International Journal of Scientific Reports
John G et al. Int J Sci Rep. 2026 Jun;12(6):246-255
https://www.sci-rep.com
pISSN 2454-2156 | eISSN 2454-2164
DOI: https://dx.doi.org/10.18203/issn.2454-2156.IntJSciRep20261491

Review Article

Postpartum depression: a scoping review of epidemiology, determinants, pathophysiological mechanisms and management

Giggy John[1]*, Presthiena Lofi[2]

[1]Government College of Nursing, Idukki, Kerala, India
[2]Amrita College of Nursing, Kochi, Kerala, India

Received: 07 April 2026
Accepted: 06 May 2026

***Correspondence:**
Giggy John,
E-mail: johngiggy2020@gmail.com

ABSTRACT

Postpartum depression (PPD) is a common maternal mental health problem with significant consequences for mothers, infants, and families. Despite growing research, evidence remains fragmented across different domains, limiting a comprehensive understanding. This scoping review aimed to map and synthesize the existing literature on the epidemiology, determinants, pathophysiological mechanisms, and prevention and management strategies of postpartum depression. A scoping review was conducted following the framework proposed by Arksey and O'Malley and reported in accordance with PRISMA-ScR guidelines. A comprehensive search of PubMed, Scopus, and Google Scholar was performed for studies published between 2000 and 2025. Studies addressing postpartum depression in terms of prevalence, risk factors, biological mechanisms, and interventions were included. Data were extracted and synthesized thematically. A total of 33 studies were included in the review. The global prevalence of postpartum depression was estimated at approximately 17%, with higher rates observed in low- and middle-income countries. Key determinants included antenatal depression, psychosocial stressors, lack of social support, and obstetric complications. Pathophysiological mechanisms involved hormonal withdrawal, hypothalamic-pituitary-adrenal axis dysregulation, neurochemical alterations, and inflammatory processes. Prevention strategies focused on early screening, psychosocial interventions, and the management of modifiable risk factors. Management approaches included psychological therapies, pharmacological treatment, and emerging therapies such as neurosteroid-based interventions. Postpartum depression is a complex condition that needs integrated, multidisciplinary strategies for effective prevention and management. Enhancing early screening, increasing access to mental health services, and implementing tailored, context-specific interventions are crucial to lowering the global burden of postpartum depression.

Keywords: Postpartum depression, Postnatal depression, Maternal mental health, Risk factors, Prevention, Management

INTRODUCTION

Maternal mental health during pregnancy and the postpartum period is an essential public health concern that affects women from diverse social, economic, and cultural backgrounds. The transition to motherhood involves significant physiological, hormonal, psychological, and lifestyle changes, which can increase vulnerability to emotional issues such as anxiety and depression. These challenges can negatively impact maternal self-care, caregiving abilities, and the overall well-being of the family. Postpartum depression (PPD) is a clinically significant mood disorder that occurs after childbirth and is characterized by persistent low mood, loss of interest, fatigue, sleep disturbances, and impaired mother–infant bonding. It is recognized as a major contributor to maternal morbidity worldwide by the World Health Organization (WHO).[1] Diagnostic criteria vary across classification systems; the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), defines peripartum depression as occurring during pregnancy or within four weeks postpartum, whereas the International

Classification of Diseases (ICD-10) considers onset within six weeks after delivery.[2,3]

The global burden of postpartum depression is significant, with prevalence estimates varying greatly across populations. A systematic review and meta-analysis showed that prevalence rates differ notably due to geographic, methodological, and sociocultural factors.[4] Evidence indicates that postpartum depression is more prevalent in low- and middle-income countries, where socioeconomic status, limited healthcare access, and lack of social support increase vulnerability.[5,6] A global meta-analysis estimated the pooled prevalence of postpartum depression to be around 17%, underscoring the seriousness of the issue.[7]

Regional studies highlight the variation in prevalence rates, especially in countries like India where cultural, social, and healthcare differences impact maternal mental health outcomes.[8] Research over time and observational studies reveal that antenatal psychiatric symptoms, stressful life events, and social challenges considerably raise the risk of postpartum depression.[9-11] More recently, global crises such as the COVID-19 pandemic have been linked to a rise in postpartum depressive symptoms, likely driven by increased stress, social isolation, and interruptions in healthcare services.[12]

The consequences of postpartum depression go beyond maternal health and have significant effects on infants and families. Untreated postpartum depression can impair maternal functioning, disrupt mother-infant bonding, and lead to developmental, behavioural, and emotional issues in children.[13] It is also linked to long-term psychological morbidity and a lower quality of life for affected women.[14] Although a substantial body of literature exists on postpartum depression, most studies focus on individual aspects such as prevalence, risk factors, or management strategies in isolation. There is a need for a comprehensive synthesis that integrates evidence across multiple areas, including epidemiology, determinants, pathophysiological mechanisms, and management strategies, in a way that is meaningful for clinical practice.

Therefore, this review aims to systematically map and synthesize the existing literature on postpartum depression, focusing on its epidemiology, determinants, pathophysiological mechanisms, and prevention and management strategies. This approach is intended to support evidence-based clinical practice and identify gaps for future research in maternal mental health.

METHODS

Study design

This study was conducted as a scoping review to explore the existing research on postpartum depression, focusing on its prevalence, causes, biological mechanisms, and approaches to prevention and treatment. The review followed the framework developed by Arksey and O'Malley and adhered to the PRISMA-ScR guidelines to ensure clear and thorough reporting.

Research question

This review was guided by the following research question: "What is the existing evidence on postpartum depression regarding its epidemiology, determinants, underlying mechanisms, and prevention and management across global contexts?".

Search strategy

A comprehensive literature search was conducted using electronic databases, including PubMed, Scopus, and Google Scholar. The search strategy combined Medical Subject Headings (MeSH) terms and keywords such as "postpartum depression", "perinatal depression", "risk factors", "epidemiology", "screening", "prevention", and "management". Boolean operators (AND, OR) were used to refine the search. The search was limited to articles published in English between January 2000 and March 2025 to ensure inclusion of recent evidences.

Eligibility criteria

Inclusion criteria

Studies were included if they: focused on postpartum depression among women, addressed at least one of the following domains: epidemiology, determinants, pathophysiology, screening, prevention, or management, included observational studies, systematic reviews, meta-analyses, narrative reviews, or clinical guidelines, and were published in peer-reviewed journals.

Exclusion criteria

Studies were excluded if they: did not focus on postpartum women; were editorials, commentaries, or conference abstracts without sufficient data; were not available in English; or were not relevant to the objectives of the review.

Study selection

All identified articles were screened in two stages. Initially, titles and abstracts were reviewed to identify potentially relevant studies. This was followed by full-text screening to assess eligibility based on the predefined inclusion and exclusion criteria. Duplicate records were removed prior to screening (Figure 1).

Data synthesis

The extracted data were synthesized using a thematic approach. Findings were organized into four key domains: epidemiology, determinants (risk factors), pathophysiological mechanisms, and prevention and management. The

results are presented in both narrative form and tabulated summaries to provide a comprehensive overview of the available evidence.

Ethical considerations

This study was part of a research project that received ethical approval from the Institutional Ethics Committee (IEC No: G2-312/2015/CONTSR(6)(15/6/24)). However, the current study is a scoping review based solely on previously published literature and did not involve any human participants or primary data collection.

Therefore, no additional ethical approval was necessary for this component of the research.

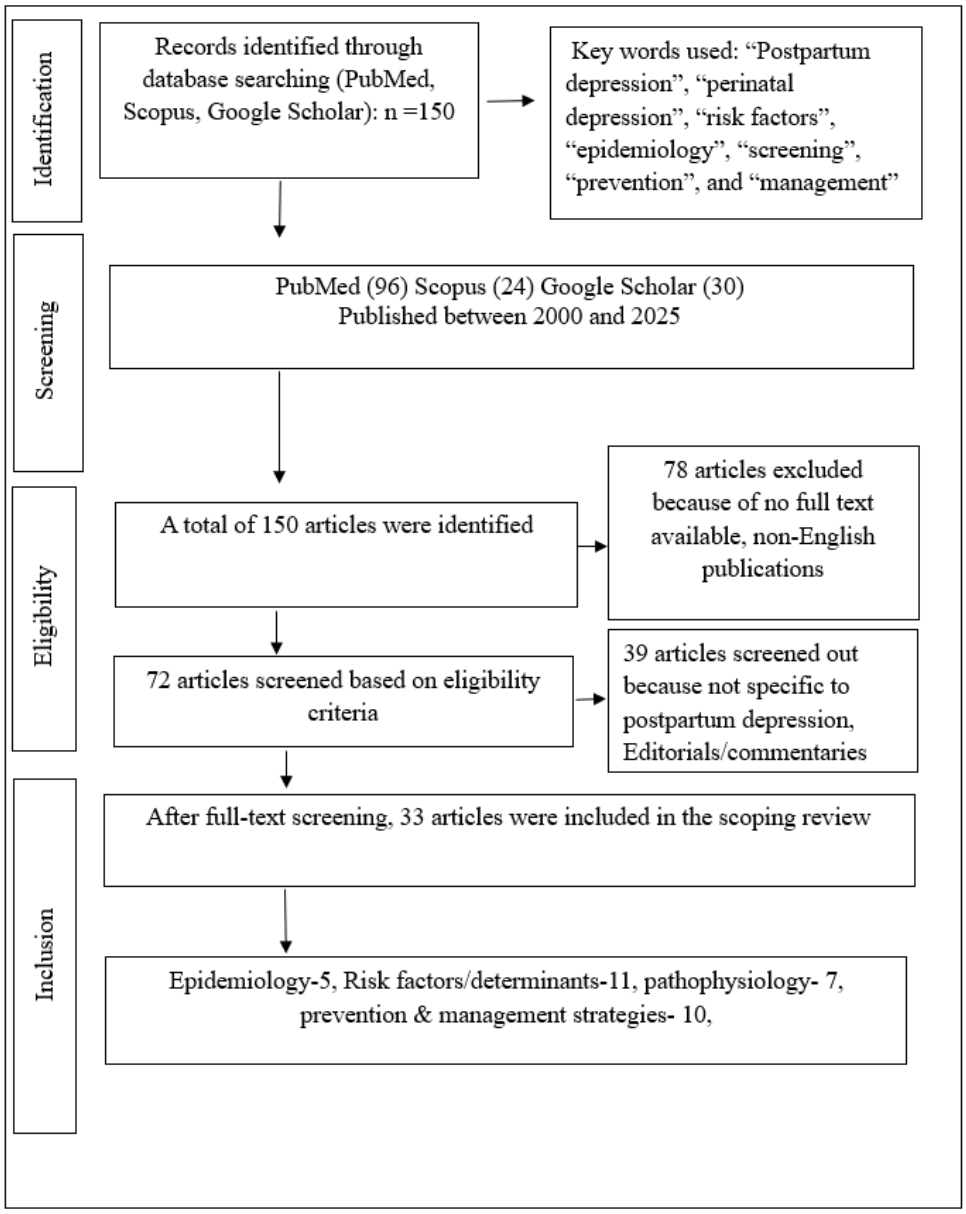

Figure 1: PRISMA flow chart of the studies selected for the current scoping review.

RESULTS

Domain 1: epidemiology of post-partum depression

PPD is a common maternal mental health condition with significant variation in prevalence worldwide. Evidence from a large meta-analysis estimated that the global prevalence of postpartum depression is about 17%, though there is considerable heterogeneity across different regions.[15] This variation is due to differences in study methodologies, diagnostic criteria, cultural contexts, and socioeconomic factors conditions.

Similarly, a systematic review reported that the prevalence of postpartum depression varies widely across populations, with consistently higher rates observed in low- and middle-income countries (LMICs).[4] These findings highlight the influence of contextual factors such

as limited access to healthcare, socio-economic adversity, and inadequate social support systems in increasing vulnerability to postpartum depression symptoms.

Multinational evidence further supports the role of sociodemographic factors in shaping the epidemiology of PPD. A recent cross-sectional study demonstrated that elements such as maternal age, educational level, employment status, and marital conditions significantly influence the occurrence of postpartum depression across different populations.[6]

Earlier work highlighted that the burden of perinatal mental disorders, including postpartum depression, is significantly higher in resource-limited settings. The authors pointed out that the lack of recognition and limited mental health services further contribute to many cases remaining untreated in these communities. The global trends showed an increase in postpartum depression rates during the pandemic era. A recent meta-analysis reported a rise in depressive symptoms among postpartum women during the COVID-19 pandemic, likely caused by factors such as social isolation, fear of infection, and disruptions in healthcare services.[17] The epidemiology of postpartum depression reflects a complex interplay of geographic, socioeconomic, and contextual factors. The consistently higher burden observed in LMICs and during global crises highlights the need for improved screening, early detection, and tailored mental health interventions to lessen the impact of postpartum depression (Table 1).

Table 1: Epidemiology of postpartum depression.

Author	Year	Region	Study design	Key findings
Wang et al[15]	2021	Global	Meta-analysis	Global prevalence around 17%, high heterogeneity across regions
Liu et al[4]	2022	Global	Systematic review	Prevalence varies widely, higher in LMICs
Amer et al[6]	2024	Multinational	Cross-sectional	Socio-demographic factors strongly influence PPD
Fisher et al[16]	2012	Global	Review	Higher burden in low-resource settings
Vilarim et al[12]	2024	Global	Meta-analysis	Increased PPD during the COVID-19 pandemic

Domains 2: Determinants or risk factors of postpartum depression

Postpartum depression is a multifactorial condition caused by the interaction of biological, psychological, social, and obstetric factors. The included studies highlight a wide range of determinants that contribute to the development of postpartum depressive symptoms.

Biological factors

Genetic and familial predisposition has been recognized as a significant biological factor. Evidence from family-based studies suggests that women with a history of mood disorders or a family history of depression are at higher risk of developing postpartum depression.[18,19]

This genetic vulnerability may affect how individuals respond to hormonal changes and environmental stressors during the perinatal period.

Psychological factors

Psychological factors are among the most consistently reported predictors of postpartum depression. A history of depression or anxiety, especially during pregnancy, has been strongly linked to postpartum depressive outcomes.[20,21] Furthermore, exposure to stressful life events, low self-esteem, and past trauma, including childhood abuse or intimate partner violence, further increase the risk of postpartum depression.[20]

Social and environmental factors

Social and environmental factors also significantly influence maternal mental health outcomes. Lack of emotional and practical support from partners and family members, marital conflict, and socioeconomic challenges are consistently linked to higher risk.[21,22] Women experiencing intimate partner violence are shown to have a notably greater likelihood of developing postpartum depression compared to those not exposed.[21]

Hormonal and neurophysiological factors

Hormonal and neurophysiological changes during pregnancy and the postpartum period further contribute to postpartum depression development. Fluctuations in reproductive hormones, including estrogen and progesterone, and alterations in neuroendocrine pathways such as the hypothalamic–pituitary–adrenal (HPA) axis, have been linked to mood dysregulation.[23,24] These biological changes may interact with psychosocial stressors, increasing vulnerability.

Obstetric and perinatal factors

These have also been identified as significant contributors. Conditions such as unplanned pregnancy, preterm birth, obstetric complications, and gestational conditions, including anaemia, gestational diabetes, and obesity, are linked to a higher risk of postpartum depression.[25-29] Additionally, issues related to breastfeeding, neonatal

illness, and impaired mother-infant bonding may further increase psychological distress.[24]

Lifestyle-related factors

Lifestyle-related factors, including sleep deprivation, poor nutrition, financial stress, and reduced physical activity, have also been linked to postpartum depression.[30] Evidence suggests that regular physical activity may protect by improving mood and reducing depressive symptoms.

The determinants of postpartum depression involve a complex interaction of biological, psychological, and social factors. The combined effect of multiple risk factors substantially raises the chances of developing postpartum depression, emphasising the importance of early detection and targeted interventions (Table 2).

Table 2: Determinants or risk factors of postpartum depression.

Author	Year	Study design	Population	Key risk factors	Key findings
Guintivano et al[20]	2018	Observational	Pregnant women	Stressful life events	Strong predictor of PPD
Hutchens et al[21]	2020	Review article	General population	Antenatal depression	Most consistent risk factor
Zhao et al[26]	2020	Review	General population	Multiple factors	Multifactorial etiology confirmed
Lara-Cinisomo et al[22]	2019	Observational	Women	Cultural stress	Social determinants increase risk
Arafa et al[28]	2019	Meta-analysis	Pregnant women	Gestational diabetes	Increased depressive symptoms
Azami et al[27]	2019	Meta-analysis	Postnatal women	Anemia	Significant association with PPD
Steinig et al[29]	2017	Systematic review	Pregnant women	Obesity	Linked to antenatal & postnatal depression
Carlson et al[25]	2024	Clinical review	Postpartum women	Obstetric factors	Complications increase risk
Ghaedrahmati et al[30]	2017	Review	General population	Lifestyle factors	Sleep, stress, and inactivity contribute
Glynn et al[23]	2013	Review	Pregnant women	HPA axis dysregulation	Stress response affects mood
Licheri et al[24]	2015	Review	Perinatal women	Neurochemical changes	GABA-related mechanisms involved

Domain 3: Pathophysiology of postpartum depression

The pathophysiology of postpartum depression is complex and involves interactions among neurobiological, hormonal, psychological, and environmental factors. No single pathway can fully explain the onset; instead, various theoretical models have been proposed to describe the underlying processes that lead to depressive symptoms during the postpartum period.

Biological model

The biological perspective describes the role of neuroendocrine and neurochemical changes that happen during and after pregnancy. During pregnancy, levels of reproductive hormones such as estrogen and progesterone remain high, then decrease rapidly after childbirth. This abrupt hormonal shift affects neurotransmitter systems involved in mood regulation. Specifically, reduced activity of gamma-aminobutyric acid (GABA) receptors due to hormonal withdrawal can weaken inhibitory neural mechanisms.

Additionally, lower levels of neurosteroids like allopregnanolone, which are essential for emotional stability, have been associated with depressive symptoms. Dysregulation of cortisol secretion and heightened stress responses increase the risk of emotional problems during the postpartum period.

Hormonal withdrawal model

The hormonal withdrawal model suggests that the abrupt drop in estrogen and progesterone levels after delivery disrupts neurobiological balance. During pregnancy, elevated hormone levels might protect mood; however, the rapid fall following childbirth can trigger depressive symptoms, especially in women sensitive to hormonal changes. Ongoing hormonal instability and decreasing estrogen levels can therefore increase the risk of postpartum depression.[34]

Depression and stress-response model

This model emphasizes the role of the hypothalamic-pituitary-adrenal (HPA) axis in postpartum depression

development. Elevated cortisol levels associated with psychosocial stress, combined with impaired regulatory feedback mechanisms, may lead to mood disturbances. Changes in dopamine pathways and extended exposure to stress-related neuroendocrine alterations can further elevate the risk of depressive symptoms. This framework supports the idea that postpartum depression often occurs in the context of accumulated stress and reduced adaptive capacity during the postpartum period.[35]

Psychological model

The psychological model emphasizes the impact of emotional and cognitive stressors related to pregnancy and early motherhood. Adapting to the maternal role, experiencing childbirth-related trauma, managing preterm birth or infant health issues, coping with sleep deprivation, and adjusting to caregiving duties can overwhelm an individual's coping capacity. Maladaptive thought patterns, negative self-perceptions, and feelings of inadequacy concerning parenting may further increase vulnerability to depression. These psychological stressors often interact with underlying biological predispositions.[36]

Integrated model

The integrated model suggests that postpartum depression results from a combination of genetic susceptibility, hormonal changes, and environmental stressors. According to this perspective, the disorder develops when biological vulnerability interacts with psychosocial challenges. Genetic factors may influence sensitivity to hormonal fluctuations and stress, increasing the risk of depressive symptoms during the postpartum period.[37]

Evolutionary model

The evolutionary perspective suggests that postpartum depression may partly result from maladaptive responses to expectations in modern social environments. Reduced access to traditional support systems, increased caregiving responsibilities, and changes in social roles may contribute to emotional distress after childbirth. From this viewpoint, postpartum depression might be caused by a mismatch between biological expectations and current social conditions.[38]

Immuno-inflammatory model

Emerging evidence highlights the role of immune and inflammatory processes in postpartum depression development. Elevated levels of inflammatory markers, especially interleukin-6, have been observed after childbirth and are linked to depressive symptoms that may persist for several months postpartum.

Activation of inflammatory pathways can influence neurotransmitter metabolism and neuroendocrine function, contributing to mood disturbances during this period.[39] The summary of the studies used to extract these domains is given in Table 3.

Domain 4: Prevention and management strategies of postpartum depression

The included studies highlight that prevention and management of postpartum depression (PPD) require a comprehensive, multidimensional approach involving early identification, psychosocial interventions, pharmacological treatment, and supportive care strategies.

Table 3: Pathophysiology of postpartum depression.

Author	Year	Mechanism	Key pathway	Key findings
Meltzer-Brody et al[31]	2020	Neurosteroid	Allopregnanolone	Reduced neurosteroids linked to PPD
Douma et al[32]	2005	Hormonal	Estrogen withdrawal	Hormonal decline affects mood regulation
Nandam et al[33]	2020	Neuroendocrine	Cortisol/HPA axis	Stress-response dysregulation linked to depression
Glynn et al[23]	2013	HPA axis	Stress regulation	Altered feedback increases vulnerability
Licheri et al[34]	2015	Neurochemical	GABA receptors	Reduced inhibitory signalling affects mood
Liu et al[4]	2016	Inflammatory	Cytokines (IL-6)	Inflammation associated with depressive symptoms
Helpman[35]	2023	Integrated model	Biopsychosocial	Interaction of genetic and environmental factors

Screening and early identification

Early identification of women at risk for postpartum depression is a crucial part of preventive care. Routine screening during pregnancy and after childbirth is recommended to enable timely diagnosis and intervention.[38] Clinical assessment, including evaluation of psychiatric history, psychosocial stressors, and obstetric factors, plays an essential role in recognising high-risk individuals.[39]

Several validated screening tools are widely used in both clinical and community settings. The Edinburgh Postnatal Depression Scale (EPDS) is the most commonly used screening instrument for postpartum depression.[40] Other tools, including the Beck Depression Inventory (BDI),

Hamilton Depression Rating Scale (HDRS), and Patient Health Questionnaire (PHQ-9), are also effective in assessing symptom severity and guiding further evaluation.[41-43]

Preventive strategies

Preventive interventions mainly focus on addressing modifiable risk factors and enhancing psychosocial support. Strong social support from partners, family, and community networks has been identified as a key protective factor that decreases both the risk and severity of postpartum depression.[44] Psychological interventions, especially cognitive-behavioural therapy and interpersonal therapy, have proven effective in reducing the onset and severity of depressive symptoms when applied during the antenatal or early postpartum period.[44,45] Pharmacological prevention may be considered for women with a history of postpartum depression or mood disorders. Evidence suggests that continuing or early initiating antidepressant therapy in high-risk women can lower recurrence rates.[45] Emerging evidence also points to a possible role of ketamine or esketamine in preventing postpartum depression in specific populations, although further research is needed before routine use.[46] Lifestyle changes, including sufficient sleep, balanced nutrition, stress management, and physical activity, are also crucial parts of preventive strategies.[47] Routine screening at multiple stages during pregnancy and postpartum is recommended to facilitate early detection and lessen disease burden.[44]

Management strategies

Management of postpartum depression involves an individualized approach based on symptom severity, patient preference, and clinical context. Establishing a supportive therapeutic relationship and providing psychoeducation are fundamental components of care.[48]

Psychological therapies are considered first-line treatment for mild to moderate postpartum depression. Cognitive behavioural therapy and interpersonal therapy have been shown to significantly reduce depressive symptoms and improve coping mechanisms.[49,50] Supportive counselling, peer support groups, and mindfulness-based interventions further enhance emotional well-being and reduce social isolation.[50]

Pharmacological treatment is recommended for moderate to severe cases or when psychological interventions are insufficient. Selective serotonin reuptake inhibitors (SSRIs), including sertraline and fluoxetine, are commonly used due to their effectiveness and relatively safe profile during breastfeeding.[51] Other antidepressants, such as tricyclic antidepressants and serotonin-norepinephrine reuptake inhibitors, may be considered based on individual clinical needs.[52]

Hormonal therapies have been explored due to the role of estrogen withdrawal in postpartum depression; however, their routine use remains limited due to inconsistent evidence.[53] Recent advances include neurosteroid therapy, particularly brexanolone, which has demonstrated rapid antidepressant effects but is limited by cost and accessibility.[54]

In severe or treatment-resistant cases, electroconvulsive therapy (ECT) may be considered, especially when rapid symptom relief is required or there is a risk of suicide.[55] Lifestyle interventions, including adequate sleep, nutrition, physical activity, and family support, play an important adjunctive role in improving treatment outcomes.[56]

The studies used for extracting the domain of prevention and management of postpartum depression are summarized in Table 4.

Table 4: Prevention and management of postpartum depression.

Author	Year	Intervention	Population	Key findings
Scottish Intercollegiate Guidelines Network[38]	2012	Screening guidelines	General population	Routine screening improves early detection
Sidebottom et al[43]	2012	Screening tool (PHQ-9)	Pregnant women	Effective for identifying depression
Kathleen et al[44]	2024	Screening tool (EPDS)	Postpartum women	Gold standard screening tool
Bayrampour et al[45]	2020	Pharmacological prevention	High-risk women	Reduces relapse risk
Wang et al[48]	2023	Interpersonal therapy	Postpartum women	Effective in reducing symptoms
Roman et al[49]	2020	Cognitive behavioural therapy	Postpartum women	Improves mood and coping
Li et al[46]	2024	Ketamine	Caesarean mothers	Emerging preventive role
Bashiri et al[51]	2021	SSRI therapy	Postpartum women	Effective pharmacological treatment
Thomson et al[54]	2017	Neurosteroid therapy	Severe PPD	Rapid symptom improvement
Rönnqvist et al[50]	2019	ECT	Severe cases	Effective in treatment-resistant depression

DISCUSSION

This scoping review synthesizes the existing body of evidence on PPD, focusing on its epidemiology, determinants, pathophysiological mechanisms, and prevention and management strategies. The findings highlight that postpartum depression is a multifactorial condition with significant global variation in prevalence and complex underlying mechanisms, requiring integrated and context-specific approaches for effective management.

The review confirms that postpartum depression is a major public health concern, with prevalence estimates varying widely across regions. The pooled global prevalence of about 17% indicates a significant burden, especially in low- and middle-income countries where socioeconomic challenges, limited healthcare access, and weak social support systems increase vulnerability.[7,16] The higher prevalence seen during the COVID-19 pandemic highlights the sensitivity of postpartum mental health to external stressors and healthcare disruptions.[12,17]

The synthesis of evidence on determinants indicates that postpartum depression results from the interaction of biological, psychological, and social factors. Among these, antenatal depression, stressful life events, and lack of social support have emerged as the most consistent predictors.[20-22] Obstetric conditions such as anemia, gestational diabetes, and obesity also contribute to increased risk, emphasizing the importance of incorporating mental health assessments into routine maternal healthcare.[27-29] These findings support the need for early risk detection and targeted interventions during pregnancy and the postpartum period.

The review also emphasizes the complex and multifaceted nature of postpartum depression's pathophysiology. Neuroendocrine changes, especially hormonal withdrawal after childbirth, significantly influence mood regulation.[31,32] Dysfunctions in the hypothalamic–pituitary–adrenal (HPA) axis and stress-response systems further promote the development of depressive symptoms.[33] Emerging evidence also indicates the role of inflammatory processes in postpartum depression.[37] The integrated biopsychosocial model offers a comprehensive framework, suggesting that postpartum depression results from the interaction between biological vulnerabilities and environmental stressors.[35]

Findings related to prevention and management highlight the importance of early screening, psychosocial support, and individualized treatment approaches. Routine screening with validated tools like the Edinburgh Postnatal Depression Scale allows for early detection and prompt intervention.[40] Psychological therapies, especially cognitive behavioural therapy and interpersonal therapy, continue to be first-line treatments for mild to moderate cases.[49,50] Pharmacological treatments, including selective serotonin reuptake inhibitors, are effective in moderate to severe cases, while emerging options such as neurosteroid therapy show promising results.[51,54] Preventive strategies centred on social support, lifestyle changes, and managing antenatal risk factors are crucial in lowering the incidence and severity of postpartum depression.[44,47]

From a public health perspective, the findings highlight the importance of integrating mental health services into maternal and primary healthcare systems. Enhancing screening programs, increasing access to mental health care, and combating stigma related to postpartum depression are essential steps for better maternal and child health outcomes. In resource-limited settings, community-based interventions and culturally suitable care models can be especially effective.

Research gaps and future directions

Despite the growing body of evidence, several gaps remain in the literature. There is a need for more longitudinal studies to understand the long-term course and outcomes of postpartum depression. Limited evidence is available from low-resource settings, especially regarding the implementation of screening programs and the effectiveness of interventions. Additionally, further research is necessary to explore biological mechanisms, including neuroinflammatory pathways and hormonal sensitivity, to develop targeted therapeutic approaches. Future studies should also focus on culturally tailored interventions and the integration of mental health services into routine maternal care.

Strengths

This scoping review provides a comprehensive overview of postpartum depression by synthesizing evidence across multiple domains, including epidemiology, determinants, pathophysiology, and management. The use of a structured scoping review approach enabled broad mapping of available literature and identification of key themes.

Limitations

However, certain limitations should be considered. The review included only studies published in English, which may limit generalizability. Formal quality appraisal of included studies was not performed, consistent with scoping review methodology. Additionally, variability in study designs and diagnostic criteria may have influenced the interpretation of findings.

CONCLUSION

Postpartum depression is a major maternal mental health issue with global impact and varying prevalence. This review shows it is multifactorial, influenced by biological, psychological, and social factors. Key contributors include antenatal depression, social stressors, lack of support, and obstetric issues, with neuroendocrine changes and inflammation underlying its biology. Early screening and

assessment are essential. Preventive measures like social support, addressing risk factors, and psychological interventions are key. Management should be personalized and multidisciplinary, combining therapy, medication, and support, with new treatments showing promise. Public health must integrate mental health into maternal care for early detection and treatment, especially in low- and middle-income countries with higher burdens and limited services. Overall, a comprehensive, context-specific approach for improved screening, awareness, stigma reduction, and evidence-based care is crucial to enhance maternal mental health and outcomes for mothers, infants, and families.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. World Health Organization. Postpartum depression: an overview of treatment and prevention. 2011. Available at: https://www.gfmer.ch /SRH-Course-2011/maternal-health/Postpartum-depression-Corey-2011.htm. Accessed on 10 February 2026.
2. Vahia VN. Diagnostic and statistical manual of mental disorders 5: a quick glance. Indian J Psychiatry. 2013;55(3):220-3.
3. World Health Organization. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. 1992. Available at: https://www.who.int/publications/i/item/9241544228. Accessed on 10 February 2026.
4. Liu X, Wang S, Wang G. Prevalence and risk factors of postpartum depression in women: a systematic review and meta-analysis. J Clin Nurs. 2022;31(17–18):2665-77.
5. Shelke A, Chakole S. Risk factors of postpartum depression in India and its management: a review. Cureus. 2022;14(9):e29115.
6. Amer SA, Zaitoun NA, Abdelsalam HA, Almasry SM, Elbanna TA, Abdellatif MM, et al. Exploring predictors and prevalence of postpartum depression among mothers: a multinational study. BMC Public Health. 2024;24(1):1308.
7. Khamidullina Z, Marat A, Muratbekova S, Mustapayeva NM, Chingayeva GN, Shepetov AM, et al. Postpartum depression epidemiology, risk factors, diagnosis, and management: an appraisal of the current knowledge and future perspectives. J Clin Med. 2025;14(7):2418.
8. Panolan S. Prevalence and associated risk factors of postpartum depression in India: a comprehensive review. J Neurosci Rural Pract. 2024;15(1):1-7.
9. George M, Johnson AR, Sulekha T. Incidence of postpartum depression and its association with antenatal psychiatric symptoms: a longitudinal study. Indian J Psychol Med. 2022;44(1):37-44.
10. Maharajan S, Ramkumar DS, Amthul N. Prevalence of postpartum depression among postnatal women using EPDS. Int J Res Pharm Sci. 2021;12(3):2395-9.
11. Jija D. Factors associated with postnatal depression among primi mothers. Indian J Psychiatr Nurs. 2019;16(2):67-71.
12. Vilarim M, Rebelo F, Vieira I, Silva AA, Leite IC, Theme Filha MM, et al. Prevalence of postpartum depression symptoms during COVID-19 pandemic: a systematic review and meta-analysis. Braz J Psychiatry. 2024;46(4):1-10.
13. Slomian J, Honvo G, Emonts P, Reginster JY, Bruyère O. Consequences of maternal postpartum depression: a systematic review. Womens Health (Lond). 2019;15:1745506519844044.
14. Vliegen N, Casalin S, Luyten P. The course of postpartum depression: a review. Harv Rev Psychiatry. 2016;22(1):1-22.
15. Wang Z, Liu J, Shuai H, Cai Z, Fu X, Liu Y, et al. Mapping global prevalence of depression among postpartum women. Transl Psychiatry. 2021;11(1):543.
16. Fisher J, de Mello MC, Patel V, Rahman A, Tran T, Holton S, et al. Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries. Bull World Health Organ. 2012;90(2):139-49.
17. Galletta MA, Hashimoto AS, de Almeida Estrambk G, Verardo IP, Cantagalli MH, Peres SV, et al. Prevalence of postpartum depression in the COVID-19 pandemic and associated factors: systematic review and meta-analysis. BMC Pregnancy and Childbirth. 2026.
18. Forty L, Jones L, Macgregor S, Caesar S, Cooper C, Hough A, et al. Familiality of postpartum depression in unipolar disorder. Am J Psychiatry. 2006;163(9):1549-53.
19. Murphy-Eberenz K, Zandi PP, March D, Crowe RR, Scheftner WA, Coryell W, et al. Is perinatal depression familial? J Affect Disord. 2006;90(1):49-55.
20. Guintivano J, Sullivan PF, Stuebe AM, Penders T, Thorp J, Rubinow DR, et al. Adverse life events and predictors of postpartum depression. Psychol Med. 2018;48(7):1190-200.
21. Hutchens BF, Kearney J. Risk factors for postpartum depression: an umbrella review. J Midwifery Womens Health. 2020;65(1):96-108.
22. Lara-Cinisomo S, Wood J, Fujimoto EM. Cultural orientation and perinatal depression in Latina women. Arch Womens Ment Health. 2019;22(5):557-67.
23. Glynn LM, Davis EP, Sandman CA. New insights into the role of perinatal HPA-axis dysregulation in postpartum depression. Neuropeptides. 2013;47(6):363-70.
24. Licheri V, Talani G, Gorule AA, Biggio F, Sanna E, Biggio G. Plasticity of GABAA receptors during pregnancy and the postpartum period. Neural Plast. 2015;2015:1-12.

25. Carlson K, Mughal S, Azhar Y, Siddiqui W. Postpartum depression. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2024.
26. Zhao XH, Zhang ZH. Risk factors for postpartum depression: an evidence-based review of systematic reviews. Asian J Psychiatr. 2020;53:102353.
27. Azami M, Badfar G, Khalighi Z, Abbasalizadeh F, Hasani M, Talebi M, et al. Association between anemia and postpartum depression: a systematic review and meta-analysis. Caspian J Intern Med. 2019;10(2):115-24.
28. Arafa A, Dong JY. Gestational diabetes and risk of postpartum depressive symptoms: a meta-analysis. J Affect Disord. 2019;253:312-6.
29. Steinig J, Nagl M, Linde K, Zietlow AL, Kersting A, Wagner B, et al. Antenatal and postnatal depression in women with obesity: a systematic review. Arch Womens Ment Health. 2017;20(4):569-85.
30. Ghaedrahmati M, Kazemi A, Kheirabadi G, Ebrahimi A, Bahrami M. Postpartum depression risk factors: a narrative review. J Educ Health Promot. 2017;6:60.
31. Meltzer-Brody S, Kanes SJ. Allopregnanolone in postpartum depression. Neurobiol Stress. 2020;12:100213.
32. Douma SL, Husband C, O'Donnell ME, Barwin BN, Woodend AK. Estrogen-related mood disorders. ANS Adv Nurs Sci. 2005;28(4):364-75.
33. Nandam LS, Brazel M, Zhou M, Jhaveri DJ. Cortisol and major depressive disorder. Front Psychiatry. 2020;10:974.
34. Dunkel Schetter C. Psychological science on pregnancy. Annu Rev Psychol. 2011;62:531-58.
35. Helpman L. Stress, sex, and gender in mental disorders. Neurosci Biobehav Rev. 2023;150:105190.
36. Hahn-Holbrook J, Haselton M. Is postpartum depression a disease of modern civilization? Curr Dir Psychol Sci. 2014;23(6):395-400.
37. Liu H, Zhang Y, Gao Y, Zhang Z. Inflammatory markers and postpartum depression. Psychiatry Res. 2016;243:43-8.
38. Scottish Intercollegiate Guidelines Network. Management of perinatal mood disorders. Edinburgh: SIGN. 2012. Available at: https://www.sign.ac.uk/assets/sign127_update.pdf. Accessed on 10 February 2026.
39. Suryawanshi IV, Pajai S. A comprehensive review on postpartum depression. Cureus. 2022;14(12):e32855.
40. Kendall-Tackett KA. Screening for Perinatal Depression: Barriers, Guidelines, and Measurement Scales. J Clin Med. 2024;13(21):6511.
41. Magalhães PV, Pinheiro RT, Horta BL, Tomasi E, Amaral OB, Da Silva RA. Validity of the Beck Depression Inventory postpartum. Int J Psychiatry Clin Pract. 2008;12(1):81-4.
42. Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry. 1960;23:56-62.
43. Sidebottom AC, Harrison PA, Godecker A, Kim H. PHQ-9 validation for prenatal depression. Arch Womens Ment Health. 2012;15(5):367-74.
44. Wisner KL, Parry BL, Piontek CM. Clinical practice. Postpartum depression. N Engl J Med. 2002;347(3):194-9.
45. Bayrampour H, Kapoor A, Bunka M, Ryan D. Risk of relapse after antidepressant discontinuation. J Clin Psychiatry. 2020;81(4):13134.
46. Li S, Zhou W, Li P, Lin R. Ketamine for preventing postpartum depression. J Affect Disord. 2024;351:720-8.
47. Dominiak M, Antosik-Wojcinska AZ, Baron M, Włodarczyk A, Ferensztajn-Rochowiak E, Rybakowski JK. Prevention and treatment of postpartum depression. Ginekol Pol. 2021;92(2):153-64.
48. Wang X, Qiu Q, Shen Z, Huang X, Zhang Y, Liu L, et al. Interpersonal psychotherapy for postpartum depression. J Affect Disord. 2023;339:823-31.
49. Roman M, Constantin T, Bostan CM. Online CBT for postpartum depression. Women Health. 2020;60(1):99-112.
50. Rönnqvist I, Brus O, Hammar Å, Landén M, Lundberg J, Nordenskjöld A, et al. ECT in postpartum depression. J ECT. 2019;35(4):264-71.
51. Bashiri H, Houwing DJ, Homberg JR, Salari AA. Fluoxetine and postpartum stress. Sci Rep. 2021;11(1):8518.
52. Thour A, Marwaha R. Amitriptyline. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2023.
53. Sharma R, Bansal P, Saini L, Gupta R, Kaur H, Arora S. Zuranolone in postpartum depression. Pharmacol Biochem Behav. 2024;238:173734.
54. Thomson M, Sharma V. Therapeutics of postpartum depression. Expert Rev Neurother. 2017;17(5):495-507.
55. Ronnqvist I, Brus O, Hammar A, Landen M, Lundberg J, Nordenskjold A, et al. ECT in postpartum depression. J ECT. 2019;35(4):264-71.
56. Vliegen N, Casalin S, Luyten P. Course of postpartum depression. Harv Rev Psychiatr. 2016;22(1):1-22.

Cite this article as: John G, Lofi P. Postpartum depression: a scoping review of epidemiology, determinants, pathophysiological mechanisms, and management. Int J Sci Rep 2026;12(6):246-55.