Substance Abuse and Rehabilitation

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REVIEW

Interventions to Support Engagement in Addiction Care Postpartum: Principles and Pitfalls

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Abstract: There is a fundamental disconnect between the optimal management of addiction in general and care delivery in pregnancy and postpartum. Addiction is a chronic condition requiring some degree of management across the life course. Yet, in the US, reproductive care is episodic and centers more on pregnancy than at other stages of the reproductive life course. Pregnancy is prioritized in access to insurance as almost all pregnant people are Medicaid eligible but access ends at varying points postpartum. This results in a structural mismatch: the episodic management of the chronic condition of addiction only within gestational periods. Though people with substance use disorder (SUD) may access care in pregnancy, treatment attrition is common postpartum. Postpartum is a time of increased vulnerabilities where insurance churn and newborn caretaking responsibilities collide in a context of care withdrawal from the health system and health providers. In part in consequence, return to use, SUD recurrence, overdose, and overdose death are more common postpartum than in pregnancy, and drug deaths have become a leading cause of maternal deaths in the US. This review addresses interventions to support engagement in addiction care postpartum. We begin with a scoping review of model programs and evidence-informed interventions that have been shown to increase continuation of care postpartum. We then explore the realities of contemporary care through a review of clinical and ethical principles, with particular attention to harm reduction. We conclude with suggestions of strategies (clinical, research, and policy) to improve care postpartum and highlight potential pitfalls in the uptake of evidence-based and person-centered services.

Keywords: pregnancy, substance use disorder, harm reduction, medication for OUD

Introduction

There is a fundamental disconnect between the optimal management of addiction in general and care delivery in pregnancy and postpartum. Addiction is a chronic condition requiring some degree of management across the life course. Yet, in the US, reproductive care is episodic and centers more on pregnancy than at other stages of the reproductive life course. Pregnancy is prioritized in access to insurance as almost all pregnant people are Medicaid eligible but access ends at varying points postpartum. This results in a structural mismatch: the episodic management of the chronic condition of addiction only within gestational periods.

Pregnancy is often an opportunity for assessment and treatment initiation for addiction. Access to health insurance coupled with both internal and external motivation for behavior change provides the context for behavioral health care. In contrast, the postpartum period is a time of care withdrawal, newborn caretaking responsibilities, insurance churn, and greater social isolation.[1,2] Postpartum is a time of increased vulnerabilities, care discontinuation, return to use, addiction recurrence, overdose, and overdose death. Overdose is one of the primary drivers of the public health crisis of maternal deaths in the United States, and almost all of these perinatal deaths occur postpartum. Interventions to support engagement in addiction care postpartum are needed to address the unique barriers to treatment access and retention postpartum.

Received: 29 April 2023
Accepted: 27 June 2023
Published: 3 July 2023

This review addresses interventions to support engagement in addiction care postpartum. We begin with a description of model programs and evidence-informed interventions that have been shown to increase continuation of care postpartum. We then explore the realities of contemporary care through a review of clinical and ethical principles, with particular attention to the principles of harm reduction including both human rights and social justice. We conclude with suggestions of strategies (clinical, research, and policy) to improve care postpartum and highlight potential pitfalls in the uptake of evidence-based and person-centered services. Overall, we highlight principles of care for this important population and touch on pitfalls in the implementation of continuing care.

A note on language: language has power, and we are conscientiously using terminology that is both evidence-informed and person-centered. People who use drugs, especially women and other people capable of pregnancy, experience discrimination, a discrimination that is visible in language. Whether intentional or not, the words used to describe pregnant people who use drugs convey and compound prejudice. Therefore, the language of this review emphasizes treatment and recovery and, we hope, upholds the dignity of all people including those who are pregnant or parenting.

Materials and Methods

The search strategy for this narrative review consisted of the following terms: ((substance use disorder OR addiction OR opioid use disorder) AND (postpartum)) AND (adherence OR engagement). PubMed was searched with no date restrictions but limited to English language only. Inclusion criteria were articles that focused on interventions that addressed addiction care in the postpartum period. Articles outside the scope of addiction and postpartum were not included. For example, articles that measured intimate partner violence, smoking cessation, postpartum depression, contraception use, or methamphetamine use among individuals with addiction during pregnancy or postpartum were not included. Additionally, articles that only focused on experiences with treatment during pregnancy were not included. However, articles focused on interventions for individuals with addiction during pregnancy were included if they also tracked outcomes through postpartum. Articles that described treatment adherence postpartum or postpartum care attendance among individuals with OUD were both included.

Results

Literature Search

The search strategy resulted in 101 articles as of February 10, 2023. After the removal of duplicates, 41 articles met the inclusion criteria and are listed in the Supplemental Appendix. These articles were broken down into four main categories: service delivery, provider or patient experience, patient outcomes, and review articles. Service delivery (n = 18) consists of new models of care or interventions to treat postpartum individuals with addiction. Provider or patient experience (n = 12) includes studies that detail patient or provider perspectives of the treatment or other services they receive for their substance use during the postpartum period. Patient outcomes (n = 7) mostly consisted of studies that describe correlations between postpartum treatment receipt and various health-care outcomes. Review articles (n = 4) consist of articles which describe care models or clinical guidelines for treating or managing addiction during the postpartum period. The included articles represented diverse study designs. These included case studies (n = 3), chart reviews (n = 3), cohort studies (n = 3), cross sectional (n = 1), implementation studies (n = 1), prospective studies (n = 1), qualitative reviews (n = 8), qualitative studies (n = 8), randomized control or clinical trial (n = 2), and retrospective studies (n = 6). Many of the studies (approximately 30%) were qualitative, either qualitative studies such as semi-structured interviews or focus groups with postpartum individuals, or qualitative reviews of the appropriate literature.

Overall, our search of interventions to support engagement in addiction care postpartum yielded articles that primarily were organized into two distinct thematic domains: medications for addiction treatment, specifically medications for opioid use disorder (MOUD) and collaborative care models, including team-based care. In addition, we found a limited literature that explored the application of harm reduction principles and practices to pregnant and postpartum people.

Discussion

Medications for Opioid Use Disorder

Of the three FDA-approved medications for OUD (naltrexone, buprenorphine, and methadone), only buprenorphine and methadone have been comprehensively studied for efficacy among pregnant people with OUD and are considered the evidence-based standard of treatment for the management of OUD during pregnancy.[3–5] Naltrexone is not recommended for initiation during pregnancy,[6] however continuation (ie, the individual was using naltrexone prior to pregnancy) could be considered to avoid destabilization and to promote recovery.[7]

According to the American College of Obstetricians and Gynecologists (ACOG) and the American Society of Addiction Medicine (ASAM), quality treatment of OUD during pregnancy begins with a person-centered education regarding medication and emphasizes the individual's choice of receiving these medications[8] and empowering individuals to make decisions about what combination of services best supports their recovery.[9] MOUD should be initiated regardless of gestational age[10] and should be included as part of evidence-based treatment regardless of the age of the pregnant person.[11,12]

Medically supervised withdrawal, or detoxification, is not recommended either in pregnancy or postpartum. Compared to MOUD, medically supervised withdrawal in pregnancy is associated with care attrition, return to use, OUD recurrence, and no difference in neonatal abstinence syndrome (NAS).[13] Further, NAS is a temporary condition and MOUD exposure during pregnancy has not been associated with problematic developmental outcomes for infants.[14] In contrast, MOUD is associated with increased treatment retention and improved social functioning in pregnancy and postpartum.[15,16] The earlier MOUD is initiated in pregnancy, the greater the likelihood of postpartum continuation.[17]

The normal physiological changes of pregnancy often necessitate increases in MOUD dose and frequency of dose, especially as pregnancy progresses.[5,18,19] Pregnant people become "rapid metabolizers" of methadone and therefore split dosing is preferable to simply increasing the daily dose.[20] The clinical use of serum methadone/metabolite ratios has been proposed to assist in decision-making around timing of split dosing.[21] There is no clinical guidance to navigate MOUD decreases postpartum among people who had an increase in pregnancy. In fact, we did not identify a single article that investigated MOUD dose or frequency changes in the postpartum period. Medication dose and timing decisions should therefore be individualized. Rapid, arbitrary, or universal dose reductions are likely harmful.

Despite medical recognition that MOUD is the gold standard for managing OUD in pregnancy, it is severely underutilized.[22,23] Fewer than one-quarter of pregnant individuals with OUD receive any substance use disorder treatment and even fewer receive MOUD.[22,24] Postpartum, MOUD utilization decreases further.[25] The short-sighted view of OUD as an acute disease during pregnancy, rather than viewing interventions in pregnancy as an opportunity for long-term recovery, has contributed to OUD being a leading cause of pregnancy-related mortality in the US.[10]

Overall, barriers to access and receipt of MOUD are the main reason for MOUD underutilization, barriers which only increase postpartum. One barrier is a lack of awareness among health-care providers that MOUD is safe and effective in pregnancy and during breastfeeding.[26] In fact, breastfeeding while receiving MOUD can help reduce withdrawal symptoms for infants with neonatal opioid withdrawal though providers often provide conflicting information about breastfeeding safety.[27] Logistical challenges, such as lack of childcare and transportation,[28] coupled with a shortage of treatment programs that are family-friendly,[29] an emerging federal policy priority[30] further reduces MOUD access.

Stigma and discrimination toward people with addiction are common and are intensified for people who are pregnant and parenting. Stigma affects treatment receipt at the individual level (via internalized stigma), the interpersonal level (when provided suboptimal care by their provider),[31,32] as well as at the structural level (when people are turned away from the clinic by the provider because they are pregnant).[33] While federal policy has prioritized treatment access in pregnancy, some clinics do not act in accordance with this guidance. Further, state policies that penalize substance use during pregnancy discourage people from treatment initiation and continuation for the legitimate fear of legal consequences, such as losing child custody.[34]

Models of Care

Medications are important, but the environment of care delivery is critical to keep people engaged through the postpartum period. Our scoping review identified interventions that employed collaborative care and integrated care

models to support engagement in addiction care postpartum. Integrated team-based care models co-locate specialized treatment to reduce access barriers.[9] Collaborative care models organize care for people with multiple specialists involved in their treatment plan[35] in a stepped-care manner without specialists necessarily being located in the same space.

Integrated Care Model

Integrated care models successfully improve outcomes for people with chronic diseases, such as HIV.[36,37] Through co-locating interventions or specialists in one clinic, people can more easily access services and communication occurs more effectively and efficiently improving the care experience. Integrated care models which co-locate obstetrics and addiction care decrease preterm birth rates and increase prenatal care engagement.[38] Integrated care models may also increase retention rates for people receiving treatment for opioid use disorder.[9] In a cohort of rural pregnant women with opioid use disorder, integrated care delivery was associated with lower risks of positive maternal urine toxicology screen at birth.[39]

Collaborative Care Model

In a collaborative care approach, all patients are screened for conditions requiring specialized care (eg, addiction), but first-line treatments are offered within the primary or obstetric care office setting. Care coordinators facilitate initial treatment planning, brief interventions, symptom monitoring, and implementation of stepped-care recommendations. Initial brief intervention typically begins with the provision of psychoeducation and, if indicated, medication. If the patient does not respond to the initial line of treatment, care is augmented,[40] and patients who need specialized treatment are stepped up to a higher level of care.[41] Very often the primary care physician can implement medication changes, thereby efficiently reserving specialty care for those patients who do not respond to earlier steps in the treatment algorithm. Proposed benefits of CC include patient-centered care, receipt of behavioral and physical health care in the same familiar setting, and improved clinical outcomes.

Collaborative care is effective because it is personalized and titrates the delivery of specialized health care to the treatment intensity required for a given patient. This feature is especially useful before and after birth. Pregnant and postpartum people have unique challenges, such as the physical and mental demands of pregnancy and caring for a new infant, which can change relationships and employment status. For pregnant people, collaborative care models typically integrate behavioral health care with pre- and post-partum care[42] in the obstetric practice. Connection with collaborative care support in the post-partum period is associated with breastfeeding rates twice that of groups not connected with collaborative care.[43,44] The long-term prevention and engagement in post-partum depression and anxiety treatment is also improved with adherence to a collaborative care model.[45]

In both integrated care and collaborative care models, care coordination is an activity rather than a service. Nurses in all settings are responsible for care coordination, and especially for people who use drugs, their role is vital in ensuring access to treatment and support. Integrated care means that health-care professionals across the birthing continuum promote recovery-based services. Nurses based in outpatient obstetric or inpatient obstetric and newborn services can work collaboratively to ensure transition to primary care and other behavioral health service providers to address the holistic needs of individuals seeking care. Table 1 summarizes specific collaborative care models that demonstrated improved engagement in care postpartum. Team-Based Care.

Integrated and collaborative care models are only as successful as the multidisciplinary team surrounding the model. Team-based care has successfully implemented patient safety bundles through collaborative learning, quality improvement support, and rapid response data review.[49,50] Team-based care can lead to health system-wide changes via shared decision-making led by clinical champions and lead coordinators.

Shared decision-making, defined as supporting the patient in choosing the best treatment,[51] is particularly applicable to pregnant and postpartum people with substance use disorders. Guille et al[52] developed a shared decision-making tool to assist providers and patients in addressing postpartum treatment continuation decisions. Postpartum people caring for infants have concerns about medications and breastfeeding, experience stigma, and often have unstable insurance coverage. A decision-making tool can aid in presenting the same evidence-based information to both the patient and

Table 1 Collaborative Care Interventions to Support Engagement in Addiction Care Postpartum

Authors	Model	Conclusions
Hensel et al (2022)[46]	Clinic for Acceptance Recovery and Empowerment (CARE)	40 of 42 CARE patients (95%) were exclusively breastfeeding at discharge and were significantly more likely to be breastfeeding at discharge compared to control patients (adjusted relative risk (aRR): 1.28, 95% confidence interval [CI]: 1.05–1.55).
Hodgins et al (2019)[47]	Collaborative Outreach and Adaptable Care at Hallmark Health (COACHH)	Qualitative interviews demonstrated that the 20 patients served over 18 months felt an increase in trust with their provider
Mittal and Suzuki (2017)[48]	Reproductive Psychiatry Consultation Service (RPCS)	14 (87.5%) post-partum people continued or resumed treatment with buprenorphine at discharge, and 13 (81.3%) were referred to a community prescriber.

all providers involved. Following the shared decision-making process, 95% (21 of 22) of post-partum patients reported making an informed decision to either continue (64%, 14 of 22) or taper (36%, 8 of 22) buprenorphine or methadone. Post-partum people in the study felt they were provided with adequate medical information (96%, 21 of 22) and understood their treatment choices (91%, 20 of 22).[52]

Harm Reduction and Postpartum

Harm reduction is an essential component of health-care practice especially postpartum. The Harm Reduction Coalition defines harm reduction as a "set of practical strategies and ideas aimed at reducing negative consequences associated with drug use" and "a movement for social justice built on a belief in, and respect for, the rights of people who use drugs".[53] For people in the postpartum period, harm reduction includes access to proven strategies that reduce the likelihood of overdose and infectious disease transmission for people who use drugs.[54] However, within harm reduction efforts, systemic barriers hinder the accessibility of harm reduction services for this population. For example, access to safer injection supplies and naloxone are life preserving resources for people who use drugs[55] but the demands of caring for a newborn may reduce the likelihood that a parent would have the capacity to access a syringe exchange program, or they may encounter stigma for asking for support obtaining these resources.[56] In instances where a child has been removed from care, abstinence requirements sanctioned by child welfare promote concealment of use and decrease the likelihood of engagement with services.[57] Moreover, the experience of termination of parental rights signifies permanent separation and intense feelings of grief and loss which neither harm reduction programs nor medical care are equipped to support.[58,59] While the intention of accessibility to harm reduction services is never to promote use, the nature of the disease of addiction means that there are people who find themselves in need of harm reduction resources postpartum but experience greater barriers to participation. An intentional examination of these barriers with aligned solutions is a first step toward reducing harms associated with postpartum substance use. Table 2 provides an overview of evidence-based harm reduction strategies and potential barriers to access for people who use drugs during the postpartum period as well as potential strategies to ameliorate these barriers.

From a solutions perspective, for parents at risk of return to use who are caring for an infant or other children, there is a need to promote awareness of risk reducing behaviors such as never using alone.[60] Promoting and providing access to phone or web-based services that call emergency services if an individual does not respond could be one strategy to prevent death among people who may otherwise choose to use while caring for a child. Additionally, offering voluntary respite promotes family unity and community which may ultimately maximize child safety as well as parental well-being.[71]

Harm reduction strategies generally focus on the individual, however there are structural inequities which impinge upon people's ability to engage in care and recovery. For example, the lack of universal paid family leave means that people who are economically under resourced must work even within days after giving birth in order to survive.[72,73] Similarly, the termination of Medicaid within 6 weeks of birth in some states is often structurally incompatible with the life course management of chronic conditions. Among adults, the connection of substance use and economic disadvantage is well documented, and

Table 2 Barriers and Strategies of Evidence-Based Harm Reduction Strategies to Support Engagement in Addiction Care Postpartum

Evidence-Based Harm Reduction Strategy[54,60]	Potential Barriers to Access (SU or Postpartum Related)	Strategies to Reach People During Postpartum
Naloxone	• People caring for an infant may experience stigma seeking naloxone at a pharmacy or syringe service program • Family medicine and obstetricians under-prescribe naloxone • Home visiting programs are not often equipped with access to naloxone or the ability to provide it to their clients • Education on the higher potential for overdose in the event of return to use is not routinely provided[61,62]	• Prescribe and provide naloxone at the time of delivery and at postpartum care visits to anyone who has used drugs associated with overdose in the past year (eg, fentanyl, heroin, methamphetamine) • Provide naloxone training to home visitors and prepare them to provide training to people who live with someone at risk for overdose • Improve access to peer doulas who have awareness of specialized considerations at the intersection of postpartum and substance use disorder
Safer use supplies (eg, injection, smoking, booty bumping)/ Non-injecting routes of administration	• Women often rely on partners for access to supplies and injection[63,64]	• Provide protected space to access supplies and safer use practices education specific to women and other previously pregnant people
Safe use sites	• The safe use sites that do exist do not offer support navigating childcare considerations[65,66] • Safe use sites may need to be aware of postpartum health risks to alert emergency services if needed	• Improve access to safe, affordable, and low barrier, childcare for people who use drugs to reduce the likelihood of unsafe use and promote child well-being and safety • Provide training around postpartum-specific overdose risks and overdose intervention to safe injection site workers
Sexually transmitted infections screening and treatment	• Insurance coverage barriers during postpartum[67,68] • Admitting substance use or multiple partners with a child in or not in care may jeopardize custody • Screening is not part of routine postpartum appointments and postpartum appointments are not well attended by people who use drugs	• Make postpartum care more accessible and more frequent that the ACOG recommended two visits through mobile outreach to people who use drugs and include regular low barrier STI testing[69]
Access to pre-exposure prophylaxis (PrEP)	• Uptake of PrEP is generally low in cis-gender women who inject drugs	• Provide PrEP education and access at prenatal and postpartum visits to women who use drugs and are at high risk of HIV infection
Outreach (certified peer and network based)	• Peers often lack specialized training in postpartum care needs • Network-based strategies may be prone to in-group stigma against people who have been recently pregnant and are using drugs[70]	• Provide harm-reduction training and education specific to postpartum for certified and network-based peers through community capacity building
Decriminalization and legalization	• Despite decriminalization, "unfit mother" narratives continue into postpartum and may result in punitive consequences within the child welfare system	• Institute specific systems of support and protection (eg, specifying the actual evidence-based potential harms of certain substances rather than allowing arbitrary decision-making, putting access to support before child removal)

policies that provide systematic support to give individuals the time, financial resources, and social support to care for a newborn are necessary to sustain reduced use patterns.[74,75]

Harm reduction goes beyond the provision of supplies and education of health promotion strategies. Hawk et al[76] outline a set of harm reduction principles for health-care settings that include humanism, pragmatism, individualism,

autonomy, incrementalism, and accountability without termination. These principles are revised and applied to addiction care during the postpartum period in Table 3. Addiction services during postpartum often lack a harm reduction perspective, emphasizing abstinence as the only pathway to successful parenting.[77,78] While retaining or regaining

Table 3 Harm Reduction Principles and Postpartum Applications

Harm Reduction Principles	Postpartum Applications
Humanism Respect each person, seeking understanding for why a person makes the choices they do, rather than making moral judgements, holding a grudge, or non-acceptance of patient choices	• Ask the individual to describe their own health goals, providing a menu of options related to postpartum health • Identify individual drivers of substance use and help support the person in addressing those challenges, without communicating a need to stop using substances or using fear-based language around child removal and child safety
Pragmatism There is no such thing as "perfect" health behaviors, behavior happens in social and cultural context, choosing behaviors that might seem "unhealthy" may have other health benefits not realized the current systems of care	• Emphasize individual strengths and co-identify reasons for engaging in "unhealthy" behaviors that are conferring benefit for the individual (eg, continuing to spend time with a partner who the court has ordered them to avoid) • Identify potential risks associated with use and provide support to reduce negative health outcomes associated with risk; this may include coming up with safer use plans together with the individual • Provide reproductive health counseling in line with a person's own goals related to contraception • Help facilitate access to regular STI and pregnancy screening if a person is unable or uninterested in using barrier methods, is engaging in sex work, or otherwise has multiple partners
Individualism Each person has unique strengths and challenges which requires tailored intervention options	• Provide health systems navigation support through peer doula support or another paraprofessional with knowledge of both addiction and postpartum[83–86] • Identify opportunities that build on individual strengths and create opportunity for good failure through supportive systems (eg, identifying a safe person to provide childcare that a person can call if they plan to use)[87] • Provide actual support around infant sleep, rather than brief education, such as volunteers or community health workers to provide overnight support who are knowledgeable about safe sleep implementation[88]
Autonomy Providers offer education and patients make decisions; providers may offer their opinion after asking for permission to offer advice	• Ask for permission before offering information about substance use treatment, contraception, and other resources • Provide information that is patient centered (eg, an easy-to-read handout on local harm reduction services with visuals to improve understanding)[89]
Incrementalism Changes take time, even years, and steps away from a person's goal may also happen, it's important to celebrate the small changes	• Center the provider's goal on having and maintaining a relationship, rather than on a specific agenda[90] • Check-in frequently and provide support to help people even with small tasks like completing necessary forms to access social benefits and provide praise when those things are accomplished
Accountability without termination No one is ever "fired" for not meeting their own goals, people have the right to make their own choices, even if those choices might cause them harm. A provider's role is to help them identify their goals and make sense of the consequences that naturally follow.	• Never "fire" or stop working with someone who is not making the "right" progress related to their use, use behaviors, or postpartum health • Connect choices with consequences and provide opportunities to try again (eg, if a person decides to leave treatment with their newborn, allow them to come back if they would like or provide them with a safe place to receive support that is better aligned with their goals)

child custody is a significant motivator for many,[79] the emphasis on abstinence is problematic. Specifically, using the evidence-based definition of addiction as a chronic and recurring disorder, we know that return to use occurs frequently, albeit not always. This means that our systems must be designed to provide support through episodes of return to use and recognize that punishment deters individuals from engagement with care.[80–82]

Conclusion

This review highlights the vulnerabilities that emerge postpartum for people with OUD. The episodic nature of care delivery for pregnancy, which is reflected in the episodic access to health insurance, complicates chronic disease management. The structure of health care at the intersection of reproductive and behavioral health abandons people postpartum, an abandonment that can be fatal for people with OUD. Although MOUD is the standard-of-care and methadone and buprenorphine are the safest and most effective medications for OUD in pregnancy, access in inequitable and MOUD continuation lags postpartum. Interventions to support engagement in addiction care postpartum exist but are under-utilized. Specifically, the expansion of collaborative care models from pregnancy through early parenting is needed. Future research should focus on the integration of team-based care services into addiction treatment for pregnant and postpartum people and explore sustainability from a chronic disease management perspective. From a harm reduction perspective, harm reduction includes both practical strategies and principles to ultimately improve care engagement and health outcomes. These strategies and principles are sparsely implemented and have the potential to transform care during this period, though more evidence is needed to clarify appropriate applications. Policy priorities include expansion and continuation of health insurance coverage through the postpartum period and the rolling back of punitive policies which force people away from care.

Acknowledgement

This study was supported by NIDA award - P50DA048756 (C Cioffi).

Disclosure

The authors report no conflicts of interest in this work.

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