International Journal of Innovative Research in Medical Science (IJIRMS)
Volume 09, Issue 11, November 2024,
https://doi.org/10.23958/ijirms/vol09-i11/2004

Review Article

Key Risk Factors Contributing to Postpartum Depression: Literature Review

Mohammed Elmuttalut [1,2], Mohammed Salah Alfahal *[3]

[1]Department of Community Medicine, Al Rayan National College of Medicine, Al Rayan National Colleges, Madinah, Kingdom of Saudi Arabia.
[2]Department of Community Medicine, College of Medicine, University of Sinnar, Sudan.
[3]Assistant professor of psychiatry, Department of Psychiatry, Al Rayan National College of Medicine, Al Rayan National Colleges, Madinah, Kingdom of Saudi Arabia.

*Corresponding author: Dr. Mohammed Salah Alfahal; *Mohammedalfahal249@gmail.com*

Received 11 October 2024; Accepted 16 November 2024; Published 20 November 2024

Abstract

Postpartum depression (PPD) is prevalent and debilitating mood disorder that affects women during the postpartum period and severely impact maternal-infant bonding, child development, and family dynamics. This review aimed to provide a comprehensive analysis of the key risk factors contributing to the onset of Postpartum depression. The review investigated the latest research findings on risk factors leading to postpartum depression to inform clinical practice and public health strategies, ultimately enhancing prevention, early detection, and intervention. To reduce the burden of Postpartum depression and improve outcomes for mothers, children and families, this review highlighted the need for addressing these diverse factors through integrated, culturally sensitive, and multidisciplinary approaches. Additional research endeavors are needed to delve deeper into the comprehensive spectrum of causes, progression, outcomes of postpartum depression, mitigation of its effects, and the development of effective strategies to preclude its onset.

Keywords: ***Postpartum depression, risk factors, hormonal changes, psychological factors, cultural influences and social support.***

1. Introduction

Maternal mental health problems are recognized globally as a significant public health concern, with approximately 13% of women who have recently given birth experiencing a mental health disorder, predominantly depression (WHO, 2019). A recent meta-analysis found that nearly 20% of mothers in developing countries suffer from clinical depression following childbirth (Fisher et al., 2012). Postpartum depression (PPD) is a prevalent, complex, and multifaceted condition that significantly impacts the mental health of women during the postpartum period (Suryawanshi, et al, 2022). It is characterized by depressive symptoms that can range from mild to severe, potentially affecting mother-infant bonding, child development, and overall family dynamics (Silverman et al., 2017). The etiology of Postpartum depression is not fully understood, but it is widely recognized as being influenced by a combination of biological, psychological, social, and cultural factors (WHO, 2020., CDC, 2021, Suryawanshi, et al, 2022).

Unlike the transient "baby blues," which typically resolve within a few days to weeks, postpartum depression (PPD) persists for a longer duration, often beginning 1-3 weeks postpartum and potentially lasting up to a year (APA, DSM-V 2013). PPD is characterized by more severe and prolonged symptoms, necessitating medical intervention when symptoms are recognized (O'Hara & McCabe, 2013).

This review probed recent research findings to provide a comprehensive examination of the key risk factors contributing to Postpartum depression. Understanding these risk factors is critical to developing effective prevention and intervention strategies that support maternal mental health, mitigate the adverse outcomes of Postpartum depression, and promote healthier family outcomes. Comprehensive understanding and identification of these risk factors are crucial for developing effective prevention and intervention strategies to support maternal mental health and mitigate the adverse outcomes associated with Postpartum depression (Kawashima, A., et al., 2022, WHO, 2020., CDC, 2021, Dennis et al., 2019).

2. Postpartum Depression Risk Factors

2.1 Biological Risk Factors

1. *Hormonal Fluctuations:* The postpartum period is characterized by significant hormonal changes, particularly the rapid decline in estrogen and progesterone levels (Trifu, S., et al 2019). These hormonal shifts can impact neurotransmitter systems involved in mood regulation, potentially triggering depressive symptoms (Meltzer-Brody et al., 2017). Both WHO and CDC emphasize the

importance of monitoring hormonal changes and their effects on maternal mental health (WHO, 2020; CDC, 2021).

2. *Genetic Predisposition:* Genetic factors play a crucial role in the development of PPD (Couto, T. et al., 2015). Variations in genes related to serotonergic and dopaminergic systems have been linked to increased susceptibility to PPD (Couto, T. et al., 2015, Guintivano et al., 2014). Additionally, epigenetic changes such as DNA methylation have been associated with PPD risk (Payne et al., 2019). Several studies advocate for genetic screening and personalized interventions early on in pregnancy to mitigate this risk (Mehta, D., et al. 2021).

3. *Medical Complications During Pregnancy and Childbirth:* Complications such as pre-eclampsia, gestational diabetes, and emergency cesarean sections are associated with a higher risk of PPD (Xu et al., 2017). These complications can prolong recovery, increase physical discomfort, and heighten stress, contributing to PPD development (Mukherjee et al., 2017). Comprehensive postpartum care is recommended to address these issues (WHO, 2020).

4. *Breastfeeding Difficulties:* Breastfeeding problems, including issues with latch, pain, and insufficient milk supply, have been linked to PPD. Breastfeeding difficulties can cause significant stress and feelings of inadequacy, contributing to depressive symptoms (Dias & Figueiredo, 2015). Brown et al. (2016) found that women who experience severe breastfeeding problems are more likely to develop PPD compared to those who do not encounter such difficulties.

2.2 Psychological Risk Factors

1. History of Depression or Anxiety: A previous history of depression or anxiety is a strong predictor of PPD (Lancaster, C. A., et al 2010). Women with prior episodes of these conditions are at significantly higher risk of developing PPD (Silverman et al., 2017). Proactive mental health monitoring and intervention are essential for these individuals (Yim et al., 2015). The CDC recommends early screening and ongoing support for women with a history of mental health issues (CDC, 2021).

2. Emotional Factors: Unplanned or unwanted pregnancies can significantly impact emotional well-being, increasing the risk of PPD (Suryawanshi, et al, 2022). Negative emotions related to pregnancy can affect a woman's feelings towards her fetus, contributing to depressive symptoms (Ding et al., 2014). Emotional support and counseling during and after pregnancy are crucial (WHO, 2020, Corrigan, C. P., et al. 2015).

3. Fatigue and Sleep Deprivation: Many women experience significant fatigue after childbirth, which can exacerbate stress and emotional strain, increasing the risk of PPD (Kawashima, A., et al., 2022, Dennis et al., 2019). Sleep deprivation, common during the postpartum period, also impairs mood regulation and cognitive function, further contributing to PPD (Kawashima, A., et al., 2022). Adequate rest and support for nighttime caregiving are essential preventive measures (Kawashima, A., et al., 2022, WHO, 2020; CDC, 2021).

2.3 Social Risk Factors

1. Lack of Social Support: Inadequate social support from partners, family, and friends is a critical risk factor for PPD (White, L. K., et al 2023, Cho, H., et al. 2022). Women with insufficient social support are more likely to experience depressive symptoms (Zyrek, J., et al. 2024, Leahy-Warren et al., 2012). WHO and CDC guidelines highlight the importance of strong social support networks in mitigating the risk of PPD and recommend community-based support systems (WHO, 2020; CDC, 2021).

2. Socioeconomic Status: Socioeconomic factors, including low income, unemployment, and limited education, significantly influence the risk of PPD (Hahn-Holbrook, J., et al., 2018). Women with lower socioeconomic status often face additional stressors, such as financial strain and limited access to healthcare, which increase their vulnerability to PPD (Fisher et al., 2012). Addressing socioeconomic disparities is crucial for reducing the incidence of PPD (Slomian et al., 2019).

3. Stressful Life Events: Stressful life events, such as the recent death of a loved one, family illness, can significantly increase the risk of PPD (Netsi, E., et al., 2018, Soumyadeep et al, 2017). These events add to the emotional and psychological burden during the postpartum period (Guardino & Schetter, 2014). Providing adequate support and resources to manage stress is essential (WHO, 2020).

2.4 Lifestyle Risk Factors

1. Physical Inactivity: Physical inactivity is a modifiable risk factor for PPD. Regular physical activity has been shown to have antidepressant effects by improving mood, reducing anxiety, and enhancing overall well-being (Poyatos-León et al., 2017). Promoting exercise during the postpartum period is recommended to reduce the risk of PPD (Ozkan, S. A., et al., 2020).

2.5 Cultural Risk Factors

1. Cultural Attitudes and Stigma: Cultural attitudes towards mental health and stigma can significantly influence the prevalence and reporting of PPD (Ying Hu et al., 2023). In cultures where mental health issues are stigmatized, women may be reluctant to seek help, leading to underreporting and untreated PPD (Fisher et al., 2012). Health organizations advocate for culturally sensitive approaches to encourage help-seeking behaviors (WHO, 2020).

2. Acculturation Stress: Immigrant women often face acculturation stress, including challenges such as language barriers, social isolation, and adapting to new cultural norms. These stressors can increase the risk of PPD (Chen et al., 2019, Ying Hu et al., 2023). Targeted support and resources for immigrant women are essential to mitigate this risk (WHO, 2020).

3. Prevention of Postpartum Depression

Preventing postpartum depression (PPD) requires a comprehensive approach that addresses the multifaceted biological, psychological, social, and cultural risk factors identified in this review. The following preventive measures and practical applications outline strategies for healthcare providers to enhance early identification, intervention, and support for at-risk individuals.

3.1 Specific Preventive Measures

1. Routine Screening in Prenatal Care

Implementing systematic screening protocols during prenatal visits enables early identification of women at elevated risk for PPD, especially those with previous mental health conditions. Standardized tools, such as the Edinburgh Postnatal Depression Scale (EPDS) or Patient Health Questionnaire-9 (PHQ-9), facilitate timely assessment, allowing healthcare providers to initiate preventive interventions as needed (Centers for Disease Control and Prevention [CDC], 2021; O'Hara & McCabe, 2013).

2. Culturally Sensitive Support Programs
Cultural attitudes and stigma regarding mental health can act as barriers to seeking care. Developing culturally tailored support programs that respect local beliefs and practices can promote help-seeking behaviors among women in diverse communities. Anonymous support or community-based mental health services may offer a viable solution in settings with significant stigma (Ying Hu et al., 2023; Fisher et al., 2012).

3. Enhanced Postpartum Support Services
Providing structured postpartum support through counseling, peer support groups and home visits by healthcare professionals is particularly beneficial for women facing social isolation or other life stressors. Collaboration with community organizations can expand the reach of these resources, thereby reducing the emotional burden associated with PPD (Cho et al., 2022; Leahy-Warren, McCarthy, & Corcoran, 2012).

4. Educational Programs for Expectant Parents
Educational interventions for expectant mothers and their families on recognizing PPD symptoms and seeking help create a supportive environment. Involving family members in educational programs may foster proactive support and reduce psychological stressors that contribute to PPD onset (Dennis, Brown, & Brown, 2019; Guardino & Schetter, 2014).

5. Lifestyle Modifications
Encouraging regular physical activity, balanced nutrition, and adequate rest during pregnancy and the postpartum period may have protective effects against PPD. Healthcare providers can advise mothers on safe exercise routines, healthy sleep practices, and dietary habits that support mental and physical health (Poyatos-León et al., 2017; Ozkan, Kucukkelepce, & Korkmaz, 2020).

3.2 Practical Applications in Clinical Practice

1. Individualized Support for High-Risk Women
Healthcare providers can use screening outcomes to develop personalized care plans for high-risk women, including increased follow-up visits and mental health referrals. Engaging family members in the care process can further strengthen the support network for these individuals (Lancaster et al., 2010; Yim et al., 2015).

2. Integrated Care Models
Collaboration among obstetricians, midwives, and mental health professionals enables a coordinated, continuous support system for at-risk mothers, from prenatal care through the postpartum period. Integrated care models improve continuity and accessibility, enhancing the effectiveness of mental health interventions (World Health Organization [WHO], 2020; Silverman et al., 2017).

3. Family-Inclusive Support Systems
Involving family members in maternal mental health support is critical for the early detection of PPD symptoms. Clinics can offer family counseling sessions to strengthen the family's role in maternal care, promoting both emotional and practical support (Leahy-Warren et al., 2012; Corrigan, Kwasky, & Groh, 2015).

4. Community Outreach and Awareness Initiatives
To reduce stigma and increase awareness, healthcare systems can partner with community leaders and non-profit organizations to deliver educational campaigns and outreach programs. These initiatives promote public understanding of PPD and expand access to support resources (White et al., 2023; Fisher et al., 2012).

5. Continuous Provider Training
Ongoing training for healthcare providers on PPD risk factors, screening methods, and culturally sensitive care enhances their capacity to detect and respond to early signs of PPD. This training empowers providers to engage empathetically and recognize the nuanced needs of diverse patient populations (WHO, 2020; Suryawanshi & Pajai, 2022).

By implementing these preventive measures and clinical applications, healthcare systems can facilitate early detection, provide timely intervention, and mitigate the impact of PPD on mothers, children, and families.

4. Conclusion and Recommendations

Postpartum depression is a complex mood disorder influenced by a range of biological, psychological, social, environmental, lifestyle, and cultural factors. Recognizing and addressing these risk factors, as outlined by WHO and CDC guidelines, is essential for developing effective prevention and intervention strategies to support the mental health of mothers. To mitigate its impact, early screening and personalized care plans should be implemented, particularly for women with a history of mental health issues. Enhancing social support networks, addressing socioeconomic barriers, and promoting physical activity are crucial. Culturally sensitive interventions and public awareness campaigns can reduce stigma and encourage help-seeking behaviors. An interdisciplinary approach involving healthcare professionals and continuous research are essential for developing effective prevention and treatment strategies, ultimately improving outcomes for mothers and their children.

List of Abbreviations

PPD: Postpartum Depression

WHO: World Health Organization

CDC: Centers for Disease Control and Prevention

DSM-V: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition

Declarations

Ethics Approval and Consent to Participate

Not applicable.

Data Availability

No new data were created or analyzed in this study. Data sharing is therefore not applicable to this article review.

Conflicts of Interest

The authors declare no conflicts of interest.

Funding Statement

This article review did not receive any specific funding from public, commercial, or not-for-profit funding agencies.

Authors' Contributions

Mohammed Elmuttalut: Conceptualized and designed the review, led the literature search and analysis, drafted the manuscript, and approved the final version for submission.

Mohammed Salah Alfahal: Contributed to the literature analysis, critically reviewed the manuscript for intellectual content, and approved the final version.

Both authors have read and approved the final manuscript version and are accountable for all aspects of the work.

References

[1] Zyrek, J., Klimek, M., Apanasewicz, A. et al. (2024). Social support during pregnancy and the risk of postpartum depression in Polish women: A prospective study. Sci Rep 14, 6906. https://doi.org/10.1038/s41598-024-57477-1

[2] White, L. K., Kornfield, S. L., Himes, et al (2023). The impact of postpartum social support on postpartum mental health outcomes during the COVID-19 pandemic. Archives of women's mental health, 26(4), 531-541. https://doi.org/10.1007/s00737-023-01330-3

[3] Ying Hu, Sasa Huang, Meili Xiao, et al (2023). Barriers and facilitators of psychological help-seeking behaviors for perinatal women with depressive symptoms: A qualitative systematic review based on the Consolidated Framework for Implementation Research, Midwifery, Volume 122, 2023, 103686, ISSN 0266-6138, https://doi.org/10.1016/j.midw.2023.103686

[4] Kawashima, A., Detsuka, N., & Yano, R. (2022). Sleep deprivation and fatigue in early postpartum and their association with postpartum depression in primiparas intending to establish breastfeeding. Journal of rural medicine: JRM, 17(1), 40-49. https://doi.org/10.2185/jrm.2021-027

[5] Cho, H., Lee, K., Choi, E. et al. (2022). Association between social support and postpartum depression. Sci Rep 12, 3128. https://doi.org/10.1038/s41598-022-07248-7

[6] Suryawanshi, O., & Pajai, S. (2022). A Comprehensive Review on Postpartum Depression. Cureus, 14(12), e32745. https://doi.org/10.7759/cureus.32745

[7] Centers for Disease Control and Prevention. (2021). Depression among women. Retrieved from https://www.cdc.gov/reproductivehealth/depression/index.htm

[8] Mehta, D., Grewen, K., Pearson, B. et al. (2021). Genome-wide gene expression changes in postpartum depression point towards an altered immune landscape. Transl Psychiatry 11, 155. https://doi.org/10.1038/s41398-021-01270-5

[9] Ozkan, S. A., Kucukkelepce, D. S., Korkmaz, et al (2020). The effectiveness of an exercise intervention in reducing the severity of postpartum depression: A randomized controlled trial. Perspectives in psychiatric care, 56(4), 844-850. https://doi.org/10.1111/ppc.12500

[10] Dennis, C. L., Brown, J. V. E., & Brown, H. K. (2019). Interventions (other than psychosocial, psychological and pharmacological) for treating postpartum depression. The Cochrane Database of Systematic Reviews, 2019(11), CD013460. https://doi.org/10.1002/14651858.CD013460

[11] Trifu, S., Vladuti, A., & Popescu, A. (2019). The Neuroendocrinological Aspects of Pregnancy and Postpartum Depression. Acta endocrinologica (Bucharest, Romania: 2005), 15(3), 410-415. https://doi.org/10.4183/aeb.2019.410

[12] Chen, J., Cross, W. M., Plummer, et al, (2019). A systematic review of prevalence and risk factors of postpartum depression in Chinese immigrant women. Women and Birth, 32(6), 487-492. https://doi.org/10.1016/j.wombi.2018.11.019

[13] Slomian, J., Honvo, G., Emonts, P., et al, (2019). Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. Women's Health, 15, 1745506519844044.

[14] Netsi, E., Pearson, R. M., Murray, L., et al, (2018). Association of Persistent and Severe Postnatal Depression with Child Outcomes. JAMA psychiatry, 75(3), 247-253. https://doi.org/10.1001/jamapsychiatry.2017.4363

[15] Hahn-Holbrook, J., Cornwell-Hinrichs, T., & Anaya, I. (2018). Economic and Health Predictors of National Postpartum Depression Prevalence: A Systematic Review, Meta-analysis, and Meta-Regression of 291 Studies from 56 Countries. Frontiers in psychiatry, 8, 248. https://doi.org/10.3389/fpsyt.2017.00248

[16] Meltzer-Brody, S., Maegbaek, M. L., Medland, et al (2017). Obstetrical, pregnancy and socio-economic predictors for new-onset severe postpartum psychiatric disorders in primiparous women. Psychological medicine, 47(8), 1427-1441. https://doi.org/10.1017/S0033291716003020

[17] Poyatos-León, R., García-Hermoso, A., Sanabria-Martínez, et al, (2017). Effects of exercise-based interventions on postpartum depression: a meta-analysis of randomized controlled trials. Birth, 44(3), 200-208.

[18] Silverman, M. E., Reichenberg, A., Savitz, D. A., et al, (2017). The risk factors for postpartum depression: A population-based study. Depression and anxiety, 34(2), 178-187.

[19] Xu, H., Ding, Y., Ma, Y., Xin, X., & Zhang, D. (2017). Cesarean section and risk of postpartum depression: A meta-analysis. Journal of psychosomatic research, 97, 118-126.

[20] Soumyadeep Mukherjee, Stefany Coxe, Kristopher Fennie, et al, (2017). Antenatal Stressful Life Events and Postpartum Depressive Symptoms in the United States: The Role of Women's Socioeconomic Status Indices at the State Level. Journal of Women's Health Vol. 26, No. 3. https://doi.org/10.1089/jwh.2016.5872

[21] Brown, A., Rance, J., & Bennett, P. (2016). Understanding the relationship between breastfeeding and postnatal depression: the role of pain and physical difficulties. Journal of advanced nursing, 72(2), 273-282. https://doi.org/10.1111/jan.12832

[22] Dias, C. C., & Figueiredo, B. (2015). Breastfeeding and depression: a systematic review of the literature. Journal of affective disorders, 171, 142-154. https://doi.org/10.1016/j.jad.2014.09.022

[23] Ding, X. X., Wu, Y. L., Xu, S. J., et al (2014). Maternal anxiety during pregnancy and adverse birth outcomes: a systematic review and meta-analysis of prospective cohort studies. Journal of affective disorders, 159, 103-110. https://doi.org/10.1016/j.jad.2014.02.027

[24] Fisher, J., Cabral de Mello, M., Patel, et al (2012). Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. Bulletin of the World Health Organization, 90(2), 139G-149G. https://doi.org/10.2471/BLT.11.091850

[25] Guardino, C. M., & Schetter, C. D. (2014). Coping during pregnancy: a systematic review and recommendations. Health psychology review, 8(1), 70-94. https://doi.org/10.1080/17437199.2012.752659

[26] Guintivano, J., Arad, M., Gould, T. D., et al, (2014). Antenatal prediction of postpartum depression with blood DNA methylation biomarkers. Molecular psychiatry, 19(5), 560-567. https://doi.org/10.1038/mp.2013.62

[27] Leahy-Warren, P., McCarthy, G., & Corcoran, P. (2012). First-time mothers: social support, maternal parental self-efficacy and postnatal depression. Journal of clinical nursing, 21(3-4), 388-397. https://doi.org/10.1111/j.1365-2702.2011.03701.x

[28] Yim, I. S., Tanner Stapleton, L. R., Guardino, et al, (2015). Biological and psychosocial predictors of postpartum depression: systematic review and call for integration. Annual review of clinical psychology, 11(1), 99-137.

[29] Couto, T. C., Brancaglion, M. Y., Alvim-Soares, et al (2015). Postpartum depression: A systematic review of the genetics involved. World journal of psychiatry, 5(1), 103-111. https://doi.org/10.5498/wjp.v5.i1.103

[30] Lancaster, C. A., Gold, K. J., Flynn, H. A., et al, (2010). Risk factors for depressive symptoms during pregnancy: a systematic review. American journal of obstetrics and gynecology, 202(1), 5-14. https://doi.org/10.1016/j.ajog.2009.09.007

[31] Corrigan, C. P., Kwasky, A. N., & Groh, C. J. (2015). Social Support, Postpartum Depression, and Professional Assistance: A Survey of Mothers in the Midwestern United States. The Journal of perinatal education, 24(1), 48-60. https://doi.org/10.1891/1058-1243.24.1.48

[32] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th, ed. American Psychiatric Publishing, 2013. DSM-V

[33] Fisher, J., Cabral de Mello, M., Patel, V., Rahman, A., Tran, T., Holton, S., & Holmes, W. (2012). Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: A systematic review. Bulletin of the World Health Organization, 90(2), 139G-149G. https://doi.org/10.2471/BLT.11.091850

[34] O'Hara MW, McCabe JE. Postpartum depression: current status and future directions. Annu Rev Clin Psychol. 2013; 9:379-407. DOI: 10.1146/annurev-clinpsy-050212-185612 Epub 2013 Feb 1. PMID: 23394227.

[35] World Health Organization. (2019). Maternal mental health. https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/maternal-mental-health