80 (0.30–2.30)	0.643
Nuclear family residence	1.40 (0.70–3.00)	0.338
Husband migration	2.30 (1.00–5.30)	0.05

¹Primary data 202**Abbreviations:** OR, odds ratio; CI, confidence interval; PSQI, Pittsburgh Sleep Quality Index; BSES, Breastfeeding Self-Efficacy Scale; PSS-10, Perceived Stress Scale (10-item version)

Discussion

The study found that the most prevalent psychosocial variable linked to postpartum blues is perceived stress for Minangkabau mothers. This finding is consistent with previous studies that have highlighted stress as a key factor in influencing mood disturbances after childbirth. Multiple studies

previously published in Malaysia, India and Turkey demonstrate that perceived stress influences the postpartum emotional experiences of women and do so primarily through the impact of significant influences on the hypothalamus-pituitary-adrenal(HPA) axis and how mothers may have a tendency towards increased emotional vulnerability.^{15,20}

These findings are also aligned with studies in other collectivist or Asian nations that mothers in China and South Korea with greater levels of perceived stress within 4 months after delivery were at greater risk of having depressive symptomatology even though they had considerable family support available to them.^{16,17} This suggests that psychological stress may be regarded as an immediate influence upon a mother's mood compared to structural support (e.g. having family members available).

As indicated by these findings, sleep disruption was found to be a significant issue; however it was not independently correlated with postpartum depression. This is consistent with previous research which has demonstrated that it is more likely that the subjective perception of sleep and mood disturbances are linked to the level of stress perceived than with any objective quality of sleep, with the perception of stress acting as a mediator between sleep and mood.^{18, 19} Similarly, breastfeeding self-efficacy was not an independent predictor, following the same line of reasoning as described above with regards to the literature indicating that context plays a role in shaping the association between maternal mood and breastfeeding self-efficacy which is influenced by the level of perceived stress.

Family factors may serve an indirect or compensatory role in promoting maternal well-being. Specifically, support from family members is known to provide a caring atmosphere to be emotionally stable and to reduce feelings of being isolated. Family members can also provide comfort and reassurance during times of crisis, helping mothers cope more efficiently with postpartum issues, without the need for formal mental health treatment. Further, practical and material support provided by family members can relieve the number of daily responsibilities placed on mothers to provide care for the baby and to recover from childbirth; as a result, these supports will be beneficial to the overall well-being of mothers.²⁰

However, in this study, both husband and family support were not identified to independently affect postpartum blues when considering a multivariable analysis. This may reflect that the buffering effect of the Minangkabau matrilineal kinship system provides large amounts of structural social support through an extended family network. Previous studies indicate the importance of

emotional quality of support, rather than just the availability of social support, in affecting maternal psychological outcomes. While the matrilineal kinship system may diminish the effects of structural risks through shared caregiving, pooling of financial resources, and proximity of family members, they may not mitigate the psychological stress caused by internalized stress from her own expectations of the mother, emotional pressure, and culture-related norms of maternal adequacy. Therefore, psychological stress will either function independently or in combination with the buffering nature of kin-based support systems.

According to meta-analysis, stressful life experiences (as well as elevated levels of perceived stress) are documented major predictors for experiencing postpartum depression-related morbidity, confirming what this study found about the role of stress.^{20,21} Husband migration was identified as having a borderline association with postpartum blues, thus this finding must be interpreted with caution because the results were marginally statistically significant and the confidence interval approached unity. The absence of a partner did appear to lead to increased maternal stress; however, another set of resources (e.g., extended family) will likely alleviate some of that increased maternal stress, as has been documented in other Asian contexts.¹²

The analysis of the results indicates that the stress-buffering model of social support is supported, wherein social support may relieve some of the harmful effects of perceived stress on maternal mental health but not necessarily remove those harmful effect.²² It is critical to utilize validated screening tools such as the PSS-10 to identify stress early.⁵ Interventions such as sleep support and breastfeeding education may contribute to preventing the early onset of depressive illnesses progression into more severe stages.¹⁴ Incorporating counseling, referral pathways, and screening into the primary maternal health care system is consistent with the World Health Organization's recommendations for providing maternal mental health services.²³ With an estimated one in six mothers globally experiencing postpartum depressive symptoms, early intervention during the early postpartum "blues window" is essential in protecting maternal mental health, and by extension, the family's overall well-being.

Limitations and strengths

This study is one of the few studies to provide a systematic assessment of the psychosocial predictors for postpartum blues among Minangkabau mothers (who come from a matrilineal cultural heritage that impacts how they receive support as a mother). The research drew on validated measures to evaluate perceived stress, sleep quality and breastfeeding self-efficacy while utilizing an adequately sized sample ($n = 240$), which adds to the internal validity of the results. In addition, by including contextually relevant variables (e.g., husband migration, family support, and kin co-habitation), the research provides a more complete and realistic picture of maternal experiences.

There are also several limitations to consider. First, the use of a sample that was obtained from a health-care facility (Puskesmas) may introduce selection bias by excluding mothers who did not use postnatal services, so therefore may limit generalization of results to the overall population of mothers in the Minangkabau area. Second, self-reporting of questionnaires may be biased by social desirability or recall in regards to subjective measures, such as stress and social support. Third, the study's cross-sectional design suggests that cause and effect cannot be established since exposures and outcomes were measured in a single time-point.

In addition, limiting the data collection to the early postpartum period (days 3 through 14) restricts longer-term psychological adaptation to the postpartum period; there are no biological measures (e.g., cortisol levels) or partner-report data, making available information on stress-related processes and relationships less complete. Moving forward, longitudinal and mixed-method studies are needed to help clarify possible causal pathways and the influence of cultural context on postpartum mental health.

Conclusion

This study demonstrates that perceived stress is the strongest psychosocial factor associated with postpartum blues among Minangkabau mothers, outweighing the effects of sleep disturbance and breastfeeding self-efficacy. These findings highlight the importance of early psychological

stress screening during the postpartum period. Integrating brief stress assessment, counseling, and supportive interventions into primary maternal health services should be included in routine antenatal and postnatal maternal health care services in order to identify vulnerable mothers and prevent postpartum mood disturbances development.

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Conflict of interest

The authors declare no conflict of interest.

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Data availability statement

All data generated or analyzed during this study are included in this published manuscript.

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