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EXPLORING THE DETERMINANTS OF POSTPARTUM DEPRESSION AMONG POSTPARTUM WOMEN: A LITERATURE REVIEW

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ABSTRACT

This review examined determinants of postpartum depression and the consistency of associations reported across international studies. A narrative review searched PubMed, ScienceDirect, and Taylor & Francis in August 2026 for quantitative observational studies published during 2021–2026. Records underwent duplicate removal, screening, and full-text assessment. Study quality was evaluated using Joanna Briggs Institute checklists. Twelve of 3,951 identified records were included. Studies from Asia, Africa, Europe, and the Americas linked postpartum depression with obstetric, psychological, sociodemographic, social, and lifestyle factors. Pregnancy complications, cesarean delivery, unplanned pregnancy, and previous depression were frequently associated with depressive symptoms. Social support was the most consistently reported protective factor. Physical activity showed protective associations, whereas smoking and insufficient sleep were linked to greater vulnerability. Obstetric factors were investigated most frequently, while findings for other determinants varied across populations. Postpartum depression involves multiple related determinants. Maternal care should integrate early screening, individualized risk assessment, and continued support from healthcare professionals and families.

Keywords: *Postpartum depression, risk factors, maternal mental health, social support, narrative review.*

INTRODUCTION

Postpartum depression is a maternal mental health concern that may emerge when women encounter difficulties adapting to the demands of childbirth and early motherhood (Mutianingsih & Mustikasari, 2019). During postpartum recovery, mothers experience physical and psychological adjustments alongside the gradual restoration of reproductive functions, a process described as lasting approximately 41 days (Purwanti & Listiyaningsih, 2021). Available reports indicate that postpartum depression affects women in different settings, although the reported estimates vary considerably. The World Health Organization (WHO) has reported a prevalence of approximately 12–19% worldwide, while the Indonesian Ministry of Health documented an estimated 1–2 cases per 1,000 births (Kementerian Kesehatan RI, 2020). These findings underscore the importance of examining previously reported determinants to support healthcare professionals in identifying maternal vulnerability and informing preventive strategies.

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Postpartum depression is a mental health condition involving changes in mood after childbirth, commonly characterized by sadness, fatigue, and excessive anxiety (Zhang et al., 2026). Mothers diagnosed with postpartum depression may experience cognitive distortions, including negative thoughts about themselves and their babies, difficulty concentrating, reduced motivation to care for their babies, impaired mother–infant bonding, and withdrawal from social environments. In severe cases, suicidal ideation may occur (Amstadter et al., 2021; Tesfaye et al., 2023).

Postpartum depression should be understood as a complex condition associated with multiple determinants. Previous studies have confirmed its association with obstetric factors, such as pregnancy complications, postpartum pain, and breastfeeding difficulties; psychological factors, including stress levels, antenatal depression, and sleep quality; and sociodemographic factors, such as partner support, marital relationships, and economic status (Pan et al., 2023; Qi et al., 2022; Swart et al., 2023). Given this complexity, research trends over the past five years have shifted from simply measuring prevalence toward developing more comprehensive and context-sensitive models of its determinants. Recent studies increasingly use multicenter designs, multivariable analyses, Bayesian analyses, and interaction approaches to examine the relationships among risk factors.

Nevertheless, existing literature reviews on postpartum depression have several limitations. For example, the review by Wulandari et al. (2025) had a narrow analytical focus, examining only geographical, social, and economic differences; as a result, the evidence presented was not sufficiently comprehensive or multidimensional. The systematic review by Aprilia et al. (2023) was limited by its literature search strategy, which used only one database (PubMed) and snowball sampling. This approach may have introduced search and publication bias and limited the comprehensiveness of the evidence gathered. Mustofa et al. (2021) focused exclusively on Southeast Asia, limiting the applicability of its findings to global populations.

To address these gaps, this review synthesizes evidence on obstetric, psychological, sociodemographic, social, behavioral, and lifestyle determinants of postpartum depression across studies conducted in Asia, Africa, Europe, and the Americas. The reviews described above were limited by a narrower focus on determinant categories, a single-database search, or a specific geographic region. This review's specific contribution is to bring these determinant domains together and compare how consistently their associations with postpartum depression are reported across international studies. The synthesis identifies obstetric factors as the most frequently studied and social support as the most consistently reported protective factor. This review aims to identify and synthesize the main risk factors associated with postpartum depression and assess the consistency of findings across international studies.

RESEARCH METHOD

Design

This narrative review aimed to comprehensively synthesize the determinants of postpartum depression reported in various research articles.

Eligibility Criteria

Eligibility was limited to primary studies adopting quantitative observational designs, specifically cross-sectional, cohort, or case-control approaches; (2) investigated factors associated with increased or reduced postpartum depression risk; (3) provided unrestricted access to complete articles; (4) were published in English; and (5) appeared between 2021 and 2026. Publications involving reviews, qualitative research, individual case reports, or insufficiently documented variables were not considered.

Databases and Search Strategy

Two researchers independently searched three databases, PubMed, Taylor & Francis, and ScienceDirect, from August 1 to 27, 2026. The search terms used Boolean operators: *("postpartum depression" OR "postnatal depression" OR "postpartum depressive symptoms") AND (determinant OR factor OR "risk factor" OR predictor OR "associated factor") AND ("postpartum women" OR mothers)*. The search was restricted to peer-reviewed observational research published in English between 2021 and 2026, with complete articles accessible without charge. From 3,951 records initially retrieved, only 12 studies satisfied the established eligibility requirements.

Study Selection

Rayyan was used to organize the article selection process. The initial search results were checked for duplicate entries, which were discarded before further evaluation. Titles and abstracts were then reviewed to identify publications relevant to the research objectives. The remaining papers were examined in their entirety against the established eligibility criteria. Articles deemed unsuitable were removed with documented justifications, while those fulfilling all requirements formed the final set of studies for narrative synthesis.

Data Extraction

Data were collected from all studies that fulfilled the eligibility requirements, covering the authors' names, publication year, country of origin, research design, number of participants, measurement instruments, and principal findings.

Risk-of-Bias Assessment

The methodological rigor of each eligible article was evaluated separately by two reviewers, who applied the relevant Joanna Briggs Institute (JBI) appraisal instruments based on whether the research employed a cohort, case-control, or analytical cross-sectional design. Each item was classified as "Yes," "No," "Unclear," or "Not applicable." Studies fulfilling the appraisal standards without substantial methodological limitations were considered at low risk of bias. Moderate risk was assigned when important methodological details were inadequately reported, particularly participant attrition and follow-up completeness. Cohort studies were evaluated for baseline comparability, exposure measurement, confounding factors, outcome reliability, follow-

up adequacy, and statistical methods. Cross-sectional studies were assessed for participant selection, measurement accuracy, identification and control of confounders, and appropriate statistical analysis (Aromataris and Munn, 2020).

Data Synthesis

Data from the included studies were integrated using narrative synthesis, focusing on the variables investigated and each study's objectives. The analysis identified recurring themes, patterns, and trends across the findings. Similarities and differences between studies were compared to assess consistency and explore potential reasons for variation. Relationships among key concepts, evidence strength, and differences in research contexts were also considered. These comparisons provided the basis for an integrated interpretation of the available evidence. The study selection process is presented in Figure 1.

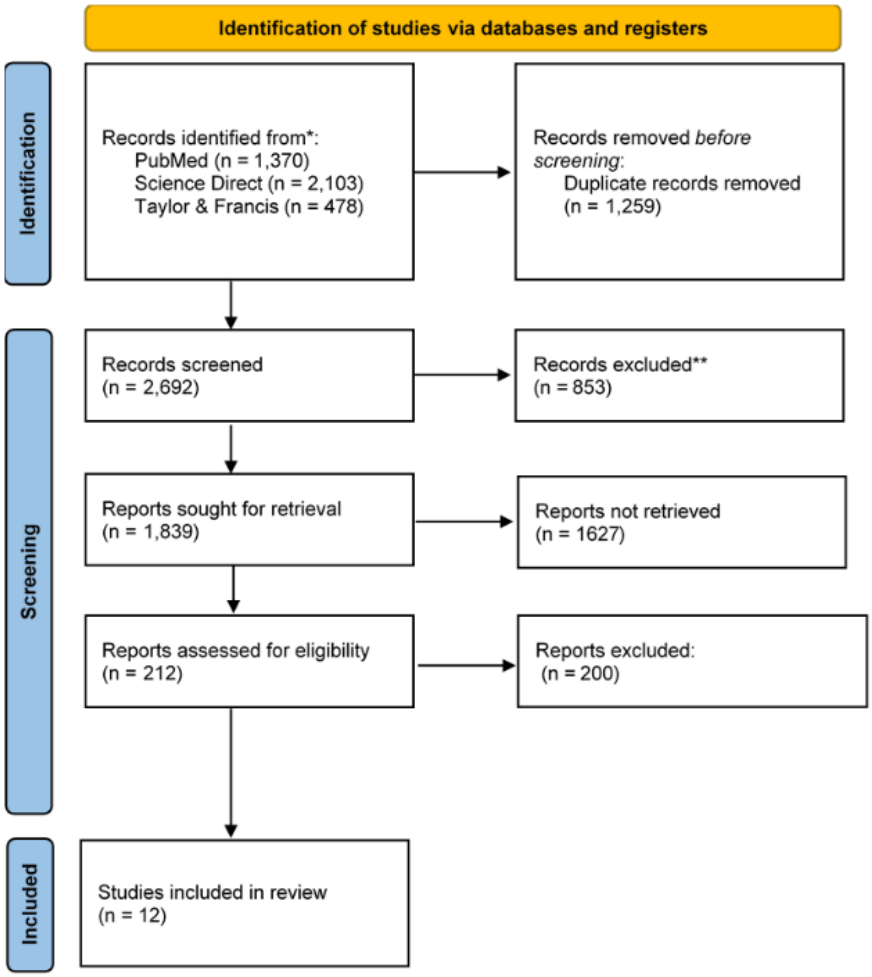


Figure 1. PRISMA Flow Diagram

RESULTS AND DISCUSSION

Results

Twelve studies met the inclusion criteria and were analyzed in this review. They were conducted across several geographic regions—Asia, Africa, Europe, and the Americas—providing a diverse, cross-national perspective on the determinants of postpartum depression. Most studies used a cross-sectional design; the remainder comprised prospective and retrospective observational studies, case-control studies, and secondary data analyses. Sample sizes varied widely, from 60 postpartum women in the smallest study to more than 52,122 medical records in the largest. Across the reviewed studies, the Edinburgh Postnatal Depression Scale (EPDS) was the predominant tool for identifying postpartum depression, administered independently or alongside other validated measures. Table 1 presents an overview of the characteristics and key findings of all 12 studies.

Table 1. Data Extraction

Study ID	Study Design	Sample	Instruments	Main Findings
Lin et al., (2024), Taiwan	Cross-sectional	60 postpartum women	EPDS; NRS	Postpartum depression was associated with a history of abortion ($p = 0.04$), postpartum pain ($p < 0.001$), having a childcare provider ($p = 0.03$), sleep patterns ($p = 0.01$), and cesarean delivery ($p = 0.045$).
Abenova et al., (2022), Kazakhstan	Cross-sectional	251 postpartum women	EPDS	Postpartum depression was associated with living with a husband ($p = 0.007$), residential satisfaction ($p = 0.001$), pregnancy complications ($p = 0.026$), and the husband's employment status ($p = 0.024$).
Bening et al., (2025), Ghana	Prospective multicenter cross-sectional study	502 postpartum women	EPDS; ESSI	Postpartum depression was associated with maternal education ($p < 0.001$), social support ($p < 0.001$), unplanned pregnancy ($p = 0.011$), and regular physical exercise ($p = 0.04$).
Ekelof et al., (2021), Swedia	Retrospective observational study	525 postpartum women	EPDS; SGPAL	Physical activity ($p = 0.001$) and social support were associated with postpartum depression.
Kondracki et al., (2024), Amerika Serikat	Case-control study	52,122 postpartum women	PRAMS	Smoking behavior and antenatal depression were associated with postpartum depression.

Lee et al., (2023), Korea Selatan	Cross-sectional web-based survey	1,486 postpartum women	EPDS; MPSS	Postpartum depression was associated with income (p = 0.002), parity (p = 0.01), cesarean delivery (p = 0.005), unplanned pregnancy (p = 0.005), and social support (p < 0.001).
Yusuf et al., (2025), Somalia	Hospital-based cross-sectional study	271 postpartum women	EPDS; MSSS	A history of depression, infant sleep difficulties, pregnancy complications, and social support were associated with postpartum depression.
Mulugeta et al., (2023), Ethiopia	Institution-based cross-sectional study	302 postpartum women	EPDS	Educational level and a family history of mental illness were associated with postpartum depression.
Zejnullahu et al., (2021), Albania	Prospective observational cohort study	247 postpartum women	EPDS	Pregnancy complications (p = 0.004), prenatal depression (p = 0.0018), and social support (p = 0.044) were associated with postpartum depression.
Tsai et al., (2023), Taiwan	Retrospective cohort study using secondary data	12,198 medical records	EPDS; medical records	Postpartum depression was associated with educational level (p = 0.000), marital status (p = 0.001), employment status (p = 0.000), mode of delivery (p = 0.000), pregnancy planning (p = 0.000), and gestational age (p = 0.007).
Wang et al., (2024), China	Cross-sectional	2,462 postpartum women	EPDS	Formula feeding (p = 0.013), preterm birth (p = 0.013), and history of depression (p = 0.011) were associated with postpartum depression.
Tesfaye et al., (2023), Ethiopia	Cross-sectional	454 postpartum women	EPDS	Being single, pregnancy complications, formula feeding, and low social support were associated with postpartum depression.

Note: EPDS = Edinburgh Postnatal Depression Scale, ESSI = ENRICHD Social Support Inventory, SGPAL = Saltin Grimbly Physical Activity Level, PRAMS = Pregnancy Risk Assessment Monitoring System, MPSS: Multidimensional Scale of Perceived Social Support, MSSS = Maternity Social Support Scale

Categories of Determinants

Among the obstetric determinants, pregnancy complications (Abenova et al., 2022; Mulugeta et al., 2023; Tesfaye et al., 2023; Tsai et al., 2023; Wang et al., 2024; Yusuf et

al., 2025; Zejnullahu et al., 2021), cesarean delivery (Bening et al., 2025; Lee et al., 2023; Tsai et al., 2023; Zejnullahu et al., 2021), preterm birth (Tsai et al., 2023; Wang et al., 2024), parity (Lee et al., 2023), a history of abortion (Lin et al., 2024), unplanned pregnancy (Bening et al., 2025; Lee et al., 2023; Tsai et al., 2023), and breastfeeding difficulties (Mulugeta et al., 2023; Tesfaye et al., 2023; Wang et al., 2024), were consistently associated with an increased risk of postpartum depression across the studies analyzed.

Among the psychological determinants, antenatal depression (Kondracki et al., 2024; Zejnullahu et al., 2021), a history of mental disorders or previous depressive episodes (Wang et al., 2024; Yusuf et al., 2025), stress and emotional distress (Lee et al., 2023; Yusuf et al., 2025), postpartum pain, and sleep quality, (Lin et al., 2024) were consistently and strongly associated with postpartum depression.

Among the sociodemographic determinants, social support was the most prominent and consistently identified protective factor, as reported in six studies. Low levels of social support from a partner or family were closely associated with an increased risk of postpartum depression (Abenova et al., 2022; Bening et al., 2025; Ekelof et al., 2021; Lee et al., 2023; Tesfaye et al., 2023; Yusuf et al., 2025; Zejnullahu et al., 2021). Other significant determinants included marital status (Abenova et al., 2022; Lee et al., 2023; Tesfaye et al., 2023), educational level (Bening et al., 2025; Mulugeta et al., 2023; Tsai et al., 2023), employment status (Abenova et al., 2022; Tsai et al., 2023), economic status (Bening et al., 2025; Lee et al., 2023), and less harmonious family relationships (Abenova et al., 2022; Zejnullahu et al., 2021).

Among the behavioral and lifestyle determinants, higher levels of physical activity appeared to have a protective effect against postpartum depression (Bening et al., 2025; Ekelof et al., 2021). In contrast, smoking during pregnancy and inadequate sleep were associated with an increased risk, particularly when accompanied by antenatal depression (Kondracki et al., 2024; Lin et al., 2024). Childcare factors, including the availability of help with caring for the baby, may also modify the risk of postpartum depression by reducing mothers' psychosocial burden (Lin et al., 2024).

Risk-of-Bias Assessment

The risk of bias in each study was examined using the JBI checklist corresponding to its research design, including cross-sectional, cohort, and case-control studies. Eleven articles demonstrated a low risk of bias, supported by adequate descriptions of measurement tools, participant selection, data collection, and analytical procedures. However, Zejnullahu et al., (2021) received a moderate risk rating due to insufficient information regarding participant attrition and follow-up completeness. Despite this limitation, all 12 studies satisfied the quality assessment requirements and were retained in the review.

Discussion

Based on the 12 studies reviewed, the determinants of postpartum depression are multifactorial and cannot be attributed to a single cause. Given the wide range of factors identified, they were grouped into four categories: obstetric, psychological, maternal sociodemographic, and behavioral and lifestyle determinants. The most frequently reported factors in these categories were pregnancy complications, antenatal depression, social support, and physical activity.

Postpartum depression can be defined as emotional changes experienced by mothers during the postpartum period, characterized by sadness, anxiety, or excessive fatigue (Kondracki et al., 2024). These changes do not always occur suddenly; they may develop gradually and become more serious over time. This issue is particularly important because psychological disorders have been identified as one of the factors contributing to the high rate of maternal deaths during the postpartum period in recent years (Lee et al., 2023; Tesfaye et al., 2023).

Postpartum depression affects not only maternal mental health but may also have short- and long-term consequences for child well-being and overall family functioning. In mothers, it may lead to a reduced quality of life, sleep disturbances, prolonged fatigue, low motivation to care for themselves and their babies, breastfeeding difficulties, impaired maternal bonding, conflict with a partner, and—in severe cases—an increased risk of suicidal ideation. In children, postpartum depression is associated with attachment difficulties, lower rates of exclusive breastfeeding, delays in cognitive, emotional, and social development, sleep and behavioral regulation problems, and an increased risk of health and growth problems, including stunting. In the long term, children raised by mothers with postpartum depression may be at greater risk of behavioral problems, learning difficulties, and mental health disorders (Lin et al., 2024; Yusuf et al., 2025).

Obstetric determinants comprise conditions, complications, and previous histories directly related to pregnancy, childbirth, and the postpartum period. Suboptimal obstetric conditions may affect postpartum depression by increasing physical demands and emotional distress, and by disrupting maternal adjustment after childbirth. Difficult pregnancy or childbirth experiences may cause fear, anxiety, helplessness, or even trauma, particularly when mothers feel they have lost control over their bodies and the birthing process. When these physical and emotional demands are not balanced by psychological readiness and adequate support, mothers may be more vulnerable to prolonged stress, which can develop into postpartum depression (Abenova et al., 2022; Mulugeta et al., 2023; Tesfaye et al., 2023; Tsai et al., 2023; Wang et al., 2024; Yusuf et al., 2025; Zejnullahu et al., 2021).

Cesarean delivery and postpartum pain may limit maternal mobility and interfere with infant care, while preterm birth may increase anxiety because the baby requires more intensive attention and care. An unplanned pregnancy may also increase a mother's psychological unpreparedness for the changes in her role, thereby increasing her vulnerability to postpartum depression. These findings are particularly relevant given that obstetric determinants were among the most frequently studied factors and were

consistently associated with postpartum depression across multiple studies (Bening et al., 2025; Wang et al., 2024).

Psychological determinants affect postpartum depression because they are directly related to mothers' mental health, coping abilities, and emotional readiness to manage the major changes that follow childbirth. The postpartum period requires mothers to adjust to changes in their roles and bodies, caregiving responsibilities, and emotional demands, all of which may cause psychological distress. When mothers are psychologically vulnerable or experience unaddressed emotional distress, their ability to manage stress may decline. Consequently, anxiety, sadness, helplessness, and emotional exhaustion may develop into postpartum depression (Kondracki et al., 2024; Lee et al., 2023).

Antenatal depression, a history of depression or other mental disorders, stress and emotional distress, and poor sleep quality may increase mothers' vulnerability to mood disorders after childbirth. This suggests that psychological disorders arising during pregnancy may persist or worsen during the postpartum period, particularly if they are not detected and adequately addressed. Poor sleep quality and emotional distress during the transition to motherhood may also exacerbate physical and emotional exhaustion.

Maternal social circumstances and everyday behaviors may also shape the likelihood of postpartum depression. Of these factors, support from spouses, family members, and surrounding communities showed the most consistent protective association, potentially easing the emotional and physical challenges of early motherhood. Exercise was likewise associated with lower vulnerability, whereas smoking, disrupted sleep, and intensive newborn care were linked to greater depressive risk. These findings indicate that postpartum depression reflects overlapping influences rather than isolated causes, encompassing pregnancy-related conditions, maternal psychological health, economic circumstances, interpersonal support, and childcare responsibilities (Bening et al., 2025; Ekelof et al., 2021).

The synthesis of the 12 studies indicates that postpartum depression is a multifactorial condition influenced by complex interactions among obstetric, psychological, sociodemographic, social, behavioral, and lifestyle determinants. The most consistently reported factors were pregnancy- and childbirth-related complications or conditions, psychological disorders that emerged before or during pregnancy, low social support, and unfavorable socioeconomic circumstances. Social support was the most prominent protective factor, while obstetric determinants were the most frequently studied group of factors. Although the overall findings showed associations across countries, variation was most apparent in sociodemographic determinants, including education, marital status, employment, and income, as well as behavioral and caregiving factors, such as physical activity, smoking, and infant sleep or care needs. These factors were reported in only a subset of studies and examined in different populations and study designs. By comparison, social support and pregnancy complications were more consistently associated with postpartum depression. These differences may reflect variations in population characteristics, cultural contexts, healthcare systems, study designs, and sample sizes. Unlike previous literature reviews that primarily focused on

specific geographical, social, economic, or psychological determinants (Wulandari et al., 2025; Yazdkhasti et al., 2026), the present review integrates obstetric, psychological, sociodemographic, social, behavioral, and lifestyle determinants across studies from different geographical regions. The novelty of this review lies in comparing the consistency of these determinants across international studies, highlighting obstetric factors as the most frequently investigated and social support as the most consistently reported protective factor.

These findings have implications for postpartum care: early detection of postpartum depression should be incorporated into routine maternal healthcare during both pregnancy and the postnatal period. Regular screening with instruments such as the Edinburgh Postnatal Depression Scale (EPDS) is important, particularly for mothers who have experienced depressive symptoms during pregnancy or have biological, psychological, social, or economic risk factors (Ji & Wang, 2025). Healthcare professionals, including midwives and nurses, should take a holistic approach that considers not only mothers' physical health but also family support, psychological readiness, economic circumstances, and caregiving demands. Educating partners and family members is also important to help ensure that mothers receive emotional and practical support during the postpartum period. At the program level, this multidimensional approach can guide postpartum mental-health services across primary, hospital, and community settings to integrate routine screening, risk-informed assessment, and referral pathways tailored to local needs and available resources (Yusuf et al., 2025).

CONCLUSION

The evidence drawn from 12 studies indicates that postpartum depression is shaped by interconnected obstetric, psychological, sociodemographic, and lifestyle-related factors. Although obstetric conditions received the greatest research attention, social support emerged as the most consistent protective factor. A history of psychological difficulties before or during pregnancy, socioeconomic disadvantages, certain health behaviors, and challenges associated with infant care may further increase maternal vulnerability to depression. These findings highlight the importance of integrating postpartum depression prevention and early identification into routine maternal healthcare. Such efforts should combine regular mental health screening, individualized assessment of potential risks, and sustained assistance from healthcare providers, partners, and family members to safeguard maternal psychological well-being.

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