



# Postpartum Depression—Identifying Risk and Access to Intervention

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## Abstract

**Purpose of Review** As maternal mortality climbs in the USA with mental health conditions driving these preventable deaths, the field of reproductive psychiatry must shift towards identification of women and other birthing individuals at risk and facilitating access. This review brings together recent studies regarding risk of perinatal depression and highlights important comorbidities that place individuals at higher vulnerability to poor perinatal outcomes.

**Recent Findings** Recent research suggests that identifying risk for perinatal depression including historical diagnoses of depression, anxiety, trauma, and comorbid substance use and intimate partner violence may move the field to focus on preventive care in peripartum populations. Emerging data shows stark health inequities in racial and ethnic minority populations historically marginalized by the health system and in other vulnerable groups such as LGBTQ+ individuals and those with severe mental illness.

**Summary** Innovative models of care using systems-level approaches can provide opportunities for identification and risk analyses of vulnerable peripartum patients and facilitate access to therapeutic or preventive interventions. Utilizing inter-generational approaches and leveraging multidisciplinary teams that thoughtfully target high-risk women and other birthing individuals could promote significant changes to population-level care in maternal health.

**Keywords** Perinatal psychiatry · Reproductive psychiatry · Postpartum depression · Perinatal depression · Risk · Health care access · Preventive care · Health equity

## Introduction

The SARS-CoV-2 (COVID-19) pandemic has brought about an increase in maternal mortality rates compared to pre-pandemic rates [1]. Compared to 2019, rates among high-risk individuals

increased sharply, with mortality rates in Black women in 2020 increasing from 44.0 to 55.3 per 100,000 live births, approximately 3 times that of other population groups. As the Center for Disease Control [2] deems two-thirds of these deaths to be preventable, health care systems, individual physicians, and other providers are uniquely positioned to improve outcomes for mothers and other birthing individuals [1].

Postpartum depression was extremely common before the COVID-19 pandemic and according to the CDC has since worsened [3]. Nearly 1 in 7 women experience symptoms that are consistent with major depression [4]. Emerging data suggests a high cost to society due to perinatal mental health conditions, with a 2021 study finding that individuals with mental health disorders have a higher cost per delivery by \$458, a 50% higher rate of severe maternal morbidity, and an overall increased annual hospitalization cost of \$102 million in the USA compared to those without [5].

Health care shortages and gaps in research funding for perinatal mental health conditions have created an environment for suboptimal care for peripartum mental health

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conditions though legislative changes have raised focus to these areas, with 2021 federal funding of a dedicated maternal mental health hotline and with several states expanding Medicaid coverage to a full year postpartum [6].

Researchers in the field are encouraging clinical practices to move towards a more preventive approach to care, identifying risk factors and utilizing data from Maternal Mortality Review Committees (MMRCs) as a guide, these reviews indicate that 68% of pregnancy-related deaths are preventable and most of these are due to mental health conditions [7••].

Understanding screening guidelines, high-risk populations for screening and access, and the role of comorbid peripartum psychiatric conditions such as substance use disorders and trauma-related disorders will allow individual physicians and other providers to identify risk in postpartum syndromes; appreciating systems-level issues related to access and exploring up-to-date innovations in models of care will allow interventions that are preventive and impactful. We provide an overview of these topics related to identifying risk and providing access to intervention in the peripartum period. We use the words perinatal and peripartum interchangeably in this review to mean the time period of pregnancy and up to 1-year postpartum.

### Screening Recommendations from National Organizations

According to the American College of Obstetrics and Gynecology (ACOG), identifying pregnant and postpartum women with depression is critical due to the devastating effects of untreated perinatal depression and other mood disorders on women, infants, and families. Primary care physicians (PCPs) and other providers are encouraged to screen patients for postpartum depression at least once during the peripartum period. This recommendation also extends to obstetrician-gynecologists (OB-GYNs), certified nurse midwives, advanced practice providers, and pediatricians [8].

The adverse correlates and consequences of perinatal depression are well established and include increased risk of preterm birth, less positive and more negative parenting behaviors, emotional and behavioral problems among offspring, and higher health care costs. Treating women at risk for perinatal depression may avert the long reach of negative consequences on maternal and child health and well-being [9••]. Despite calls for screening for perinatal depression from organizations such as ACOG and the United States Preventive Services Task Force (USPSTF), perinatal depression screening is done about 40% of the time compared to a 96% screening rate for gestational diabetes with barriers to screening including time constraints, lack of training, lack of knowledge of diagnostic criteria, and lack of systems of care-promoting screening initiatives [6].

Many screening tools have been validated in peripartum individuals and are compared based on their sensitivity, specificity, number of items, scoring, literacy level, and time [10]. The Edinburgh Postnatal Depression Scale (EPDS) is the most widely used instrument to screen postpartum women for major depression. This validated tool is a self-report, 10-item questionnaire that can be completed in less than 5 min. The EPDS was found to have satisfactory sensitivity and specificity and shows improvement in detecting comorbid anxiety in a shorter EPDS-3 scale [11]. For a screening tool to be successful, it must have diagnostic accuracy in the population being screened and ease of administration. Factors impacting feasibility include the number of questions, scoring and ease of interpretation, and reading level required. Because of these factors, the Patient Health Questionnaire (PHQ 9) and PHQ 2 are currently used as reasonable alternatives to the EPDS [12].

While early identification of depression is crucial, and screening for postpartum depression is recommended by the USPSTF, ACOG, and the American Academy of Pediatrics (AAP), inequities exist at the level of screening. One recent retrospective chart review demonstrated that women with Medicaid and women who were African–American, Asian, American–Indian, or mixed race were less likely than White women to be screened for postpartum depression [13].

Screening by itself is insufficient to improve clinical outcomes and must be coupled with appropriate follow-up and treatment when indicated. Patients should receive postpartum depression screening and follow-up care in familiar, trusted environments such as their PCP or obstetric offices. Data suggests variable linkage rates even with screening with numbers ranging from 5–79% engaging in psychiatric care after screening [67, 68]. Randomized controlled trials of screening initiatives combined with collaborative care models show reduction in depression severity, higher rates of adherence to care, higher rates of depression remission, and cost savings [69].

### High-risk Populations and Health Equity

In line with studies in the general population, research addressing maternal morbidity and mortality in the perinatal population shows persistent inequities, and specific high-risk populations emerge as particularly vulnerable. Patients with serious mental illness (SMI) are at high risk of experiencing a peripartum depressive episode or other psychiatric condition. McKee et al. found that pregnancy rates in patients with SMI increased nationally from 2006 to 2015 from 4.2 to 8.1 per 1000 deliveries. Individuals with SMI were more likely to have severe maternal morbidity and mortality, preterm delivery, longer hospitalizations, and higher delivery-related costs; they are also at risk for psychotic episodes at time of their child's birth [15].

Due to factors related to systemic racism and the marginalization by health care systems of communities of color, Black mothers are 2.5 to 4 times more likely to experience death than White mothers [16]. Numerous studies show racial and ethnic disparities in mental health and substance use disorder treatment in the perinatal population [17, 18, 19, 20]. Women of color and low-income individuals are more likely to suffer from postpartum depression and are less likely to receive treatment, and multiple studies have demonstrated higher rates of perinatal depression in women belonging to racial/ethnic minority groups including recent non-English speaking immigrants and those living in poverty [21, 22]. Though women in these groups are at greatest risk for perinatal depression and their children may have the greatest vulnerability to the downstream effects of maternal depression on development, these individuals are the least likely to receive mental health services across levels including in screening. Barriers also exist at the level of access with limited numbers of perinatal mental health practitioners in addition to language and cultural barriers. One recent study including 2539 women from California found that non-Latinx Black individuals have higher rates of prenatal depressive symptoms and significantly lower use of postpartum counseling services and medications than non-Latinx White individuals [23].

Social determinants of health such as lack of access to affordable healthcare compounded by mistrust contribute to a disproportionate number of depressed pregnant people of color. Doulas are non-medical birth assistants who help patients with emotional, physical, and information support. Studies show that doulas who work with Black pregnant people and low-income pregnant people help to mitigate the effects of social determinants of health [14]. This improvement is attributable to the amount of time spent with the patients and the natural skillset often possessed by community doulas which include lived experience, patient advocacy, meeting people in their communities, and a mindset that is not always within the domain of the medical model of care.

Individuals in the LGBTQ+ community are also at risk of health care disparities, which extends to the mental health system [24] and access to reproductive care [27]. A dearth of information regarding LGBTQ+ people's experiences with pregnancy [25] serves as a significant barrier to identification of peripartum depression and engagement in care. A recent systematic review examined unique difficulties experienced by LGBTQ+ persons in the perinatal period and found a positive depression screening in 8.2–24% of participants across 16 studies using validated tools [24].

Gender identity has been cited as a likely source of mental health difficulty and dysphoria during pregnancy, especially in transgender and nonbinary individuals, and poor access to gender-affirming care further raises this risk [24, 26, 27].

Physicians and other providers frequently lack knowledge about LGBTQ+ reproductive care, including mental health care, adding to risks of isolation [24, 28]. Given these inequities, physicians and other providers should work to be inclusive of LGBTQ+ persons by using gender-neutral terminology, using trauma-informed care, screening for postpartum depression frequently, and engaging in training and education regarding LGBTQ+ reproductive care [24].

### **The Role of Trauma, Violence, and Posttraumatic Stress Disorder**

Women of reproductive age are at highest risk of intimate partner violence (IPV) with 25% of women experiencing IPV while pregnant [29]. In some states, assault is among the top causes of maternal deaths in the peripartum period and is included in preventable factors related to maternal mortality [30]. Compared to individuals not exposed to IPV, there is a higher risk of postpartum depression when IPV occurs close to or during pregnancy [31]. ACOG recommends screening all women during obstetric care for IPV due to well documented adverse health outcomes [32].

Prior trauma and maternal adverse childhood events (ACEs) increase the risk and severity of postpartum depression [31–34]. Symptoms of posttraumatic stress disorder (PTSD) can present similarly to symptoms of depression, which poses diagnostic challenges. Moreover, postpartum depression and PTSD are frequently comorbid.

Childbirth has been increasingly recognized as an event that can be potentially traumatic. CDC data shows high rates of maternal morbidity and these preferentially impact communities marginalized by the health care system [2]. Birth trauma can include such obstetrical complications as preeclampsia, delivery under emergent circumstances, fetal distress, a need for vacuum-assisted devices, and C-section delivery when a vaginal delivery was anticipated. Conversely, PTSD from childbirth trauma can occur when no medical complication is present. Childbirth that leads to an admission of the newborn to the neonatal intensive unit (NICU) increases the risk for development of both postpartum PTSD and depression. Unique stressors present in the NICU may contribute to increased depression and anxiety risk including physical separation from baby, stress of medical illness in the baby, and other circumstances leading to challenges in breastfeeding [35]. Screening for childbirth trauma and secondary postpartum PTSD using the City Birth Trauma Scale, a validated screening tool, can help differentiate diagnoses and provide more targeted treatment [36].

Given the high prevalence and health consequences of trauma, universal screening is ideal, and trauma should be considered a critical risk factor for peripartum depression. While more prevention and intervention research is

needed, programs that enhance social support may decrease the risk of postpartum PTSD and depression, especially in women who have experienced ACEs and IPV [37]. Universal trauma-informed care approaches should be utilized with peripartum individuals, which will thereby facilitate identification of these important comorbidities.

### The Role of Substance Use Disorders (SUDs)

Peripartum substance use is associated with negative outcomes including low birthweight, preterm birth, and fetal demise. Despite efforts at universal screening, brief intervention, and referral to treatment for all obstetric patients [38], peripartum substance use remains prevalent and destructive. Between the years 2018 and 2020, one in seven (13.5%) of pregnant adults in the US-reported current alcohol use; those with more frequent mental distress were more likely to consume alcohol [39].

In recent years, substance use has become a leading cause of peripartum death, driven largely by opioid overdoses in the first year following delivery [40, 41]. Postpartum depression commonly begins in the initial weeks following childbirth, coinciding with decreased parental support for physical and mental health. Our experiences match national data showing substance use increases in the months after delivery [42]. The relationship between depression and substance use is often bidirectional. Therefore, we recommend universal screening for both substance use disorders and depression in all people post-childbirth.

Risk factors for SUDs including loneliness and financial concerns have been heightened by the COVID-19 pandemic. A small study of pregnant women reported increases in opioid, cannabis, tobacco, and alcohol use during the pandemic [43]. Many patients in our clinics reported the same, citing stress over the pandemic and loss of in-person support as major factors for use. Access to care has shifted during the pandemic. While some have benefitted from the shift to telehealth, others have experienced multiple challenges. Many lack adequate technology to engage in video telehealth appointments, including not having a device with a camera or being unable to afford a sufficient data plan to support visits. Others have video capability, but are unable to complete appointments privately and confidentially due to lack of childcare availability, or having other family members present in the same space [44].

### Models of Care in Perinatal Mental Health

With high baseline rates of perinatal depression and further increases during the COVID-19 pandemic in communities of color, delivery of perinatal mental health care to individuals in need remains a supreme challenge.

Collaborative care, in which behavioral health treatment is recommended by OB-GYN clinicians and delivered in the OB-GYN clinic at the intensity needed, was shown to increase perinatal depression screening, reduce depression symptoms, increase depression remission, and increase treatment adherence [45]. Perinatal access programs similarly increase frontline obstetric providers' capacity to diagnose and treat perinatal mental health disorders, and do so through trainings, consultation, and provision of resources and referrals. Access programs, of which there are 19 in the USA, continue to advance through use of novel online training, incorporating health equity practices and laying the groundwork for treatment of OUD and bipolar disorder [46].

Already taking hold pre-2020, the efficacy and feasibility of telephone and video-based care for perinatal women has been further established since the onset of the COVID-19 pandemic. While patient visits increased and missed appointments decreased with telehealth services in an integrated obstetric behavioral health program, race and ethnic disparities persist with fewer relative visits of Black perinatal women during the pandemic-associated shift to telehealth [47].

In recent years, researchers have brought to light the concept of “task shifting” or “task sharing” wherein psychological interventions ordinarily delivered by behavioral health specialists can be effectively performed by non-specialists [48]. A common model used in low-income countries, this model has also gained preliminary support in the USA, with midwives, nurses, and peers delivering evidence-based treatments (i.e., cognitive behavioral therapy (CBT), interpersonal psychotherapy, behavioral activation) in primary care settings being the most common and efficacious [48]. Preventive treatment strategies are also now validated by research evidence, with programs such as Mothers and Babies; Reach Out, Stay Strong, Essentials for Mothers of Newborns (ROSE); and Practical Resources for Effective Postpartum Parenting (PREPP) demonstrating some effectiveness in preventing perinatal mental health conditions while leveraging community health structures [6].

Finally, although not a model of care, increasing recognition of and legislative lobbying to expand access to health insurance for longer periods of time post-delivery has become a critical public health effort, with evidence that this policy intervention can potentially decrease behavioral health-related maternal mortality and improve overall perinatal mental health treatment access [49].

### The Move to Dyadic Care—Aborting the Intergenerational Cycle

Early in life, brain development is extensive, with cortical gray matter expansion and myelination of white matter

occurring swiftly over the first 2 years [50]. During this sensitive window, infant development is enormously reliant on the environment, especially interactions and emotional experiences with caregivers; the quality of these early caregiving relationships can have strong buffering effects [51]. The crux of attachment theory is that primary caregivers who are available and responsive to an infant's needs allow a child to develop a sense of security, creating a secure base for a child to explore the world and a safe haven to which the child can return [52]. Research demonstrates that secure attachment is associated with more optimal neurodevelopment, social-emotional competency, and greater resiliency in the child. As attachment is a bidirectional process, secure attachment between a mother and child improves maternal stress and can instill a greater meaning and sense of accomplishment in the caregiver [53].

On the other hand, problematic attachment is associated with a host of negative outcomes to the child including impairments in cognitive performance, poor social-emotional development, and internalizing and externalizing disorders [54]. Mothers with untreated perinatal mood and anxiety disorders, unresolved trauma, and active SUDs are at higher risk for disrupted attachment in caregiving relationships [55–58]. Risk of negative child outcomes is particularly high when depression is severe and persistent, and treating a mother's depression and maintaining remission could mitigate longer term negative effects [59].

Evidence-based interventions such as dyadic psychotherapies focusing on the caregiver-child relationship (e.g., Circle of Security, Parent-Child Interaction Therapy, Child-Parent Psychotherapy, and Trauma-Focused CBT) and home visiting programs such as Attachment and Biobehavioral Catch-Up, have been shown to have positive impacts to attachment and parent-child outcomes [51, 60, 61]. In the identification of peripartum depression, identifying high-risk dyadic relationships and offering targeted approaches to psychotherapy can help to abort intergenerational cycles related to depression, anxiety, and trauma.

### Risk Factor Screening—a Research Gap

A recent multinational study from 138 countries found that younger maternal age, first-time pregnancies, and twin births were risk factors for postpartum depressive symptoms [62]. Risk factors for postpartum syndromes are well known and include family history of peripartum mood and anxiety conditions and maternal pain during pregnancy [63]. Antenatal depression and anxiety remain among the most significant risk factors for postpartum depression, highlighting the need for effective, multi-time point screening [64].

Conversely, resiliency factors have been found to predict lower risk of developing postpartum depression with a New Zealand study finding that positive parenting-related

attitudes, better pre-pregnancy self-reported health, informal social supports, and community belonging associated with greater odds of being low risk for postpartum depression [65].

A 2022 review article investigating predictive modeling in this area found such risk factors as anxiety and depression during pregnancy, psychiatric diagnosis, pregnancy complications, stressful life events, and lifetime antidepressant use as areas to consider in identifying high-risk patients [66]. Advanced technology such as machine learning can be utilized to predict postpartum depression [66]; despite this, screening even for active symptoms lags behind physical health conditions such as gestation diabetes mellitus [6]. Infrastructural changes would be needed to utilize technology initiatives to screen for risk factors. We purport that the field of reproductive psychiatry research should move towards investigating effective and feasible ways of implementing risk factor screening into clinical and systems-based practice.

### Best Practice Recommendations for Screening Interventions

At our institution, we have opted for a systems-level approach to care across a large consolidated academic health care system with over 40 hospitals. Following national guidelines for screening, individuals are screened at multiple time points at their obstetric visits. Bringing departments together, our centralized psychiatric outpatient scheduling department receives referrals for patients who screen positive for perinatal depression and place them in the first available intake appointment with one of six perinatal therapists across geography and programs for a virtual visit. As a result of this collaboration, we have performed over 33,000 postpartum depression screenings since 2018. Of those screened, 16% or > 5000 women had positive results of depression and more than half of those have completed follow-ups with behavioral health.

In our inpatient settings, we have utilized a pilot program to provide proactive consultation to patients who deliver at a rural hospital in our system by providing risk factor screening for those individuals. Similar to the outpatient screening, high-risk patients are provided with inpatient psychiatric consultation, medication initiation as indicated, and referral to the same perinatal psychiatry network.

As a result of the screening initiative and heightened awareness around perinatal mental health, the peripartum therapists and psychiatrists at our institution scheduled over 10,000 patient visits in the calendar year 2021. We propose that large systems should leverage available infrastructure to implement screening interventions in obstetrical settings and connection to reproductive psychiatric care if available that make sense within their communities and cultural

context. This type of transition from screening to intervention requires collaboration across disciplines and departments and the building of a workforce that is well-versed in reproductive mental health.

For our peripartum individuals struggling with substance use disorders, we have continued to offer in-person services, with prioritization of peripartum patient appointments; however, in our clinical experience, many patients have missed appointments and been unreachable at the numbers provided. Given the inherent high risk of this population having challenges in engaging with care, we suggest obtaining alternate phone numbers or any other contact information that may be helpful in connecting with peripartum patients to help bridge this gap.

## Conclusion

Alarming rates of maternal mortality in the USA leading to and during the COVID-19 pandemic necessitate preventive measures to make a discernible impact on perinatal mental health. Identifying critical risk factors including health inequities related to race, ethnicity, and gender identity, history of psychiatric illness, psychiatric symptomatology during pregnancy, and comorbid trauma, SUDs, and other conditions will place physicians and other mental health providers in a position of enacting effective mental health care for peripartum individuals. Appropriate screening for both symptoms and risk factors will allow for a preventive and personalized approach to care and allow for referral to treatment. A system-level approach to screening and referral to care is the next frontier for a more integrated health care paradigm.

## Declarations

**Conflict of Interest** The authors declare no competing interests.

**Human and Animal Rights and Informed Consent** This article does not contain any studies with human or animal subjects performed by any of the authors.

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