



Social, Spiritual, and Economic Factors Associated with Postpartum Depression among Indonesian Mothers: A Cross-Sectional Study

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ABSTRACT

Postpartum depression (PPD) is a major maternal mental health problem that affects mother-baby bonding and may hurt child development, with global prevalence ranging from 17% to 20%. In developing countries such as Indonesia, PPD is complicated by underdiagnosis, inadequate treatment options, and social stigma. Although social and spiritual support are recognized protective factors and socioeconomic status is a known risk factor, their combined effect in multicultural populations remains understudied. This study aimed to examine the relationship between social support, spiritual support, socioeconomic status, and postpartum depression among postpartum women in Surakarta, Central Java, Indonesia. A cross-sectional design was conducted, with 125 postpartum women recruited from primary health centers and community health posts using a consecutive sampling technique. Data were collected via a structured interview and a questionnaire measuring social and spiritual support, as well as the Edinburgh Postnatal Depression Scale (EPDS). Statistical analyses included bivariate correlation, multiple linear regression, and multivariable logistic regression. The prevalence of high-risk postpartum depression (EPDS ≥ 13) was 22.4%. Bivariate correlation showed that both social and spiritual support were significantly inversely related to depressive symptoms. Multivariable logistic regression revealed that lower social support was associated with almost a ninefold increase in the risk of high-risk depression (OR 8.92, $p < 0.001$), while low income was associated with a threefold increase in risk (OR 3.01, $p = 0.045$). Educational level, employment status, and age were not significant predictors after controlling for psychosocial factors. In conclusion, these findings highlight the necessity of implementing routine screening for PPD in primary care and developing culturally sensitive interventions that integrate family, spiritual, and economic support to improve maternal mental health outcomes.

Keywords: Postpartum Depression, Maternal Mental Health, Social Support, Spiritual Support, Economic Status.

ABSTRAK

Depresi postpartum (PPD) merupakan masalah besar dalam kesehatan mental ibu yang memengaruhi ikatan ibu-bayi dan dapat berdampak negatif pada perkembangan anak, dengan prevalensi global berkisar antara 17% dan 20%. Di negara berkembang seperti Indonesia, PPD diperumit oleh kurangnya diagnosis, keterbatasan pilihan terapi, serta stigma sosial. Dukungan sosial dan spiritual diketahui sebagai faktor protektif, sementara status sosial ekonomi merupakan faktor risiko; namun, efek gabungan keduanya pada populasi multikultural masih diteliti. Penelitian ini bertujuan untuk menelaah hubungan antara dukungan sosial, dukungan spiritual, status sosial ekonomi, dan depresi postpartum pada ibu nifas di Surakarta, Jawa Tengah, Indonesia. Desain penelitian menggunakan cross-sectional, dengan 125 ibu nifas direkrut dari puskesmas dan posyandu melalui teknik consecutive sampling. Data dikumpulkan melalui wawancara terstruktur dan kuesioner yang mengukur dukungan sosial dan spiritual, serta Edinburgh Postnatal Depression Scale (EPDS). Analisis statistik meliputi korelasi bivariat, regresi linier berganda, dan regresi logistik multivariat. Prevalensi depresi postpartum berisiko tinggi (EPDS ≥ 13) adalah 22,4%. Korelasi bivariat menunjukkan bahwa dukungan sosial dan spiritual berhubungan negatif signifikan dengan gejala depresi. Regresi logistik multivariat mengungkapkan bahwa rendahnya dukungan sosial meningkatkan risiko depresi berisiko tinggi hampir sembilan kali lipat (OR 8,92; $p < 0,001$), sedangkan pendapatan rendah meningkatkan risiko depresi berisiko tinggi tiga kali lipat (OR 3,01; $p = 0,045$). Tingkat pendidikan, status pekerjaan, dan usia tidak menjadi prediktor yang signifikan setelah dikontrol oleh faktor psikososial. Temuan ini menekankan pentingnya penerapan skrining rutin PPD di layanan primer serta pengembangan intervensi yang sensitif budaya dengan mengintegrasikan dukungan keluarga, spiritual, dan ekonomi untuk meningkatkan hasil kesehatan mental ibu.

Kata Kunci: Depresi Pascapersalinan, Kesehatan Mental Ibu, Dukungan Sosial, Dukungan Spiritual, Status Ekonomi.

INTRODUCTION

Postpartum depression (PPD) is a widely prevalent and significant issue in maternal mental health, with considerable implications for mothers, their offspring, and families as a whole. This condition negatively affects maternal health, the quality of the mother–baby relationship, and child development. Globally, approximately 17–20% of mothers experience postpartum depression, with prevalence varying according to socioeconomic conditions, cultural norms, and healthcare systems (Wang et al., 2021; Maitanmi et al., 2023; Roddy et al., 2023). In low- and middle-income countries, including Indonesia, PPD is further complicated by limited diagnostic tools, inadequate treatment options, and persistent stigma (Mari Addo et al., 2025).

In recent years, significant progress in improving maternal and child health in Indonesia can be observed, with a series of national programs, such as the First 1000 Days of Life Movement (Surya, 2024), which are in line with the SDG goals, particularly SDG 3 (Good Health and Well-being) and SDG 5 (Gender Equality). These initiatives emphasize reducing mortality, improving healthcare access, and promoting women's empowerment. However, maternal mental health, particularly PPD, remains underrepresented, as current programs focus primarily on nutrition, prenatal care, and safe delivery, while psychosocial and spiritual dimensions of maternal well-being receive insufficient attention.

Evidence consistently shows that psychosocial factors are strong predictors of PPD. Lack of instrumental, emotional, or informational support increases risk, whereas strong social networks mitigate postpartum stress (Cho et al., 2022; Khademi & Kaveh, 2024; Cho & Lee, 2025). Spiritual well-being, including meaning-making, transcendence, and faith-based coping, has been linked to resilience and lower depressive symptoms (Erkal Aksoy et al., 2025; Sharapova et al., 2025). Economic vulnerability, such as income below the regional minimum wage, also elevates risk and may interact with psychosocial factors to exacerbate maternal symptoms (Lau & Adams, 2023; Amedu, 2025).

Despite these findings, prior studies have largely examined these factors in isolation. Few have explored how social support, spiritual support, and economic status interact simultaneously, particularly within culturally diverse settings (Akbari et al., 2020). Moreover, inconsistencies exist: while some studies emphasize the protective role of spirituality, others highlight socioeconomic determinants as more dominant. These gaps underscore the need for integrative research that critically compares and synthesizes evidence rather than listing predictors separately.

Therefore, this study aimed to examine the combined relationship between social support, spiritual support, and economic status in relation to postpartum depression among Indonesian mothers. The novelty of this research lies in its integrative approach, which analyzes the interplay between psychosocial and economic factors within Indonesia's unique cultural context, where religion and family are central to social life. This perspective offers a culturally sensitive foundation for holistic interventions to address PPD.

RESEARCH METHODS

This study employed a cross-sectional design to assess the relationship between social support, spiritual support, economic factors, and postpartum depression among mothers in Surakarta City, Indonesia. The study was conducted between March and July 2025. The study participants were selected from primary health care centers and community health posts. The participants were mothers aged 18 years and above, within six months after delivery, able to converse in Indonesian, and who gave their consent to participate in the study. The exclusion criteria for participants included mothers experiencing complicated medical conditions related to delivery, mothers with chronic medical conditions requiring long-term treatment, and mothers diagnosed with a psychiatric condition before the onset of pregnancy. To verify psychiatric history, all mothers were asked during the initial screening interview to report any prior psychiatric diagnoses or treatments. This self-reported information was cross-checked against available maternal medical records at the community health centers and, when necessary, confirmed by family members accompanying the mothers. This step ensured that participants with pre-existing psychiatric conditions were excluded, thereby confirming that the observed EPDS scores represented postpartum-onset depression risk rather than the exacerbation of chronic psychiatric disorders.

For studies examining associations using logistic regression or comparing proportions, a common formula is based on detecting a difference in proportions with specified power and significance level:

$$n = \frac{(Z_{\alpha/2} + Z_{\beta})^2 \cdot [p_1(1 - p_1) + p_2(1 - p_2)]}{(p_1 - p_2)^2}$$

Where:

n = required sample size per group

$Z_{\alpha/2}$ = critical value for significance level (e.g., 1.96 for $\alpha = 0.05$)

Z_{β} = critical value for desired power (e.g., 0.84 for 80% power)

p_1, p_2 = expected proportions of outcome (PPD prevalence) in each group

Since your study uses a cross-sectional design with regression analysis, the formula is often adapted using the events per variable (EPV) rule of thumb:

$$n \geq 10 \times k$$

where k = number of predictors in the model. With 3 main predictors (social support, spiritual support, income), at least 30 events (cases of PPD) are needed. Given a prevalence of ~20%, the total sample size should be ≥ 150 to ensure stable estimates. Your achieved sample size of 125 is close to this conservative threshold but slightly below it.

Data were collected via a structured, face-to-face interview using a validated questionnaire comprising four sections. The first section gathered demographic and socioeconomic data, including age, education level, occupation, and monthly family income, which were then classified as above or below the regional minimum wage. The second section assessed social support using a 20-item validated scale (range 0–60), the third section measured spiritual support using a 10-item validated scale (range 0–40), and the fourth section evaluated postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS, 10 items, range 0–30) (Djatche Miafo et al., 2024). All instruments underwent a translation–back translation process and expert review to ensure cultural and linguistic appropriateness in the Indonesian context. Reliability testing demonstrated high internal consistency (Cronbach's $\alpha = 0.87$ for social support, 0.82 for spiritual support, and 0.84 for EPDS), while construct and criterion validity were confirmed through factor analysis and comparison with clinical interviews. Scoring procedures involved summing item responses, with higher totals indicating greater social support, spiritual support, or depressive symptoms. In this study, a cutoff score of ≥ 13 was applied to categorize mothers at high risk for postpartum depression. Although Indonesian validations often report thresholds of ≥ 10 or ≥ 12 , the international standard of ≥ 13 was adopted to ensure comparability with global studies and minimize false positives. To ensure that EPDS scores reflected postpartum-onset depression rather than exacerbation of pre-existing psychiatric conditions, mothers with a psychiatric diagnosis prior to pregnancy were excluded. Verification of psychiatric history was conducted through self-reported medical history during the interview, cross-checking with available community health center records, and, when necessary, confirmation from accompanying family members. This step strengthened the sample's validity by ensuring that only postpartum-onset cases were included.

Data analysis was performed using SPSS. Descriptive analysis was performed using the mean and standard deviation for quantitative data and a frequency distribution with percentages for categorical data to describe the sample's characteristics. Analysis of variance was used to determine differences in mean EPDS scores among socioeconomic and demographic groups, using the independent t-test for two groups and the one-way ANOVA for three or more groups. Pearson's correlation was used to examine the relationships among social support, spiritual support, and EPDS scores. Multiple linear regression was used to determine predictors of EPDS scores, and binary logistic regression was used to determine the odds of being at high risk for PPD (EPDS ≥ 13). Significance level was set at 0.05. Ethical clearance for this study was obtained from the Health Research Ethics Committee of Dr. Moewardi General Hospital with Approval Number: 1.227/VI/HREC/2025. Informed consent was obtained from all participants after explaining the study's purpose and risks.

RESULTS

In this study, high-risk postpartum depression was defined as an Edinburgh Postnatal Depression Scale (EPDS) score of ≥ 13 . This cutoff was used for all subsequent analyses, including group comparisons and logistic regression. The study revealed several key findings regarding postpartum women in this sample. The respondents' demographic characteristics showed several notable features.

Table 1. Demographic Characteristics of Respondents (n = 125).

Demographic Characteristic	Mean $\pm$ SD	Range (Min–Max)	n (%)
Age	27.8 $\pm$ 4.8	20 – 39	
Education			
Higher education (university/college)			81 (64.8)
High school			40 (32.0)
Middle school/elementary			4 (3.2)
Employment			
Housewives			95 (76.0)
Private employee/entrepreneur			26 (20.8)
Not working/other			4 (3.2)
Income			
$\geq$ Regional minimum wage			66 (52.8)
< Regional minimum wage			59 (47.2)

Table 1 showed that the mothers' average age was in their late twenties, indicating a young reproductive age group. The respondents' educational level was predominantly higher, but their employment status was mostly informal, with three-fourths of them being housewives. From an economic perspective, it was evident that almost half of the respondents earned below the regional minimum wage.

Table 2. Summary of Psychosocial and Depression Scores among Postpartum Mothers.

Variable	Mean $\pm$ SD	Scale Range
Social support score	46.8	0–60
Spiritual support score	29.7	0–40
EPDS score	9.1	0–30

The data in Table 2 show that the majority of the sample had high levels of social support and moderate levels of spiritual resources. The average symptom scores for depression are well below the cut-off for risk. However, a significant percentage of the sample, over one-fifth of the sample, would actually be considered at high risk for postpartum depression.

Table 3. Correlation Between Social Support, Spiritual Support, and Postpartum Depression Scores.

Variable	Social Support	Spiritual Support	EPDS Score
Social support	1	0.453*	-0.672*
Spiritual support		1	-0.531*
EPDS score			1

Note: * $p < 0.01$

The correlation analysis in Table 3 indicates that high levels of social support are significantly associated with fewer depressive symptoms. Furthermore, spiritual support also demonstrates a significant inverse relationship with symptoms of depression.

Table 4. Group Differences in Postpartum Depression Scores by Socioeconomic and Demographic Factors.

Grouping Variable	Groups Compared	Mean EPDS Scores	Statistical Test (df)	p-value	Interpretation
Income	≥ Minimum Wage vs < Minimum Wage	8.0 vs 10.5	t(121) = 2.45	0.016 *	Significant difference
Education	Higher vs High School vs Lower	8.9 vs 9.5 vs 10.8	F(2,122) = 1.12	0.330	NSD – No statistically significant difference
Employment	Homemakers vs Employed vs Other	9.2 vs 8.7 vs 9.9	F(2,122) = 0.42	0.658	NSD – No statistically significant difference

The results shown in Table 4 reveal that income is the only demographic factor significantly related to changes in postpartum depression scores. Mothers with income below the regional minimum wage rate have higher depression symptomatology than those with income equal to or above this rate. Education level and employment status do not differ statistically.

Table 5. Multiple Linear Regression Predicting Postpartum Depression Scores.

Predictor	b	p-value	Interpretation
(Constant)	28.5	<0.001	Baseline score when all predictors = 0
Social support score	-0.42	<0.001	Each 1-point increase in the social support score was associated with a 0.42-point decrease in the EPDS score.
Spiritual support score	-0.25	0.005	Each one-point increase in spiritual support score was associated with a 0.25-point decrease in EPDS score.
Income (< min. wage)	+1.15	0.150	Not statistically significant
Age	-0.07	0.412	Not statistically significant

Model Summary: $R^2 = 0.462$, $F(4,120) = 25.8$, $p < 0.001$

As indicated by the regression model outlined in Table 5, the model explained nearly 50% of the variance of postpartum depression. The most important predictor was social support. Nevertheless, it was noted that higher levels of social support were associated with lower depression scores. Spiritual support was also a predictor, but to a lesser extent. Income and age were not statistically significant predictors after controlling for the other variables.

Table 6. Logistic Regression Predicting High-Risk Postpartum Depression.

Predictor	OR	95% CI	p-value	Interpretation
Low social support	8.92	2.87 – 27.75	<0.001	Strongest predictor of high-risk depression
Income < Min. Wage	3.01	1.02 – 8.87	0.045	Mothers with lower income are 3x more likely to be at high risk.
Lower education	1.89	0.58 – 6.13	0.289	Not statistically significant

High-risk postpartum depression was defined as an EPDS score ≥13, and this threshold was applied consistently across all subsequent analyses, including group comparisons, correlation analyses, and regression models. According to the logistic regression analysis in Table 6, the strongest predictor for high-risk postpartum depression is a lack of social support; mothers without sufficient support are nearly nine times more likely to show severe symptoms. Economic factors also play a crucial role; women with incomes below the regional minimum wage are three times more likely to be at high risk for the condition. Education level does not appear to be a predictor of the condition, even after controlling for other factors.

DISCUSSION

This study examined the association between social support, spiritual support, and economic status in predicting postpartum depression among mothers in Surakarta, Indonesia. The findings highlight that psychosocial and spiritual resources are the strongest protective factors, while economic vulnerability remains an important risk factor.

Social support, especially from her husband, emerged as the most dominant determinant of maternal mental health (Rohmah et al., 2024). Mothers who received higher levels of instrumental, emotional, and informational support reported fewer depressive symptoms, and low social support increased the risk of high-risk depression nearly ninefold. This finding reinforces the stress-buffering hypothesis, which suggests that supportive social interactions can reduce the psychological burden of postpartum stress (Cho et al., 2022; Khademi & Kaveh, 2024; Cho & Lee, 2025; Khaeriyah et al., 2025). Spiritual support also independently predicted lower depression scores, confirming the role of meaning-making, transcendence, and faith-based coping in enhancing resilience during the postpartum period (Erkal Aksoy et al., 2025; Sharapova et al., 2025).

Economic vulnerability was another important structural determinant. Mothers with incomes below the regional minimum wage were three times more likely to be at high risk for depression in the logistic regression model. However, income was not a significant predictor in the multiple linear regression analysis after controlling for psychosocial factors (Lau & Adams, 2023; Amedu, 2025). This finding suggests that economic disadvantage may play a stronger role in distinguishing high-risk cases rather than influencing the overall severity of depressive symptoms.

From the demographic findings, it is evident that educational status does not necessarily translate into formal employment during the postpartum period, likely due to cultural factors. Economic status remains a major consideration for postpartum mothers, influencing their access to health and social services. Psychosocial and spiritual resources were identified as positive protective factors for postpartum adjustment. Although average depression scores were below the cutoff, more than one-fifth of mothers were at high risk, illustrating that averages may mask important individual differences. The correlation analysis further confirmed that social support is the most significant protective factor, while spiritual support also plays an important role. The positive correlation between social and spiritual support suggests that mothers with strong social networks may also have greater access to spiritual resources. Group comparisons revealed that structural economic factors exert a stronger influence on maternal mental health than individual demographic characteristics such as education or employment. Financial insecurity should therefore be considered a key target for maternal mental health interventions. Regression analyses underscored the protective role of social and spiritual support. The lack of significance for income and age after controlling for psychosocial factors may imply that other mediating variables, such as marital relationship quality or prior mental health history, shape these associations. Logistic regression highlighted that low social support and low income are the most critical predictors of high-risk depression, reinforcing the importance of psychosocial and financial resources for maternal well-being.

A nuanced divergence emerged between the regression models. In the multiple linear regression (Table 5), income was not a statistically significant predictor of continuous EPDS scores, suggesting that economic disadvantage does not linearly increase baseline depressive symptom severity. However, in the binary logistic regression (Table 6), mothers with incomes below the regional minimum wage were three times more likely to be categorized into the “High-Risk PPD” group. This apparent inconsistency can be explained through the lens of a threshold effect. Financial distress may not gradually elevate everyday distress levels across the continuum but instead acts as a severe structural stressor that pushes vulnerable mothers beyond a critical threshold into syndromic depression. In other words, economic vulnerability may function less as a continuous gradient and more as a categorical trigger, where the accumulation of financial insecurity, limited access to resources, and heightened family stress precipitate a shift from manageable distress into clinically significant postpartum depression. This interpretation aligns with psychiatric models of stress sensitization, in which structural disadvantages amplify vulnerability and increase the likelihood of crossing diagnostic thresholds rather than merely raising symptom averages.

Despite these important insights, several limitations should be acknowledged. The cross-sectional design limits the ability to draw causal inferences about the relationships among social support, spiritual support, economic status, and postpartum depression. All data were collected through self-report questionnaires, which may be subject to recall bias or social desirability bias. The study was conducted in a single urban setting with a relatively homogeneous population,

which may restrict the generalizability of the findings to other regions or cultural contexts. In addition, although the Edinburgh Postnatal Depression Scale (EPDS) is widely validated, the absence of locally validated cut-off scores may have influenced the identification of high-risk cases (Rogers et al., 2020; Arefadib et al., 2022; Liu et al., 2023). Finally, unmeasured factors such as marital relationship quality, prior mental health history, or exposure to adverse life events may have affected the results.

In addition, the reliance on consecutive sampling within primary health centers and community health posts introduces an inherent selection bias. Postpartum mothers who regularly attend these facilities are more likely to have higher health literacy or benefit from supportive family networks (Jeffers et al., 2025). Consequently, this sampling frame may inadvertently exclude severe PPD cases among mothers who are socially withdrawn, homebound, or unable to seek external care. As a result, the observed high-risk prevalence rate of “over one-fifth” may actually represent an underestimation of the true regional burden of postpartum depression.

The practical implications are clear: routine screening for postpartum depression should be integrated into primary health care systems, using culturally sensitive cut-off points and referral pathways. Interventions should combine partner and peer support programs, community-based psychosocial initiatives, and spiritual care options that align with cultural and religious contexts. At the same time, targeted economic interventions and improved access to affordable health and childcare services are essential to reduce the burden of maternal depression. A coordinated, multisectoral approach that integrates health, social welfare, and community resources will be critical to achieving sustainable improvements in maternal mental health and advancing progress toward the Sustainable Development Goals.

The integration of psychosocial and spiritual care into Indonesia’s maternal health strategies is essential to complement the biomedical and nutritional focus of the First 1000 Days of Life Movement and accelerate progress toward SDG 3 (Good Health and Well-being) and SDG 5 (Gender Equality). Based on our findings, we recommend that maternal mental health screening and family-centered psychoeducation be structurally embedded into the 1000 Days framework. Specifically, local health cadres (kader Posyandu), who currently focus on routine infant growth monitoring and stunting prevention, could be trained to expand their roles by administering brief, validated tools such as the EPDS, identifying mothers at risk of postpartum depression, and delivering basic psychoeducation sessions for partners and families on the importance of social and spiritual support. Embedding these practices into existing community health posts would not only strengthen early detection and referral pathways but also normalize maternal mental health care as part of routine services. Such integration would ensure that psychosocial and spiritual dimensions of maternal well-being are addressed alongside nutrition and physical health, thereby creating a more holistic and culturally sensitive approach to maternal and child health in Indonesia.

CONCLUSION

Social support was the strongest protective factor against postpartum depression, followed by spiritual support. Lower income was associated with an increased likelihood of high-risk postpartum depression, although not with overall symptom severity. These findings highlight the importance of strengthening family involvement, integrating spiritual support, and addressing socioeconomic vulnerability in postpartum mental health interventions at the primary care level.

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