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## Reducing psychiatric illness in the perinatal period: A review and commentary

Rohr J *et al.* Reducing psychiatric illness in the perinatal period

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### INTRODUCTION

Rates of maternal morbidity and mortality are a global health crisis. In 2017, 295000 women worldwide perished due to maternal causes<sup>[1]</sup>. Global maternal mortality rates are estimated at 211 maternal deaths per 100000 live births. The lifetime risk of maternal mortality for a 15-year-old girl is estimated at 1 in 190<sup>[1]</sup>. Mortality rates are more than 40 times higher in underdeveloped countries compared to developed geographic areas such as Europe and Australia<sup>[1]</sup>. There are major differences in rates of maternal mortality and morbidity. Differences can be seen between countries, with sub-Saharan Africa and Southern Asia accounting for approximately 86% of all estimated global maternal deaths in 2017<sup>[1]</sup>. Differences based on minority status can also be seen within countries. In the United States, Black women are 2.5 times more likely to die in childbirth than White women<sup>[2]</sup>. In the United Kingdom, Black and Asian women are more likely to die of maternal-related causes than White women<sup>[3]</sup>. Ethnic minorities (*e.g.*, non-Han women) in China have higher maternal mortality rates than non-minority populations (*e.g.*, Han women<sup>[4]</sup>). In Brazil, non-white women are 3.5 times more likely to die from obstetric deaths than White women<sup>[5]</sup>. In Australia, Indigenous women have a maternal mortality rate 4.6 times higher than non-Indigenous women<sup>[6]</sup>. These trends are consistent worldwide.

Maternal Mortality Review Committees have determined that 11% of pregnancy-related deaths are due to PPI, and these deaths are 100% preventable<sup>[7]</sup>. PPI is the most common morbidity in pregnancy and the leading cause of mortality during the perinatal period in developed nations<sup>[8]</sup>. PPI is a significant contributor to poor

outcomes throughout pregnancy, childbirth, and postpartum. Rates of PPI in high-income countries range from 7%-15%, while the prevalence ranges from 19%-25% in low- and middle-income countries<sup>[9]</sup>. Women of color are especially at risk for PPI. In the United States, Black, Asian/Pacific Islander and Hispanic/Latinx women report experiencing PPI at 2-5 times the rates of White women<sup>[10,11]</sup>. In the United Kingdom, non-White (especially Asian) women experience PPI at higher rates than White women<sup>[12]</sup>. In Norway, the prevalence of PPI in women of underrepresented ethnicities was almost 3 times that of Western Europeans<sup>[13]</sup>. Research on racial disparities is limited. Many studies combine all racial and/or ethnic minorities together, which disregards important differences between races and cultures.

PPI refers to any psychiatric illness experienced from the beginning of pregnancy up to 1 year postpartum. A landmark study of 10000 mothers found that of women who screened positive for depression, 27% reported being depressed before pregnancy and 33% reported that their depression began during pregnancy<sup>[14]</sup>. Though many primarily think of postpartum depression when referring to PPI, there are several psychiatric illnesses that are prevalent and related to negative outcomes during the perinatal period. Perinatal depression is indeed common, occurring in around 25% of women<sup>[15]</sup>. It refers to the occurrence of a major depressive episode in the perinatal period, marked by low mood, low energy, sleep problems (apart from caring for the infant), and sometimes suicidal thoughts. This is differentiated from what has been called the “baby blues” or the “maternity blues”, which refers to a transient affective disturbance that usually peaks within 5 days after childbirth<sup>[16]</sup>. PPI also refers to psychiatric symptoms beyond depression. Perinatal anxiety presents with symptoms such as excessive and uncontrollable worries about the baby and motherhood, fear of childbirth, and intrusive thoughts of the baby being harmed or dying<sup>[17]</sup>. It may occur at higher rates than perinatal depression<sup>[18]</sup>. Perinatal obsessive-compulsive disorder is more common than obsessive-compulsive disorder in the general population and is marked by obsessions and compulsions related to the baby<sup>[19]</sup>. Obsessions are generally related to fears of contamination and harming the baby and compulsions may include avoidance of child-

rearing tasks and mental rituals<sup>[19]</sup>. Perinatal post-traumatic stress disorder (PTSD) refers either to a recurrence of PTSD brought on by major life changes during pregnancy and postpartum or to new onset PTSD secondary to traumas experienced during pregnancy or childbirth. Symptoms include nightmares, avoidance of stimuli associated with the trauma, and negative appraisals of self and others related to the trauma<sup>[20]</sup>. Finally, perinatal psychosis, though relatively rare, is an emergent situation. It typically occurs within 2-3 d of childbirth, though emerging evidence suggests that some women may even experience it prenatally. It is most common in women with a history of bipolar disorder or with a first-degree relative with schizophrenia or bipolar disorder<sup>[21]</sup>.

PPI is associated with a range of negative outcomes. Women experiencing PPI tend to initiate prenatal care later and miss more appointments. Both factors are highly associated with poor childbirth outcomes<sup>[22-24]</sup> and are targets for appropriate intervention like psychoeducation and enhanced awareness of PPI. PPI is also associated with pregnancy and delivery complications (such as high blood pressure, gestational diabetes premature labor, low infant APGAR score, low birth weight<sup>[25]</sup>). Specific findings stratifying risk by ethnicity and race are limited. One United States study found that non-Hispanic Black and Asian women have higher levels of risk for preterm birth while depressed than White women, and Hispanic women were not at higher risk for preterm birth when depressed<sup>[26]</sup>.

Women with PPI and their babies also experience postpartum comorbidities associated with psychiatric illness. Women with PPI have more trouble bonding with their baby, and mental health concerns can be seen 4-5 years postpartum in 30%-40% of women<sup>[22,27,28]</sup>. The children of women with untreated psychiatric distress go on to have higher rates of psychiatric illness, behavioral problems, and academic difficulties<sup>[29]</sup>. To illustrate, a French study showed increased externalizing and internalizing behavior and poor motor and regulation skills in 1-year-old children of mother with perinatal depression<sup>[30]</sup>. These findings were replicated in a large ( $n = 2698$ ) study out of the Netherlands examining internalizing behavior in 3-year-old children of women with

perinatal anxiety and depression<sup>[31]</sup>. Studies of teenagers (aged 16 to 17-years-old) in Finland and the United Kingdom demonstrated increased risk for depression and low social competence when their mother had experienced perinatal depression<sup>[32,33]</sup>.

Risk factors for PPI are myriad and many are quite common. Individual risk factors include unwanted pregnancy (50% of pregnancies), primiparity (*i.e.*, first pregnancy), and fertility difficulties<sup>[34]</sup>. Social determinants of health related to PPI include childhood maltreatment, especially childhood sexual violence, which affects up to 25% of girls from low-income and middle-income countries<sup>[9]</sup>. Other social determinants that increase risk for PPI and are disproportionately experienced by women of color and underrepresented ethnicities are poverty, poor nutrition, lower levels of educational attainment, low social support, gender discrimination and gender-based violence, and previous mental health conditions<sup>[9,34,35]</sup>. Again, studies stratifying risk for PPI by race and ethnicity are extremely limited, though there is evidence for the deleterious impact of immigration and race-based discrimination on mental health (*i.e.*, increased risk for PPI) in the perinatal period<sup>[36]</sup>. Adversity more commonly observed in underrepresented populations, such as intimate partner violence, childhood trauma and military deployment, is also associated with greater risk for mental health outcomes<sup>[36]</sup>.

Untreated PPI can have devastating consequences for mothers, their partners, their children, their workplaces, and their communities. At the population level, PPI is associated with increased healthcare costs, inappropriate use of healthcare (*i.e.*, excess- and under-utilization as well as increased use of emergent care), child abuse, family dysfunction, and, at worst, suicide, homicide, and infanticide<sup>[22,37]</sup>. At the individual level, PPI impacts the mother's health, attachment with their child, the infant's health, and can lead to suicide or homicide<sup>[38,39]</sup>. At an economic level, the cost of PPI is significant. Though research on exact costs worldwide are limited, studies out of Canada and South Africa suggest that women with PPI utilize services costing roughly 2 times those of women without PPI<sup>[40,41]</sup>. In the United States, PPI costs an estimated \$14 billion per year, including cost estimates of loss of productivity and direct healthcare<sup>[42]</sup>. Even when strictly examining medical costs in the United States, PPI costs

5 times as much as other pregnancy concerns like gestational diabetes or postpartum hemorrhage<sup>[43]</sup>.

Given the regular touchpoints between pregnant women and providers during the prenatal period and the onset of many psychiatric concerns during the prenatal period, pregnancy offers an optimal time for early detection and intervention for perinatal mental health problems<sup>[44]</sup>. The American College of Obstetricians and Gynecologists recommends 13 care appointments during the prenatal period<sup>[45]</sup>. Evidence suggests that prenatal mental health interventions are effective at improving health outcomes and preventing psychiatric distress, but PPI is significantly under-identified and largely under-treated<sup>[46]</sup>.

## **CURRENT RECOMMENDATIONS**

In response to mounting concerns related to PPI and its impact on women and communities, initiatives to improve care have focused on universal screening. In the United States, the following organizations all recommend at least one screening for perinatal depression with a validated measure during the perinatal period: American College of Obstetricians and Gynecologists, American Academy of Pediatrics, United States Preventive Services Task Force (USPSTF), Centers for Medicare and Medicare Services, Council on Patient Safety in Women's Health Care<sup>[47-50]</sup>. The USPSTF specifies that screenings should only occur when there are significant resources for effective treatment and follow-up<sup>[51]</sup>. In the United Kingdom, universal screening is recommended by the National Institute for Health and Care Excellence, though again, only when there are resources available for treatment and follow-up<sup>[52]</sup>. This is consistent with guidelines suggested by the World Health Organization in 2022<sup>[34]</sup> which suggested a stepped-care approach to the integration of perinatal mental health services into maternal health care. In Canada, universal screening is not recommended by the Canadian Task Force on Preventive Healthcare due to paucity of evidence for its benefits<sup>[53]</sup>.



## **FOUR CHALLENGES ASSOCIATED WITH CURRENT RECOMMENDATIONS**

Though there are some benefits to universal screening, including the low cost and low provider burden of having patients complete the forms, at least four major challenges have arisen with the current recommendations for universal screening in the perinatal period. Each challenge impacts all pregnant women, and each is also uniquely impactful in the outcomes of women of color.

### ***Universal screening is not universally implemented***

Unfortunately, screening has not been universally and systematically implemented in prenatal care, with estimates of screening by OB/GYN providers ranging from 39-72%<sup>[44,54,55]</sup>. Providers often do not assess for psychiatric illness for a number of reasons, including: (1) Lack of education regarding efficient measurement tools; (2) uncertainty regarding how to respond if a pregnant person endorses signs of perinatal psychiatric illness (PPI, and whether they will then be liable if negative outcomes occur); (3) lack of guidance regarding availability of appropriate treatment; (4) lack of time in short visits; and (5) lack of financial incentive for clinicians to screen<sup>[56,57]</sup>.

There are notable racial disparities in the decision whether to screen for psychiatric distress. Women of color are 5%-10% less likely to be asked about psychiatric distress than White women<sup>[58,59]</sup>, and without screening, women of color are less likely to spontaneously offer information regarding psychiatric distress due to discomfort and stigma<sup>[60]</sup>.

### ***Pregnant women underreport distress on psychiatric screenings***

When screening does occur, many pregnant women underreport psychiatric distress. A qualitative review found that across several studies, many women reported that they did not have knowledge about PPI and were unaware that they would likely meet criteria given their current symptoms<sup>[61]</sup>. Other women who did recognize that they had symptoms of PPI reported being unable or unwilling to disclose feelings due to fear of burdensomeness, fear of giving their family a “bad name”, and fear of losing their

baby<sup>[61]</sup>. Many women had previously had symptoms dismissed or over-normalized (i.e., described as normal aspects of the pregnancy period, a “rite of passage”) and thus declined to disclose symptoms<sup>[62]</sup>. Other reasons to underreport symptoms include fear of disclosure outcomes, worry about being judged to be a bad mother, and lack of continuity of care<sup>[44,63]</sup>. Importantly, one study linked discomfort with being screened with higher scores on a depression scale, highlighting the relationship between experience of symptoms and discomfort with reporting them<sup>[64]</sup>.

Limited data exist on differences in reporting of symptoms among pregnant women of different racial groups. However, women of color underreport psychiatric distress in non-pregnant samples, so it can be assumed they likely underreport symptoms during pregnancy<sup>[65]</sup>.

### ***Referrals are inconsistent***

Women who do screen positive for psychiatric distress may or may not be given a referral to care, based on the clinic’s access to resources and information. One program successfully engaged 80% of women who screened positive for depression symptoms in care, while another saw fewer referrals to care after universal screening was implemented than before<sup>[56,66]</sup>.

Women of color who screen positive for psychiatric distress are not referred when appropriate as often as are White women. In one study, White women who disclosed psychiatric distress were referred for treatment twice as often as Asian and Black women<sup>[59]</sup>. In another, Hispanic/Latinx and Black women who met full criteria for depression were less likely to receive a depression diagnosis, limiting referrals<sup>[67]</sup>. Some studies show a 10% referral to treatment rate when women of color screen positive for psychiatric distress<sup>[68]</sup>.

### ***Follow-up after referrals is inconsistent***

If they are given a referral to care, pregnant women do not follow up with treatment. In a study of referral rates, only approximately 40% of women referred attended even one



visit<sup>[69]</sup>. Primary reasons for lack of follow-up include practical concerns (*e.g.*, perceived insufficient time, the inconvenience of attending appointments), perceived stigma (*e.g.* feeling that needing help makes one a bad mother), and displeasure with how symptoms were handled by their provider (*e.g.*, feeling minimized, dismissed, or humiliated<sup>[61,62]</sup>). Pharmacological hesitancy is also noted in failure to follow-up, with many women worried about addiction, side effects, and stigma<sup>[62]</sup>.

When resources might be available, women of color have significantly lower utilization rates of psychiatric services (*e.g.*, attendance at appointments, continued care and follow-up, medication management) than White women, even when controlling for age, type of psychiatric condition, and socioeconomic status<sup>[70-74]</sup>. Some researchers identify mental illness stigma as a potential contributor to these differences<sup>[75]</sup>, as <sup>12</sup> Black women perceive greater overall depression stigma than White women, regardless of personal experience with depression<sup>[76]</sup>. Furthermore, prior experiences with mental health treatment likely play a role in the attitudes of Black women seeking treatment during periods of psychological distress<sup>[77]</sup>.

Though screening all women is the suggested standard of care in response to the mental health crisis in pregnant and postpartum women, these data demonstrate that universal screening is not sufficient for improving outcomes. Universal screening may even paradoxically serve as a barrier to care when delivered in its most common form (attached as a form to check-in paperwork). Without an explanation as to how the answers will be used, women (especially women of color) underreport symptoms to avoid negative outcomes<sup>[78]</sup>.

In short and consistent with the Canadian Task Force on Preventive Healthcare, the current recommendations for universal screening are not effective for improving outcomes.

### **EQUITY-ORIENTED CARE**

The above-described challenges inherent to universal screening reflect profound health inequities for pregnant women and especially pregnant women of color. Current

standards of care (e.g., universal screening and referral) were developed using the traditional medical framework, within which health inequities are increasing worldwide<sup>[79-81]</sup>. Even countries that provide universal health services to their citizens demonstrate major inequities based on race and ethnicity in their perinatal care. For example, in a large study in the United Kingdom examining over 600000 women who gave birth, <sup>11</sup> Black African, Asian, and White non-British women had significantly lower access to outpatient mental health services than White British women<sup>[82]</sup>. Moving the needle on PPI and thus maternal mortality and morbidity will require approaches that are fundamentally aware of and responsive to health inequities in a way that traditional healthcare is not.

<sup>18</sup> Equity-oriented care is positioned as an alternative to traditional care. It has been previously defined as <sup>14</sup> “an approach that aims to reduce the effects of structural inequities, etc.; <sup>1</sup> the impact of multiple and intersecting forms of racism, discrimination, and stigma (e.g., related to mental illness, chronic illnesses, non-conforming gender and sexual identities, etc.) on people’s access to services and their experiences of care; and the frequent mismatches between dominant approaches to care etc., and the needs of people who are most affected by health and social inequities”<sup>[83]</sup>. An equity-oriented framework is trauma-informed (recognizing the higher rates of trauma and violence in communities of color), culturally safe (explicitly addressing power dynamics and historical mistrust in the medical system), and contextually tailored (highlighting skills and education relevant to the medical system and community)<sup>[84]</sup>.

Therefore, a successful perinatal mental health intervention would deviate from the traditional model of screening to refer and would follow an equity-oriented model. This model would specifically address mental health stigmatization and work to reduce systemic racism in the medical context while addressing practical barriers to accessing care. A direct way to meet both needs is to move away from universal screening and toward universal intervention.

## UNIVERSAL INTERVENTION IN THE PRENATAL PERIOD

A universal intervention approach to psychiatric distress in pregnancy may eliminate known barriers to appropriate psychiatric management, thus improving trajectories for all pregnant women, and especially for women of color (Figure 1). Rather than losing women at every step of the screening-to-referral pipeline, provision of a universal intervention in the prenatal period ensures that evidence-based tools for prevention of PPI are delivered. Providing this intervention to all women is a novel approach to management of PPI.

Based on the accumulation of evidence regarding the most impactful interventions in the perinatal period, equity-oriented prenatal universal intervention should be trauma-informed<sup>[85]</sup> and limited to one 45-min session. This model is consistent with research suggesting that even one childbirth educational session is effective for improving outcomes and that requiring more sessions creates a barrier to psychiatric care<sup>[86,87]</sup>. It should be delivered in the prenatal period as either an adjunct to a standing prenatal appointment or as a separate appointment. It can be delivered by a mental health professional (e.g., contracted, embedded, or other) or potentially by a trained OB/GYN provider (e.g., nurse, MA, or other). Based on previous research regarding barriers to effective care as well as what is most helpful for women during the prenatal period, the universal intervention should include the following components: (1) Brief education about pregnancy and the childbirth process; (2) brief discussion of perinatal psychiatric issues in plain language; (3) discussion of trust and potential discomfort with providers; (4) explanation of skills for maximizing healthcare appointments; and (5) list of free and low cost resources available throughout pregnancy and after childbirth. Components 1-4 could be created and disbursed as relevant for all pregnant women while component 5 needs to be individualized to the clinic based on location and institutional/community resources.

### ***Brief education about pregnancy and the childbirth process***

Various psychological techniques and theories suggest the importance of understanding stressors that lie ahead and managing them proactively (i.e., stress

inoculation training<sup>[88]</sup>, dialectical behavior therapy<sup>[89]</sup>). Consistent with these theories, education should be provided regarding both the normal course of the pregnancy and childbirth process (including medically normal but potentially psychologically stressful situations such as transvaginal ultrasounds, manual cervical checks, and childbirth) as well as non-normal but still common situations (*e.g.*, gestational diabetes, preeclampsia, emergency c-sections). A respectful and informative overview of the pregnancy and childbirth phases will provide patients with an understanding of their course as well as allowing for prophylactic distress tolerance for the different situations.

#### ***Brief discussion of perinatal psychiatric issues in plain language***

The average medical communication requires a level of health literacy (*i.e.*, ability to read and use medical information) that is higher than that of the average patient<sup>[90]</sup>. Improving mental health literacy, or knowledge about specific mental health conditions including early detection, has been suggested as a way to intervene earlier in the experience of psychiatric illness<sup>[91]</sup>. For this intervention, this would include providing patients with a plain language description of various PPI, including how they might experience them (in contrast to education for providers, which focuses more on how the provider might perceive symptoms).

#### ***Discussion of trust and potential discomfort with providers***

Because limitations to screening include the likelihood of underreporting symptoms due to discomfort with and lack of trust in providers, an intervention should include a candid and humble discussion of this issue. Discussing common barriers to effective collaboration with providers (*e.g.*, experience of racism, fear of how shared knowledge will be used, previous traumatic medical experiences) may elucidate individual biases and difficulties that can be managed.

#### ***Explanation of skills for maximizing healthcare appointments***

Patient empowerment is a crucial component of good medical care, and it is especially critical for vulnerable populations that tend to engage more passively in medical care<sup>[92]</sup>. Empowering women to utilize their medical appointments in the ways that they find most helpful can be done through providing simple skills and providing permission for their use. Skills should include bringing in questions written down ahead of time, recording appointments (with permission from provider), and asking for time for questions at the start of the appointment<sup>[93]</sup>. Skills also include emotion regulation skills to use when feeling anxious in the appointment.

*List of free and low-cost resources available throughout pregnancy and after childbirth*

A list of virtual and in-person options should be provided if the patient is interested in pursuing further behavioral health resources.

This method is equity-oriented in that it is trauma-informed, culturally safe (by explicitly addressing trust and discomfort with providers), and contextually tailored (discusses skills in plain language and ways to maximize healthcare appointments). It does not rely on women to overcome systemic barriers, fear and mistrust to risk disclosing painful experiences; rather, it offers information and education from a place of cultural humility and openness.

*This method may confer a number of benefits over universal screening*

**Reduction of stigma:** By delivering the intervention to all women, the information and education are considered standard components of prenatal care (similar to education about gestational diabetes) rather than specialized referrals based on problematic or unique disclosures. We expect that providers may see an increase in scores on screenings and in PPI diagnoses due to increased comfort with disclosing.

**Increased preparation:** The information provided within a universal psychological intervention should highlight events during the pregnancy and childbirth periods that may be uniquely stressful with an emphasis on identifying methods of coping in

advance. This normalizes the potential reactions the pregnant person may have and allows them to prepare appropriately.

**Increased mental health literacy:** This intervention will provide general education about mental health concerns, which increases mental health literacy and reduces stigma.

**Increased comfort with help-seeking:** By destigmatizing PPI and clearly explaining the importance of treating PPI, pregnant women may feel more comfortable seeking access to mental healthcare.

These interventions should be standard of care for all pregnant women.

### **CHALLENGES OF THIS MODEL**

This model is not without its challenges. Systems-level barriers continue to exist, whether healthcare is privatized or nationalized. In low-, middle-, and high-income countries, challenges include low levels of funding afforded to mental health services, inequalities in levels of access to mental health care, and shortages of mental health providers<sup>[94,95]</sup>. Decisions will need to be made in clinic as to whether the intervention should be delivered by an embedded mental health professional (MHP) or by an OB/GYN provider. Benefits of delivery by an MHP are need for limited training, ability to provide ongoing care in clinic, and reduced burden on an already overburdened OB/GYN staff. Benefits of delivery by an OB/GYN provider are the low resources needed for implementation and reduction in the likelihood that the provider will divert responsibility for mental health management fully to the MHP, a frequent occurrence when MHPs are embedded in primary care<sup>[66]</sup>. Finally, this model does not address the major shortage of psychiatrists and mental health practitioners, both of whom are necessary when ongoing care is needed for more serious PPI management.

### **UNIVERSAL INTERVENTION VS UNIVERSAL SCREENING**



As discussed above, universal intervention may address many of the concerns with universal screening. In summary, Table 1 discusses the advantages and disadvantages of universal screening (current state in many countries) and universal intervention (proposed model).

Figure Legends

Figure 1 Comparison of traditional model of screening-to-refer with proposed model of universal intervention.

Table 1 Advantages and disadvantages of universal screening and universal intervention

|                        | Advantages  | Disadvantages   |
|------------------------|---|---|
| Universal screening    | Low cost; low provider burden   | Patients likely to under-disclose; disparities in referrals and follow-ups; disparities in who receives resources and psychoeducation; reflects traditional model of healthcare; higher levels of care not always available if needed |
| Universal intervention | All patients receive psychoeducation and resources; mental healthcare is integrated into prenatal care; all patients have opportunity to discuss mental health concerns; will likely reduce costs long-term | Higher immediate cost; need for additional practitioners; higher levels of care not always available if needed  |

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