



Screening for Mental Health and Substance Use Disorders in Obstetric Settings

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Abstract

Purpose of Review The objective of this review is to describe the extent to which (1) obstetric settings are currently screening for mental health and substance use disorders and social determinants of health (SDoH), and (2) screening is followed by systematic approaches for ensuring an adequate response to positive screens. Additionally, clinical and policy implications of current screening practices and recommendations are discussed.

Recent Findings Screening for perinatal depression in obstetric settings has increased. Despite their prevalence and negative impact, screening for other mental health and substance use disorders and SDoH is much less common and professional society recommendations are either nonexistent, less consistent, or less prescriptive.

Summary To truly address maternal mental health, we need to move beyond focusing solely on depression and address other mental health and substance use disorders and the contextual social determinants in which they occur.

Keywords Perinatal · Pregnancy · Screening · Anxiety · Depression · Mood disorder

Introduction

Mental health and substance use disorders are the most common complication of pregnancy and have deleterious effects on women and other perinatal individuals, and their children [1]. They are associated with negative consequences for the mother, child, and family, such as decreased healthcare utilization during pregnancy and negative birth and infant outcomes, including preeclampsia, low birth weight, and mother-infant bonding challenges [2–4]. Children of mothers with mood or anxiety disorders are at increased risk of having their own mood, anxiety, or behavioral disorders. Mental health and substance use disorders are on par with infection as a leading cause of preventable maternal mortality in the USA.

Much of the attention and focus of maternal mental health has been specific to postpartum depression - depression that occurs in the first year postpartum. While addressing postpartum depression is critical, it is also important to recognize that (1) other mental health and substance use disorders are common during pregnancy and the first year postpartum [5–8], and (2) for up to 60% of women who screen positive for postpartum depression, the onset will have occurred preconception or during pregnancy [9]. During the perinatal time period, anxiety disorders, post-traumatic stress disorder (PTSD), bipolar disorder, and substance use disorders are also common [5–8, 10, 11]. Anxiety disorders and PTSD occur in up to 30% and 15% of women respectively [12]. Substance use, occurring in more than 10% of women, is also common and a major contributor to maternal mortality [13]. Bipolar disorder occurs in up to one in five women who screen positive for postpartum depression [9]. Detection of possible bipolar is especially critical because treatment is different for bipolar disorder versus unipolar depression.

As we open our lenses to other psychiatric illnesses, we must also consider the contextual factors in which these conditions occur. Social determinants of health (SDoH) are factors that exacerbate illness and hinder or facilitate women or other perinatal individuals getting needed mental health and substance use disorder care [14•].

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To adequately address maternal mental health and substance use disorders and the context in which they occur, the focus needs to expand beyond depression. The objective of this review is to describe the extent to which (1) obstetric settings are currently screening for mental health and substance use disorders and SDoH, and (2) screening is followed by systematic approaches for ensuring an adequate response to positive screens. Additionally, clinical and policy implications of current screening practices and recommendations are discussed.

Screening for Mental Health and Substance Use Disorders

Recognizing the gender diversity within the group of patients receiving obstetrical care, we describe the population of interest as “women and other perinatal individuals” when possible. We use the term “women” when referring to studies or papers that only included or described the population as women.

Depression

Perinatal depression occurs in 11.4% of women in high-income countries and 13.1% in lower/middle-income countries [15•, 16]. It is more common in populations at greater risk for health disparities, including women of color and those in low-income communities [17]. Several risk factors increase women’s risk of developing perinatal depression, including a history of prior mental or physical illness and lack of social supports [18, 19].

Recognizing the prevalence and negative impact of perinatal depression and thus the importance of screening [8, 15•, 16], many professional societies and policymakers recommend that front-line obstetric providers (including Ob/Gyns, family practitioners, certified nurse midwives, and nurse practitioners) conduct depression screening in obstetric settings using a validated tool (Table 1) [20•, 21•, 22, 23•]. With these recommendations, many practices have incorporated screening into their intake procedures and have embedded measures in electronic health records (EHR) [42••]. Screening for depression at multiple time points, including during pregnancy, is crucial because the majority of patients’ perinatal depression develops prior to delivery. Of women with perinatal depression, 30% will enter pregnancy with preexisting illness, another 30% will develop depression during pregnancy, and 40% will develop depression in the postpartum period [9].

The primary tools used to screen for perinatal depression include the Edinburgh Postnatal Depression Scale (EPDS) [43] and the Patient Health Questionnaire (PHQ-9) (Table 2), both of which can be administered in under 5 min [71]. The EPDS was developed specifically to identify perinatal depression and has excellent psychometric properties that have been validated for use in pregnancy and the

postpartum period. The PHQ-9 has also been validated for use in perinatal women with comparable results to the EPDS and is commonly used in primary care settings [72]. Both tools have been translated to multiple other languages and validated in many [73–75]. Most front-line obstetric providers serving perinatal women, including pediatric, obstetric, and family medicine providers, now consider screening for perinatal depression within their purview and are doing so with regularity, with screening rates estimated between 50 and 98% (Table 2) [76–79].

To ensure that women or other perinatal individuals receive appropriate treatment, many obstetric practices have developed protocols for how to respond to positive depression screens or concerns about risk for self-harm or suicide [42••, 80]. The frequency with which women are connected to the appropriate services after a positive screen and the breadth of care provided varies greatly; estimates of referral to mental health services range between 32 and 79% [76–78]. Despite being critical for treatment to remission, it is less common for practices to have a system in place to ensure that symptoms are followed and that treatment is adjusted accordingly [80].

Bipolar Spectrum Disorders

Bipolar spectrum disorders (henceforth referred to as bipolar disorder), which include bipolar I disorder, bipolar II disorder, and cyclothymia, are complex and serious illnesses whose features overlap with those of depression. Similar to depression, bipolar disorder is associated with negative maternal, infant, and child outcomes [1, 81]. It is also the strongest predictor of infanticide, occurring in 2–7/100,000 infants [1, 82, 83]. Women are at their highest lifetime risk for bipolar disorder episodes during the perinatal time period [5]. Bipolar disorder occurs in less than 3% of the general population [84] and disproportionately affects women in the perinatal period [81]. As many as 20% of women that screen positive for depression in the perinatal period may have bipolar disorder [9]. New onset and recurrent episodes of bipolar disorder may affect twice as many individuals in the perinatal period than at any other times in the lifespan [85–87].

Because bipolar disorder and depression both include depressive episodes, bipolar disorder is often misdiagnosed for the more common unipolar depression. This misdiagnosis can lead to treatment with an unopposed antidepressant which can precipitate mania and/or psychosis [88]. It is critical to identify women and other perinatal individuals that have or may have bipolar disorder. In contrast to other mood or anxiety disorders like depression, in which psychotherapy is often the first-line evidence-based treatment, pharmacotherapy is the mainstay of treatment for bipolar disorder. Recognizing the importance of bipolar disorder screening, the Council on Patient Safety in Women’s Health Care’s Maternal Mental Health Safety Bundle, recognized as the gold standard of treatment

Table 1 Relevant professional organizations’ recommendations for screening for mental health and substance use disorders in the perinatal period

	American College of Obstetricians and Gynecologists (ACOG)	American Psychiatric Association (APA)	US Preventive Services Task Force (USPSTF)	American Academy of Pediatrics (AAP)	American Academy of Family Physicians (AAFP)
Depression	Screen with validated tool at least once in pregnancy or postpartum. If screened during pregnancy, additional screening should occur at comprehensive postpartum visit [20•].	Screen with a validated tool twice during pregnancy (once in early pregnancy, once in late) and postpartum (during the first 6 months of pediatric visits) [21•].	Screen for depression with validated tool in pregnancy and postpartum [22].	Screen for maternal depression once during pregnancy and at infant well child visits (months 1, 2, 4, and 6) [23•].	Supports the U.S. Preventive Services Task Force (USPSTF) recommendation [24].
Bipolar disorder	Screening with a validated tool should be completed before prescribing antidepressants [25••] ^a .	All perinatal patients should be evaluated for depressive, anxiety, and psychotic disorders throughout the pregnancy and postpartum period [21•].	None	None	None
Anxiety	Screen with validated tool at least once in pregnancy or postpartum. If screened during pregnancy, additional screening should occur at comprehensive postpartum visit [20•].	All perinatal patients should be evaluated for depressive, anxiety, and psychotic disorders throughout the pregnancy and postpartum period [21•].	None	None	None
Trauma and intimate partner violence (IPV)	Screen all perinatal women for a history of sexual assault, paying particular attention to those who report relevant symptoms [26•]. Screen all perinatal women for IPV at periodic intervals, including the first prenatal visit, at least once per trimester, and at the postpartum checkup [27].	None	Screen for intimate partner violence (IPV) in perinatal women [28].	None	Supports the U.S. Preventive Services Task Force (USPSTF) recommendation [29].
Adverse childhood experiences (ACEs)	General recommendation to screen for childhood sexual assault but not explicit to perinatal period [26•]	None	None	None	None
Substance use disorders	Screening with a validated tool at the first prenatal visit in partnership with the pregnant woman [30•, 31, 32]. Screening that is based only on factors such as poor adherence to prenatal care or prior adverse pregnancy outcome can lead to missed cases and may add to stereotyping and stigma. Therefore, it is essential that screening be universal.	Screen pregnant and lactating women for substance use and co-occurring mental disorders and conduct them in a consistent and non-discriminatory manner [33•]. Screening may or may not include a positive drug test and a positive screen is not equivalent to the diagnosis of an active substance use disorder.	Screen for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women [34, 35]. Ask all pregnant women about tobacco use [36]. Evidence is insufficient to suggest screening pregnant women for illicit drug use	None	Supports the U.S. Preventive Services Task Force (USPSTF) recommendation [37–39].
Social determinants of health (SDoH)	Inquire and document social and structural determinants of health that may influence a patient’s health and use of health care such as access to stable housing, access to food and safe drinking water, utility needs, safety in the home and community, immigration status, and employment conditions [14•, 40, 41].	None	None	None	None

^a This is a Council on Patient Safety in Women’s Health Care recommendation, of which ACOG is the administrator and a member

Table 2 Tools for screening perinatal women for mental health and substance use disorders and their associated screening rates in obstetric settings

	Recommended tools	# items	Sensitivity	Specificity	Screening rates in obstetric settings
Depression	EPDS—Edinburgh Postnatal Depression Scale [44, 45]	10	55–98%	68–97%	50–98%
	PHQ-9—Patient Health Questionnaire 9-item [46]	9	53–77%	85–94%	
	PDSS—Postpartum Depression Screening Scale [45]	35	67–89%	49–84%	
	BDI-II—Beck Depression Inventory Second Edition [45]	21	45–92%	80–9%	
Bipolar disorder	MDQ—Mood Disorder Questionnaire [47–52]	3 [§]	44–90%	61–92%	aa
	CIDI—Composite International Diagnostic Interview [53]	3	69–100%	98–99%	
Anxiety	GAD-7—Generalized Anxiety Scale 7-item [54]	7	73.3%	67.3%	aa
	EPDS—anxiety subscale (items 3,4,5) [55••] [†]	3	aa	aa	
	GHQ—General Health Questionnaire [56]	60	87.5%	80.6%	
	STAI—State-Trait Anxiety Inventory [57]	20	81.3%	77.5%	
	HADS—Hospital Anxiety and Depression Scale [58]	14	66%	93%	
Adverse childhood experiences (ACEs)	PASS—Perinatal Anxiety Screening Scale [59, 60]	31			
	ACEs Questionnaire [61] [†]	10	aa	aa	aa
Trauma and intimate partner violence (IPV)	PC-PTSD—Primary Care PTSD screen [62]	4	54%	93%	aa
	PCL-5—PTSD Checklist for the DSM-5 [63]	20	74.5%	70.6%	
	PPTSDQ—Perinatal Post-Traumatic Stress Disorder Questionnaire [64]	14	aa	aa	
Substance use disorders	4Ps/4Ps plus—questions about substance use in Parents, Partner, Past, and Pregnancy [65–67]	4–5	75–95%	13–88%	aa
	NIDA Quick Screen—Screen developed by the National Institute of Drug Abuse (NIDA) [65]	4	65–81%	70–88%	
	SURP-P—Substance Use Risk Profile-Pregnancy [65, 67]	3	89–100%	8–67%	
	CRAFFT screen—questions form acoustic title [¶] [68, 69]	6	68–92%	72–96%	
Social determinants of health (SDoH)	Social needs screening toolkit [70] [†]	10	aa	aa	aa

^{aa} Not enough data to estimate

[§] Question 1 of the MDQ has 13 items that are answered individually as a part of it

[†] EPDS anxiety subscale questions: I have blamed myself unnecessarily when things went wrong, I have been anxious or worried for no good reason, I have felt scared or panicky for no very good reason

[†] Not validated in perinatal women

[¶] CRAFFT questions: Have you ever ridden in a CAR driven by someone (including yourself) who was “high” or had been using alcohol or drugs? Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in? Do you ever use alcohol or drugs while you are by yourself, ALONE? Do you every FORGET things you did while using alcohol or drugs? Do your family or FRIENDS ever tell you that you should cut down on your drinking or drug use? Have you ever gotten into TROUBLE while you were using alcohol or drugs?

guidelines and recommendations, recommends screening for bipolar disorder prior to initiating antidepressant pharmacotherapy (Table 1). The bundle provides broad direction for how obstetric practices can incorporate perinatal depression and anxiety screening, intervention, referral, and follow-up into their workflow [25••].

Validated tools for bipolar disorder screening exist and include the Mood Disorder Questionnaire (MDQ) [47], a self-administered instrument, and the Composite International Diagnostic Interview (CIDI) bipolar stem [89], a provider-administered tool. These are short instruments, validated for use in the perinatal period to detect bipolar disorder with relatively high sensitivity and specificity. The sensitivity and specificity of the MDQ and CIDI vary, depending on the scoring methods used (Table 2) [48–51, 53]. Both screens require minimal additional time/testing burden to the patient or provider.

Despite the demonstrated importance of screening, there is a dearth of data on the rates at which front-line obstetric

providers are screening for bipolar disorder. This may be because providers are more reticent to address bipolar disorder generally because of its complex disease trajectory and management [90]. Compounding this barrier to screening is the scarcity of information available to guide obstetric providers in how to respond to a positive bipolar disorder screen, though some newly developed resources have started to fill this gap [55••].

Anxiety and Anxiety-Related Disorders

Anxiety and anxiety-related disorders refers to a group of illnesses associated with dysregulated sympathetic nervous system arousal including panic disorder, agoraphobia, obsessive-compulsive disorder, generalized anxiety disorder, social phobia, specific phobia, and unspecified anxiety disorder. Collectively, these illnesses impact approximately 30% of obstetric populations [12, 91]. The impact of anxiety-related disorders is similar to that of perinatal depression, including

increased risk of miscarriage, preeclampsia, preterm delivery, low birth weight, and poor mother-infant bonding [6].

Perinatal anxiety disorders are more common than perinatal depression, with up to one in five perinatal women meeting criteria for at least one anxiety-related condition, and one in twenty meeting criteria for two or more. More specifically, prevalence rates among perinatal populations are estimated to be 4.8% for specific phobia, 1.9% for panic disorder, 2.4% for agoraphobia, 2.2% for obsessive-compulsive disorder, 2.4% for generalized anxiety disorder, 2.4% for social phobia, 4.8% for specific phobia, and 2.3% for unspecified anxiety disorder [92].

Professional societies are beginning to recommend screening for anxiety as part of routine perinatal mental health screening (Table 1) [25••, 93, 94]. Several validated self-report screening tools exist for anxiety-related conditions, with varying sensitivity and specificity. The Generalized Anxiety Disorder 7-item Screen (GAD-7) [54] is widely applied in primary care settings, where quick-to-administered screens are critical. The anxiety subscale on the EPDS [55••] may also detect anxiety symptoms; however in validation studies, the AUC (0.62) falls below generally acceptable standards [95]. One meta-analysis [96] supports the validity of several additional measures for anxiety screening (see Table 2) [96]; however, these tools are longer and may be less feasible to use in obstetric settings.

Anxiety and related disorders are often unrecognized in obstetric settings. Despite the low-uptake of anxiety screening, obstetric providers are amenable to screening for anxiety and see the value of discussing anxiety with their patients [97]. Among a sample of 244 Ob/Gyn residents, 86% reported that they always or sometimes ask patients about pregnancy-related anxiety, but 15–20% reported feeling frustrated with addressing pregnancy-related anxiety due to feeling underprepared to successfully managing it [98]. While there is a dearth of research examining approaches to ensure that obstetric practices respond adequately to positive anxiety screens, emerging studies indicate that provider education, electronic health record and workflow integration, and experiential training may help obstetric providers to screen and discuss anxiety with women or other perinatal individuals [99].

Adverse Childhood Experiences and Trauma

Adverse childhood experiences (ACEs), trauma, and PTSD are common in perinatal individuals [100, 101]. ACEs represent a specific subset of traumatic experiences that occur during formative years and exert a lifelong deleterious effect on physical and mental health. Among women with and without mental health diagnoses, maternal ACEs are associated with low birth weight, shorter gestational age, poor socioemotional health, poorer general physical and emotional health, and disrupted attachment [102, 103]. ACEs also predict comorbid

perinatal PTSD and depression, as well as negative outcomes among offspring [101].

The national prevalence of having experienced at least one ACE is estimated to be 46% in the general population [104]. Rates in obstetric populations are much higher, with 67% of women endorsing at least one ACE and 19% reporting four or more [105], which is generally associated with significantly poorer health outcomes [25••]. Recognizing these high rates, ACEs screening in healthcare settings is being recommended (Table 1) [100].

The ACEs Questionnaire is feasible and acceptable for use in obstetrics settings [61]. In a single clinic sample, 91% and 93% of patients reported being comfortable with the ACEs Questionnaire and discussing ACEs with their obstetric providers respectively. Providers reported significant increases in their comfort administering the questionnaire and discussing ACEs with patients, provided training and referral resources were available [106].

Precise screening rates for ACEs in obstetric settings are unclear. The association with postpartum PTSD severity presents a compelling case for ACEs screening [107], particularly among historically marginalized populations who are more vulnerable to the impact of ACEs [108]. There is reticence in primary care settings to screen for ACEs without immediate mental health support in the event of a positive screen [109]. While knowledge of a positive ACE history can assist front-line obstetric providers in individualizing care and delivery plans, providers and practices need support and guidance to ensure that they can respond appropriately, including acknowledging and validating the impact of trauma, which can be highly therapeutic [110].

Sexual trauma, physical violence, or stalking by an intimate partner are also common, and experienced by one in three women [111]. Intimate partner violence (IPV) is defined as “a pattern of assaultive and coercive behaviors that may include inflicted physical injury, psychological abuse, sexual assault, progressive isolation, stalking, deprivation, intimidation, and threats. These behaviors are perpetrated by someone who is, was, or wishes to be involved in an intimate or dating relationship with an adult or adolescent (pg. 5).” [112] IPV is the leading cause of death among women of childbearing age, and lifetime prevalence estimates range between 19 and 66%, and 19 and 33% for physical and sexual abuse committed by an intimate partner among women seeking healthcare [111]. IPV has lasting physical and emotional health consequences, including post-traumatic stress disorder (PTSD). ACOG recommends that providers screen women for IPV at preconception, once a trimester, and once in the postpartum period (Table 1) [27]. Despite the negative impact and recommendations to screen, comprehensive data on IPV screening rates, or approaches for how to obstetric settings should respond to positive screens are not available.

PTSD describes the cognitive, affective, and behavioral dysregulation that occurs after a traumatic experience. In obstetric populations, this typically occurs due to (1) experiencing childbirth, which is in and of itself can be traumatic, or (2) an aggravation of past trauma or exacerbation of ongoing PTSD during delivery and prenatal care [113]. Perinatal PTSD is associated with negative maternal physical and mental health outcomes, including disruption in mother-infant bonding [114, 115•], and negative child outcomes [116]. Over half of women (54%) experience childbirth as traumatic [117], which increases the risk for subsequent depression and anxiety [114]. Postpartum PTSD affects 3.1% of new mothers in community samples and 15.7% of psychosocial high-risk populations [118].

Several trauma screening tools have been validated for use in obstetric settings (Table 2), and while specific screening recommendations do not currently exist, ACOG encourages providers to consider the possibility of postpartum PTSD during the comprehensive postpartum visit [119]. Screeners that specifically focus on birth trauma also exist, however are not yet validated against clinical interviews [120].

Screening practices for PTSD are largely undefined and screening for PTSD is inconsistently implemented, making precise rates unavailable [120]. Screening can also help identify women or other perinatal individuals with subsyndromal PTSD symptoms or traumatic stress that may get misdiagnosed as depression [121]. Screening for PTSD risk factors during pregnancy may also be helpful because such risk factors predict postpartum PTSD symptoms [122]. When screening for birth trauma, it is important to consider that symptoms may not manifest until after the 6-week, postpartum obstetric visit [98]. Given this, pediatric providers are also well positioned to detect and address birth trauma and PTSD [123].

As with other illnesses, screening is only one part of the addressing trauma and PTSD and need to be done in conjunction with systematic response to positive screens and a trauma-responsive approach to obstetric care [124]. While there is a dearth of data available, examples of interventions that may facilitate screening and an adequate response to screening include conducting staff-wide trauma education, adopting trauma-informed care practices for physical exams and operative care, and adhering to the SAMHSA four Rs: realize, recognize, respond, and resist re-traumatization [125].

Substance Use Disorders

Though pregnancy and lactation can be protective against substance use disorders in some obstetric populations [126], many women are at increased risk for substance use or misuse during the perinatal period [127], especially those with mood or anxiety disorders. The effects of substance use during pregnancy and the postpartum period vary by substance, with

outcomes including low birth weight and prematurity, physical malformations, and neurological damage [65, 128, 129]. Depending upon the region, substance use has been determined to be the cause of 8–22% of maternal deaths [129, 130]. Substance use during pregnancy is a marker of a substance use disorder [131]. The most prevalent substances used in pregnancy are cigarettes (10.0%) and alcohol (8.3%), followed by illicit drugs (6.3%) [13]. Substance use disorders in women and other perinatal individuals are generally not well-defined, as any use may be considered “misuse” during pregnancy and lactation [30•].

Many relevant professional organizations recommend universally screening of perinatal women for substance use with validated instruments (Table 1) [128, 129, 132, 133]. Ideally, this should occur at the initial obstetric visit. If positive, screening should be continued at subsequent visits in pregnancy and postpartum and biological testing should be considered only with the patient’s consent and in compliance with state mandates [30•]. However, using urine or blood specimens as the primary method for screening is not recommended because of a multitude of reasons, including the risks of false positives, the potential ramifications of a positive test per state laws, and their inability to provide other important information such as use patterns and severity [134].

Using validated non-biologic screening tools in perinatal individuals to detect substance use disorders helps to identify risks and allow for appropriate management without some of the downsides in using biological specimen testing. Recommended tools include the 4Ps or the 4Ps Plus [66] and the NIDA Quick Screen [135], both of which are short self-report tools (Table 2). Others include the substance use risk profile-pregnancy (SURP-P) [67] and the CRAFFT screening tool [68], with six questions stemming from the acrostic title. The CRAFFT was developed for use in adolescents and has demonstrated excellent predictive value in young pregnant women [136].

There is little evidence to estimate the rates at which perinatal individuals are being screened for substance use during pregnancy or postpartum, despite the recommendations. Screening for substance use disorders among the general, non-obstetric population is on the rise, given their prevalence, and this increase in screening exposure may be helpful in decreasing stigmatization of substance use disorders. However, screening in perinatal individuals often comes with added complications—providers are often hesitant to screen due to the potential ramifications and reporting requirements [134, 137]. Reporting requirements often disproportionately harm those that use illicit substances over others like tobacco, regardless of their prevalence or potential for harm to the fetus [134]. Therefore, given the importance of screening to detect perinatal individuals at risk, it is imperative to educate our front-line obstetric providers on this topic and help them to work with patients and be transparent through the screening process.

Similarly, though there is ample evidence on the relative safety of medication treatment for substance use disorders (e.g., buprenorphine vs. methadone for opioid use disorders) [138], little information is available on how providers should ensure perinatal individuals access evidence-based treatment and follow-up. However, providers that care for perinatal populations are increasingly prescribing treatments for substance use disorders themselves [139]. Thus, understanding how best to help front-line obstetric providers connect their perinatal patients to care is an area in critical need of more empirical evaluation.

Social Determinants of Health

It is critical to also consider factors that impact mental health treatment participation and effectiveness. These include environmental and societal factors that may interfere with an ability to access healthcare, referred to as social determinants of health (SDoH). All perinatal mental health and substance use disorders occur within the context of SDoH. Poor SDoH are associated with poorer mental health outcomes [140], preterm birth [141] and maternal and fetal mortality [142], especially among adolescent mothers [143]. SDoH are inextricably linked to racial and ethnic health disparities with respect to fetus, neonate, and infant mortality [144]. SDoH also appear to limit overall engagement in prenatal care among women of color [145].

Recognizing the importance of SDoH, the American College of Obstetricians and Gynecologists (ACOG) and others recommend screening for and addressing SDoH during obstetric care (Table 1) [14•]. However, a gold standard screening tool(s) for SDoH does not exist [146] and there are no established recommendations for how and when to screen for SDoH. While there is also dearth of data on screening rates for SDoH in obstetrics settings, individual obstetric practices have been able to implement some form of inquiry [147, 148].

Healthcare providers often consider addressing SDoH beyond their purview and that screening is inefficient and potentially unethical in the absence of robust social services to address them [149]. While screening for and addressing SDoH could facilitate engagement in mental health care following a positive screen [150], providers and practices need support and guidance to ensure that can respond appropriately.

Conclusions

Major progress has been made toward addressing mental health and substance use disorders in women and other perinatal individuals. For example, screening for perinatal depression has increased and is becoming the standard of

care. However, despite their prevalence and negative impact, screening for other mental health and substance use disorders lag behind. While numerous professional societies and policy makers recommend screening for depression [20•, 21•, 22, 23•], recommendations for screening for other perinatal mental health and substance use disorders are either nonexistent, less prescriptive or not consistently implemented in obstetric settings.

For example, while the Council on Patient Safety in Women's Health Care's Maternal Mental Health Safety Bundle recommends that all providers caring for perinatal women screen for bipolar disorder prior to prescribing psychiatric medications [25••], there is a dearth of data on the extent to which this is implemented, suggesting that it is rarely done. As obstetric practices are increasingly screening for and treating depression, screening for bipolar disorder needs to be incorporated because unknowingly treating bipolar disorder like unipolar depression can have negative consequences. In addition, when obstetric practices do screen for bipolar disorder, they need guidance and/or tools for how to respond to a positive screen.

Similarly, despite being one of the most prevalent illnesses during the perinatal time period and emerging professional society recommendations suggest screening for anxiety and related disorders in obstetric settings [97], there is far less information on anxiety screening rates and guidance for how to respond to a positive screen as compared to depression. Perhaps because of this, front-line obstetric providers do not seem to be consistently screening for anxiety and related disorders.

We cannot adequately address mental health or substance use disorders without considering and addressing ACEs, IPV, trauma, and related conditions. The association of ACEs with postpartum PTSD severity supports the importance of detecting and addressing ACEs in obstetric settings [107], particularly among women and other perinatal individuals of color or cultural minorities and/or who are marginalized and more vulnerable to the impact of ACEs [108]. Given the high prevalence rates and negative impact of perinatal PTSD, screening is critical [115•]. Screening needs to be followed by adequate response to a positive screen, which may mitigate PTSD risks factors' negative impact of traumatic birth [113].

Substance use disorders in women and other perinatal individuals have many ramifications. Screening for substance use disorders is consistently supported by professional society recommendations and is beginning to occur. It can identify patients in need of counseling and psychosocial interventions, treatment, and further care with goals of mitigating longitudinal risks. Additionally, identification and treatment of substance use has implications for postpartum medical care (e.g., pain management) [30•, 151].

SDoH are inextricably linked to racial and ethnic health disparities with respect to fetus, neonate, and infant mortality [144]. Specifically, poor SDoH are associated with low engagement in prenatal care among women of color [145]. Screening for SDoH may help illuminate factors contributing to health disparities and inequities as they relate to screening and subsequent assessment and treatment. Addressing SDoH is uniquely challenging because they have not historically, nor are currently and consistently, included in the traditional medical model. Future studies need to address health disparities inequities related to screening and to ensure that all populations are screened for perinatal mental health and substance use disorders and that positive screens are responded to with a trauma responsive and culturally humble approach [152].

While screening is important, it is only the first step in the perinatal mental health care pathway [80]. Thus, it must be in done within systems to ensure perinatal individuals are referred for and participate in further treatment. Evidence-based approaches for integrating depression care into obstetrics settings are being developed and tested [42•, 80] and evaluated via comparative effectiveness trials [42•, 153–156]. We need similar approaches and studies to address other perinatal mental health and substance use disorders, and in the context of SDoH.

The studies summarized in this review only reported on women and none noted whether other perinatal individuals were included. Recognizing that not all pregnant and postpartum individuals are women, research studies and clinical guidelines and recommendations should explicitly state the population studied or represented. In addition, to our knowledge, all the screening tools mentioned are validated in perinatal women only and not the expanded definition of the perinatal population that includes other perinatal persons.

There is also a dearth of data examining the extent to which screening tools are valid among other historically marginalized populations. For example, further research is needed to assess validity of screens among women of color and low socioeconomic status. We also need to develop and test approaches to implementing screening and responses to screens among women and other perinatal individuals of color, of low socioeconomic status and gender diverse populations. Given that these communities are disproportionately impacted by the very illnesses that we are screening for, we need to ensure that we are adequately detecting perinatal mental health and substance use disorders among them.

To truly address maternal mental health, we need to move beyond the focus solely on depression and address other mental health and substance use disorders and the context in which they occur. In doing so, we can harness the opportunity to proactively detect, assess, and treat perinatal mental health and substance use disorders, carrying the potential to impact families and generations to come.

Compliance with Ethical Standards

Conflict of Interest Grace A. Masters and Aaron L. Bergman declare no potential conflicts of interest.

Nancy Byatt has served on past advisory boards, as a past consultant, and past speaker for Sage Therapeutics or their agents. She has served as a past council member for Gerson Leghman Group, as a past consultant for Ovia Health, and is a speaker and a steering committee for Medscape, has received honoraria from Miller Medical Communications and Mathematica, and is the Medical Director of MCPAP for Moms and the Executive Director of Lifeline4Moms.

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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.

References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
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