PATIENT PERSPECTIVES ON BARRIERS AND FACILITATORS TO MENTAL HEALTH SUPPORT AFTER A TRAUMATIC BIRTH

A Master's Thesis Presented

By

WANLU XU

Submitted to the Faculty of the University of Massachusetts Graduate School of Biomedical Sciences, Worcester in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

March 31, 2021

Clinical Investigation

PATIENT PERSPECTIVES ON BARRIERS AND FACILITATORS TO MENTAL HEALTH SUPPORT AFTER A TRAUMATIC BIRTH

A Master's Thesis Presented

By

WANLU (LULU) XU

This work was undertaken in the Graduate School of Biomedical Sciences

Clinical and Population Health Research

Under the mentorship of

Nancy Byatt, DO, MS, MBA, Thesis Advisor

Tiffany A. Moore Simas, MD, MPH, MEd, Member of Committee

Christine M. Ulbricht, PhD, MPH, Chair of Committee

Mary Ellen Lane PhD,

Dean of the Graduate School of Biomedical Sciences

Master of Science in Clinical Investigation

March 31, 2021

ACKNOWLEDGEMENTS

First, I would like to acknowledge my research mentor, Dr. Nancy Byatt, for her steadfast guidance and support of my research endeavors. She was essential to the development of this project starting from my first year of medical school and has been an inspirational mentor over the last few years. Next, I would like to express my sincere gratitude to the members of my Thesis Research Advisory Committee—Dr. Tiffany Moore Simas, who was also integral to the design and implementation of this project and has been a role model for initiating changes to obstetric settings, and Dr. Christine Ulbricht, for her astute insight and expeditious feedback. I would also like to express gratitude to Dr. Rob Goldberg for his encouragement, assurance, and support throughout this year. I would additionally like to acknowledge Esther Boama-Nyarko and Dr. Grace Masters for their time and efforts spent double-coding with me which was an integral part of my qualitative analysis. Finally, I would like to thank Dr. Kate Lapane, Kelley Baron, MSCI faculty and MSCI/CPHR classmates for fostering a collaborative and supportive learning environment throughout this year.

ABSTRACT

Background

Up to 34% of perinatal individuals experience childbirth as traumatic. These individuals are at increased risk for developing depression, anxiety, and posttraumatic stress disorder (PTSD) after the traumatic event. The objective of this study was to elicit the perspectives of individuals with a traumatic birth experience on barriers and facilitators to receiving mental health support in the postpartum period after a traumatic delivery.

Methods

Individuals who delivered within the last three years and perceived their birth experience to be traumatic (n=32) completed an hour-long semi-structured phone interview. The interview included screening for PTSD, depression, and anxiety with validated instruments including the Posttraumatic Stress Disorder Checklist for DSM-V (PCL-5), the Patient Health Questionnaire depression scale (PHQ-8), and the Generalized Anxiety Disorder scale (GAD-7), respectively. Qualitative data was analyzed using a modified grounded theory characterizing participants' barriers and recommendations for mental health support after traumatic births.

Results

Among participants, 34.4% screened positive for PTSD, 18.8% screened positive for major depressive disorder, and 34.4% screened positive for anxiety. Qualitative themes revealed multi-level barriers involving lack of communication, education, and resources which prevented obstetric professionals from

recognizing and supporting patients' mental health needs after a traumatic birth. Recommendations from participants included that 1) obstetric professionals should acknowledge trauma experienced by any individual after childbirth, 2) providers of multiple disciplines need to be integrated into postpartum care, and 3) mental health support is needed before the ambulatory postpartum visit.

Conclusions

There are multi-level barriers toward detecting and responding to individuals' mental health needs after a traumatic birth. Obstetric professionals need to use a trauma-informed approach and proactively follow-up and assess mental health care in the postpartum period.

TABLE OF CONTENTS

Front Matter

Body Matter

Back Matter

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENT OF FUNDING SOURCES

My MSCI education was supported by a scholarship from the University of Massachusetts Medical School Center for Clinical and Translation Science (CCTS). Funding came from the National Center for Advancing Translational Sciences of the National Institutes of Health under award number UL1-TR001453.

CHAPTER I: INTRODUCTION

Birth trauma has traditionally been associated with medical interventions, medical emergencies, or severe maternal events for the birthing individual or baby.[1-4] More recently, it has been recognized that trauma is a matter of one's perception.[5] Up to 45% of perinatal individuals experience childbirth as traumatic,[6] and between 3-16% of individuals experience symptoms of post-traumatic stress disorder (PTSD) after their traumatic birth experience.[7,8] Individuals who have experienced a traumatic birth are at increased risk for developing mental health conditions such as postpartum depression and anxiety along with PTSD.[9-11] Residual impacts of the experience can also have negative effects on relationships including with the baby or partner.[12-14]

To mitigate these effects, early detection of traumatic experiences and mental health conditions is needed. In accordance with the American College of Obstetricians and Gynecologists' (ACOG) recommendations for care in the immediate postpartum period (i.e., 'the fourth trimester'), obstetric professionals should check in with the patient within the first three weeks postpartum. They should also complete a full physical, social, and psychological assessment at a comprehensive postpartum visit before 12 weeks postpartum.[15] However, mental health conditions are historically under-detected and under-treated due to a multitude of barriers.[16-19] The postpartum visit is an opportunity for a mental health assessment, but they are underutilized by patients due to numerous factors related to health inequities.[15,20,21] These circumstances present challenges for providing mental health support for individuals who may have also experienced a traumatic birth.

No specific guidance currently exists regarding evaluation for the experience of traumatic births or its potential downstream effects like PTSD in ACOG's postpartum toolkit. [15,22] There is also a paucity of evidence on the appropriate postpartum mental health support that should be provided to persons with traumatic birth. It is therefore necessary to hear from individuals who have experienced a traumatic birth regarding what they need to better support their mental health in the obstetric setting after the traumatic event.

The objective of this study was to elicit the perspectives of individuals who experienced a traumatic birth to elucidate (1) what support they did or did not receive in the obstetric setting and (2) what mental health support they would have wanted to receive. These findings can then inform interventions in obstetric settings to support individuals who have experienced a traumatic birth.

CHAPTER II: METHODS

Study Participants and Settings

The study population consisted of individuals who had an obstetric delivery within the last three years, perceived their birth experience to be “difficult or traumatic,” and affected their emotional health. We used purposive sampling with a snowball approach. We recruited through investigators’ professional networks in the United States via social media and through national postpartum-specific support networks such as Postpartum Support International. Four rounds of study recruitment postings were sent between August 2018 and November 2020 inviting participation in a semi-structured phone interview. Later rounds of recruitment were focused on increasing the racial diversity of our study population. Individuals with interest in participating answered a study inclusion criteria questionnaire in REDCap, an encrypted and secure online survey platform.[23] Those who met inclusion criteria viewed the study fact sheet and gave informed consent by submitting their contact information. The lead investigator then contacted the interested participants by phone. After three attempts, those who did not respond were no longer actively recruited. This study was approved by the Institutional Review Board of the University of Massachusetts Medical School.

Semi-structured Telephone Interview

In-depth, hour-long semi-structured phone interviews were completed between August 2018 and December 2020 by the lead investigator. All participants reconfirmed their eligibility and gave verbal consent prior to the start of the interview. They answered seven demographic questions and six questions about their obstetric history. They were

also screened for PTSD using the Posttraumatic Stress Disorder Checklist (PCL-5) for the fifth edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5),[24] for depression with the eight-item Patient Health Questionnaire depression scale (PHQ-8),[25] and for clinically significant anxiety disorders with the Generalized Anxiety Disorder scale (GAD-7).[26] Participants then responded to probes **(Table S2.1)** regarding (1) the traumatic birth experience, (2) barriers and facilitators to mitigating its impact, (3) interactions with the clinical team, and (4) mental health support received after the traumatic experience. For participants recruited in 2020, we added a question asking how the participant may have perceived their race to impact their birth experience. Those who gave birth within a year of the emergence of COVID-19 in the United States (March 2020) were also asked how the pandemic may have affected their experience. The interviews were audio-recorded for analysis. Participants were compensated with $20 gift cards after completion of the interview.

Screening Measures

The PCL-5 is a self-reported questionnaire with 20 symptoms of PTSD according to the DSM-5. Participants are asked to rate the severity of the symptoms in the last month on a scale from 0-4 with 0 being "not at all" and 4 being "extremely." These items correspond with the DSM-5 criteria for PTSD. Individuals are considered to have a provisional diagnosis of PTSD if they score at least a 2 ("moderately") on at least: one item corresponding with intrusive symptom (questions 1–5), one item corresponding with avoidance (questions 6–7), two items corresponding with negative alterations in cognitions and mood (questions 8–14), and two items corresponding with alterations in arousal and reactivity (questions 15–20).[24] The PHQ-8 is a self-reported questionnaire

with 8 symptoms of depressive disorders. This has high concordance with the nine-item Patient Health Questionnaire depression scale (PHQ-9).[27] The ninth item in the PHQ-9 assesses suicidal ideation; as it may be difficult to provide appropriate evaluation and services if suicidal ideation was expressed, the PHQ-8 is commonly used to assess for major depressive disorder in research settings.[28] Participants are asked to rate how often they experienced symptoms in the previous 2 weeks on a scale from 0-3 with 0 being “not at all” and 3 being “nearly every day.” We used a cutoff score of 10 as screening positive for current depression symptoms.[25] The GAD-7 is a self-reported questionnaire with 7 symptoms of generalized anxiety disorder. Participants are asked to rate how often they experience symptoms in the previous 2 weeks on a scale from 0-3 with 0 being “not at all” and 3 being “nearly every day.” We used a cutoff score of 10 as screening positive for moderate anxiety symptoms.[26] These measures have all been used in prior studies in screening postpartum women.[29-31]

Data Analysis

Quantitative data was collected at the start of the phone interview. Descriptive analyses, including frequencies and score calculations of the PCL-5, PHQ-8, and GAD-7 were conducted. Our screening results from the PCL-5, PHQ-8, and GAD-7 were compared to participants’ self-reported mental health diagnoses that were new after their delivery. Analyses of categorical and continuous variables were conducted using chi-square and paired student’s t-tests, respectively. A p-value of <0.05 was considered significant.

Qualitative data was organized theoretically, using a modified grounded theory approach known as “Coding consensus, Co-occurrence, and Comparison.”[32,33] The first

author independently created an initial coding schema through open coding after conducting the interviews and reviewing all the transcripts. The coding schema was created using themes that emerged from the interviews and was partially structured within an a priori framework based upon study aims and extant literature.[34,35] The first three authors then independently reviewed five interviews using the initial coding schema, adding codes or themes as necessary. These interviews and discrepancies were discussed. Additional codes were added to create a semi-final codebook, with operational definitions for each code. The semi-final codebook was then used to independently code all the interviews. The lead study investigator coded all the interviews, and double coding was split between the other investigators. Areas of discordance were further discussed and resolved among the team with adjustments to the codebook as needed. The final codebook **(Table S2.2)** was then used to code all interviews and entered into Dedoose version 8.2.14 (Los Angeles, California) for analysis. Though many themes were identified, in this paper we outline those specific to mental health support after a traumatic birth.

CHAPTER III: RESULTS

Characteristics of participants

Of 198 individuals who clicked on the recruitment link, 85 individuals met inclusion criteria and gave informed consent by submitting their contact information. Thirty-four individuals responded to the investigator's follow-up phone calls to set up an interview for the study, and 32 completed the interview. One participant was located in Canada, and the others were located throughout the United States. Participants lived in 14 different states at time of interview and covered all 8 major geographical regions of the United States. Most participants were White, married, and had at least a bachelor's degree and private health insurance. Half of participants had an emergency cesarean delivery and almost half gave birth within a year of the interview. Postpartum depression and anxiety were the most common mental health conditions with which participants reported having been diagnosed **(Table 3.1)**.

Screening Results

Screening results from the phone interview are reported in **Table 3.2.** More than a third of participants screened positive for PTSD on the PCL-5 and for anxiety on the GAD-7. Although the screening measures inquire about symptoms within the prior 2-4 weeks, there was no significant difference between positive screens for participants who were interviewed within one year of their delivery compared to those interviewed more than a year after their delivery (data not shown).

The prevalence of positive screens from our study interviews was compared to the prevalence of postpartum mental health diagnoses self-reported by our participants

(**Table 3.3**). The prevalence of positive screens on the PTSD screening tool (PCL-5) from our phone interviews was almost three times higher than the number of postpartum PTSD diagnoses self-reported by our participants. The number of positive screens on the anxiety screening tool (GAD-7) was almost twice as high as the number of postpartum anxiety diagnoses self-reported by our participants. Fewer participants screened positive on the depression screening tool (PHQ-8) than those who reported having received a diagnosis of postpartum depression. More than half the participants reported having received no postpartum mental health diagnoses and had no positive screens on the interview. Twelve (37.5%) participants either scored a positive result on more than one screening test or reported that they had been diagnosed with more than one postpartum mental health condition after their traumatic birth experience.

Qualitative Themes:

Descriptions of participant birth experiences are reported in **Table S3.1**. There were a wide range of maternal and neonatal medical complications experienced with the delivery. The aspects that participants found most traumatic were at times unrelated to the medical complications or outcomes and were instead due other factors that included interactions with the clinical team, prior expectations about the delivery, and lack of autonomy. The themes associated with racism expressed by participants (n=7) were related to interactions with the clinical team and will be reported in a separate manuscript. Only three participants gave birth within a year of the start of COVID-19 in the United States. No unique themes emerged from their interviews.

Below, we present patient perceptions of patient-, provider- and systems-level barriers and facilitators to mental health support after a traumatic birth. These themes and additional illustrative quotes are provided in **Tables 3.4 and 3.5.**

Patient-level barriers:

A variety of psychosocial factors prevented patients from communicating their mental health needs to obstetric professionals after a traumatic birth. Participants reported that they did not want to discuss their symptoms because of personal stigma towards needing mental health care (**Table 3.4, Ref 4.1**). Participants described not wanting to feel like a "failure" or a "burden" or that they were "trying to be the strong person." Participants were also worried that obstetric professionals would automatically see any mental health discussion as something that needed to be treated.

> *"I didn't feel like I would have been accepted, just by saying 'Yeah I'm completely anxious and out of my frickin mind right now but I don't want to go on a pill and I don't want to see a counselor I just want some support from you.' But I, I feel like it would it would have gone that way like 'Oh anxious, go to a mental health-' and I don't even know. I never even tried to say it."*

Participants wanted to discuss their emotions with obstetric professionals, but the fear of being directed towards medical treatment made them reluctant to communicate their mental health symptoms.

A unique barrier to communication between patients and providers after a traumatic birth is that some patients may need time to adjust to unexpected outcomes or events while recovering in the hospital and might not want to focus on education about their mental health (**Table 3.4, Ref 4.2**). A few participants reported that their primary focus after a traumatic birth was to go home or to go see their baby in the NICU. They were mentally adjusting to the unexpected events that had occurred and did not feel they had the mental capacity to listen to education about resources right after delivery.

After patients went home, the traumatic birth experience itself was also a barrier to patient-provider communication (**Table 3.4, Ref 4.3**). Some participants felt that either a particular obstetric professional or the hospital itself was an emotional trigger for them, and they tried to avoid going back.

> "*I actually never ended up going back to my OB after the six-week visit because it was too…I still like just feel too stressed out to go back there. Like, it just brings back too many memories, so I actually haven't had any kind of OB visit since my delivery."*

Provider-level Barriers:

Most participants wanted someone on the clinical team to check on their mental and emotional health after their traumatic birth, but the majority of our participants felt that they did not receive adequate support while they recovered in the hospital after their delivery (**Table 3.4, Ref 4.4**). Some said that they were screened for mental health

conditions but received no follow-up discussion afterwards, which they did not consider to be adequate support. Others said that obstetric professionals neglected to ask about mental health at all. A few never saw the clinicians that delivered the baby again. Participants felt that it should have been clear that they needed mental health support, either because of complications with the birth, outcomes of the baby, or their own outward appearance.

Even participants with a history of depression or anxiety they felt that their clinical team did not understand or recognize the need for closer follow-up.

> *"I had tried to talk to [my care team] about [my symptoms] before, because I had pretty high anxiety my whole pregnancy. But nobody really seemed all that concerned. Everybody kind of brushed it off as like first time mom anxiety. They kind of said like, 'Okay, well you can find a therapist' and like that was that."*

This lack of check-in or follow-up made many participants feel that the clinical team did not care about them. They also perceived that obstetric professionals seemed more comfortable focusing solely on the physical care rather than engaging with a mental health assessment. Therefore, even when participants exhibited physical manifestations of mood and anxiety disorders weeks later, obstetric professionals did not attribute them to mental health (**Table 3.4, Ref 4.5**).

> *[My OB] really was very reinforcing of the fact that I already lost my baby weight, like, "Wow, you look great oh my god, you lost all your baby weight. Great job,"*

but that was definitely a red flag after the fact because like I was breastfeeding and I wasn't eating enough, but I wasn't eating because I was anxious. So like my appetite had gone down, you know, but that was reinforced by the OB like, "Oh, you look great. Oh, you are so you already lost all the baby weight, like keep at it"… by the time I had already gone to like my psychiatrist for follow up which my son was already four months. When I started seeing a psychiatrist like I had already lost 35 pounds. So like I lost my baby weight and then some. (40)

The lack of recognition of need for mental health support was not limited to obstetric professionals. Almost all participants interacted with pediatricians before the postpartum visit and felt that they received inadequate mental health support from them. Several participants stated they felt like they were only screened by the pediatrician due to protocol, but there was no follow-up discussion about the results of the screening test or about mental health (**Table 3.4, Ref 4.6**). One participant said she screened positive, but the pediatrician only told her to watch out for certain symptoms and provided no assessment or follow-up. Participants expressed disappointment that the focus seemed to solely be on the baby without support for the mother.

Systems-level Barriers

Several participants expressed difficulty with the long interval between hospital discharge and the postpartum visit (**Table 3.4, Ref 4.7**). They felt that this was a time when postpartum mental health symptoms developed, festered, or escalated, as they did not always have the opportunity to interact with a healthcare professional. This

sentiment was primarily expressed by those who had a postpartum visit at six weeks. One participant's baby died during this period and she still had no communication with her obstetrician.

> *"I think checking in on my mental health more often, because even when [my baby] came home, nobody was really checking in on me and I feel like I'm like, pretty prime target for postpartum depression. Even after she died, I called my OB's office to tell them what happened, and nobody checked in on me."*

This made the participant upset, and she did go to her scheduled postpartum visit which meant that no one assessed her mental health state.

Some participants with traumatic births were told by hospital staff that they would call them after they were discharged from the hospital. However, several participants reported that they waited for a phone call but received no follow-up communication at all (**Table 3.4, Ref 4.8**).

> *"They said they were going to follow up with me, make sure everything was okay and I just sort of felt like I was- that they didn't care, in a sense, or that I wasn't important or my feelings weren't valid because they just kind of dropped the ball on everything both times."*

It left them feeling like their obstetric team did not care about them, or that they were not important. This loss of trust in the health care system exacerbated the preexisting discomfort about discussing mental health described by many of our participants.

Patient-level Facilitators:

The facilitators described by our participants primarily centered on increasing their comfort with discussing mental health symptoms. Our participants expressed many different preferences for engaging in this topic. Some said that they preferred opening up about emotional symptoms if they had an existing relationship with the provider (**Table 3.5, Ref 5.1).** This often meant that they were more likely to discuss mental health concerns with their regular obstetrician or with the physician or nurses that attended their delivery. Other participants felt more comfortable talking to non-physicians about their emotions because they were not as afraid of being pushed into mental health treatment (**Table 3.5, Ref 5.2**). For example, one participant's care team asked a chaplain to talk to her. She appreciated that this was a more subtle method to assess and support her emotional status than if the physician had done it. Other participants felt that nurses, therapists, or social workers would be helpful for initiating the conversation.

Overall, participants felt more empowered to speak when they felt that their obstetric professionals cared about them and acknowledged their concerns (**Table 3.5, Ref 5.3**).

> *"[My OB] spent a lot of time with me. She came in on her days off. She just…she came in and she would just hold my hand and seeing her emotional was helpful. That made me know that it was okay to be emotional about it."*

Participants said that they wanted to be strong, and many thought that they were weak for being so affected by their delivery experience. Obstetric professionals helped patients feel more comfortable by showing them it was okay to be vulnerable.

Provider-level Facilitators:

Participants wanted obstetric professionals to understand and recognize that anyone could perceive their birth to be traumatic (**Table 3.5, Ref 5.4**). The acknowledgement of their trauma was helpful for their emotional recovery, but if the birth was not obviously traumatic, participants felt like their concerns were brushed off.

> *"I left kind of feeling like [my OB] minimized [my feelings about my birth]. You know, and I think people need to say, 'What was that like for you?' Instead of here's how common it is or here's…you know, it's normal for you to feel that way because everyone is going to have a different reaction to their birth. So, yeah, there's a lot more support needed than there is, I think."*

Participants suggested that obstetric professionals proactively ask all patients how they perceived their birth to understand who may be struggling and respond with appropriate supports.

To help facilitate conversations about mental health, participants also felt that an important aspect of care after a traumatic experience is to normalize the need for mental health treatment if that was warranted (**Table 3.5, Ref 5.5).** This likely meant discussing perinatal mental health throughout pregnancy so that patients may find the discussion to be less stigmatizing.

To address the need for mental health support from providers before the postpartum visit, several participants said they wished pediatricians could be trained to talk about the birthing person's mental health (**Table 3.5, Ref 5.6**). Most participants saw pediatricians several times before they saw an obstetric professional in the postpartum period, and they thought it was an opportunity to discuss mental health and receive more timely referral for assessment or treatment if needed.

Systems-level Facilitators

Overall, participants emphasized the need to invest in resources to properly integrate mental health care into labor and delivery. Several participants recommended embedding a mental health provider, such as a psychiatrist or therapist, into postpartum care to automatically see patients in the hospital after delivery (**Table 3.5, Ref 5.7**).

"[I]t may have been better if you like, you know, instead of it being from a medical standpoint, from-from an emotional standpoint, let's talk about how you can't have children anymore, and let's talk about how you didn't have a choice to have your uterus removed…Like my doctor is not going to talk to me about that and I-I don't, that's fine with me that's not their job. Or my nurses. it would have been nice to have someone

that has a different training to talk to me about it, whether-whether or not I, I requested it, you know."

While some participants stated they would not have voluntarily asked to see a mental health professional in the hospital, they said they would have taken the opportunity if it was presented to them. This would take the responsibility of recognizing who may need professional mental health support off of obstetricians and removes the burden of asking for additional support off of patients.

When participants were discharged from the hospital after their delivery, most never saw an obstetric professional for over a month. Thus, participants wanted a dedicated staff member to check in on patients during this interval (**Table 3.5, Ref 5.8**). This person could be a social worker, case manager, or even an obstetric professional. Participants felt that calling at intervals during the postpartum period could most effectively support patients' mental health.

> *"If you catch them too soon, I think they don't really know yet how they're going to feel about it. For me it took a while for me to really realize, like this isn't going away. And that's why I think intervals is good… my ideal scenario, if I could wave a magic wand, like, every single woman who gives birth would like a case manager, whose job is to check in at intervals and kind of do a couple screenings and then get the resources as needed."*

If these resources are not available, participants recommended that the care team establish a support system for postpartum mental health support before the patient is discharged from the hospital (**Table 3.5, Ref 5.9**). This could mean educating the birthing partner, family member, or anyone in the household about signs and symptoms of postpartum mental health conditions before the patient is discharged.

> *"I think it's [more] about informing the partner and informing family than it is the actual person who's giving birth. I strongly believe that. Because is it very likely that the person who is experiencing symptoms is not going to be cognizant of it."*

Participants felt this would be particularly important because patients may be in denial about their need for mental health support. They also recommended receiving more comprehensive resources for mental health support in their paperwork at discharge so that patients are better equipped to support themselves if they realize their symptoms are not going away.

Table 3.1. Participant Characteristics (n=32) Results listed as n (%) unless otherwise noted	
Age (mean, SD)	33.3 (3.6)
Non-Hispanic White race*	26 (81.3)
Hispanic or Latino/a ethnicity	1 (3.1)
Relationship status - Married	29 (90.6)
Highest Level of Education	
Masters or Doctoral degree	14 (43.8)
Bachelor's	11 (34.4)
Other†	7 (21.9)
Household Income More than $60,000	28 (87.5)
Private Health Insurance	29 (90.6)
Time of Birth from Time of Interview <1 year	14 (43.8)
Gravidity (mean, SD)	2.4 (1.7)
Parity (mean, SD)	1.7 (0.9)
Method of Delivery	
Emergency cesarean delivery	16 (50.0)
Planned cesarean delivery	4 (12.5)
Unassisted vaginal	8 (25.0)
Operative vaginal	2 (6.0)
Other‡	2 (6.0)
Mental Health Diagnoses Since Delivery as Per Participant Report	
Postpartum Depression	9 (28.1)
Post-traumatic Stress Disorder	4 (12.5)
Postpartum Anxiety	6 (18.8)

*Other respondents include Black or African-American (n= 3), White Hispanic (n=1), Other (n= 2)
† Other levels of education include some college or technical/trade school (n=2), Associate degree (n= 2)
‡Other methods of delivery include Vaginal Birth After Cesarean (VBAC) (n=1), D&E (n=1)

Table 3.2. Mental Health Screening Results						
	PTSD		Depression		Generalized Anxiety	
Timing of Traumatic Delivery Before Study Interview	**PCL-5 Score (Median, IQR)**	**PCL-5 Positive Screening Score (%)***	**PHQ-8 Score (Median, IQR)**	**PHQ-8 Positive Screening Score (%)****	**GAD-7 Score (Median, IQR)**	**GAD-7 Positive Screening Score (%)*****
< 1 Year Before (n= 14)	26 (10-30.8)	35.7	7.0 (3.0-8.8)	14.3	5.0 (3.0-13.5)	35.7
> =1 Year Before (n= 18)	18 (8.3-22.8)	33.3	4.0 (2.0-9.0)	22.2	5.5 (3.0-11.75)	33.3
Total n= 32	22 (9.0-33.3)	34.4	4.5 (2.0-9.0)	18.8	5.5 (3.0-12.0)	34.4

*Probable diagnosis of PTSD was met by answering a severity of "2" or greater to questions in 4 different symptom categories.
** A score of 10 was used as the threshold score for major depressive disorder.
*** A score of 10 was used as the threshold score for moderate anxiety.

Table 3.3. Prevalence of Self-reported Postpartum Mental Health Diagnoses compared to Positive Screening Tests in Study Interview				
Mental Health Condition	**Self-reported postpartum mental health diagnoses**	**Positive screen in study interview***	**Both Self-reported diagnosis and positive screen**	**p-value**
PPD	9 (28.1%)	6 (18.8%)	3 (9.4%)	0.33
PTSD	4 (12.5%)	11 (34.4%)	4 (12.5%)	0.006
Anxiety	7 (21.9%)	11 (34.4%)	3 (9.4%)	0.13
Nothing	19 (59.4%)	20 (62.5%)	15 (46.9%)	0.75

*Based on PHQ-8 (PPD), PCL-5 (PTSD), GAD-7 (Anxiety)

Table 3.4. Barriers to Comprehensive Mental Health support for Patients after a Traumatic Birth			
Ref	**Level**	**Sub-Thematic Element**	**Illustrative Quote**
4.1	Patient	Participants did not feel comfortable discussing mental health symptoms due to stigma against needing mental health treatment.	*"I didn't want someone to think that I was like, you know, suicidal or, you know, because I wasn't any of those things. So I didn't want a psych consult because I didn't feel like I was in psychosis, but I still had something that happened to me that was kind of rough."*
4.2	Patient	Participants needed time to adjust to unexpected events of a traumatic birth after delivery and did not always want be educated on resources that they may not need right after delivery.	*"There's so much happening and you know that if someone had offered me support I don't even know how I would have been able to take it anyway because at that point in time, all I could think about was getting to the NICU to nurse my baby."*
4.3	Patient	Participants may avoid returning to the hospital due to the traumatic experience.	*"[M]y OB/GYN practice is attached to the hospital that this happened at. So, I was doing everything humanly possible to avoid my six-week checkup. I put it off for ten weeks and finally my mom basically said she is going to drag me by my hair if I don't go."*
4.4	Provider	Obstetric professionals did not recognize the need for mental health evaluation and did not provide adequate support despite risk from traumatic birth experience	*"I think I saw my doctor like maybe once after I delivered. And he just kind of like came in, and like, checked on the scar and that was it and he left."*
4.5	Provider	Physical symptoms due to mood and anxiety disorders, can be mistakenly attributed to other causes	*"I was feeling dizzy and shaky. And I had thought it was because of my blood levels. And so when I got there they did-they did test my blood and they said that the levels were normal. But I just, I didn't feel good."*
4.6	Provider	Pediatricians screened some parents, but did not provide subsequent follow-up, as focus was primarily on child rather than mother	*"My pediatrician's office did a follow-up screening and I kind of screened positive there and they said, 'Oh, you screened positive. Like, watch out for this.' There was not really any follow-through ever until I reached out at my six-week appointment and then again at the 10-11 weeks…They did do the screening, but there was no follow-through."*
4.7	Systems	Long intervals between discharge from hospital	*"I wish that I had a follow up appointment sooner than six weeks because I wish I would*

		and postpartum appointment without support from healthcare professional allow symptoms to develop or worsen	*have been able to start my medication sooner than that. Because I didn't- I ended up not starting the medication until about eight weeks postpartum…And I just feel like it was a lot of wasted time that I could have been feeling a lot better."*
4.8	Systems	Lack of follow through from hospital staff for patients that experienced a traumatic birth results in patient distrust	*"The social workers there said 'We're gonna call you we're gonna follow up with you. We're – you're never gonna not hear from us.' I've never heard from them once."*

Table 3.5. Facilitators to Comprehensive Mental Health Support for Patients after a Traumatic Birth			
Ref	**Level**	**Sub-Thematic Element**	**Illustrative Quote**
5.1	Patient	Participants felt more comfortable bringing up mental health needs to providers that they had an existing relationship with	*"I was so stressed about it all that someone trying that I didn't even really know that well and I had only seen like once before, and I didn't know when I was going to see again because I risked out of having a midwife. I had to be treated by a doctor. That sort of bothered me. Probably because she just wasn't the right person to say it. If one of the other midwives that I felt closer to had said it, I probably would have reacted differently."*
5.2	Patient	Participants felt more comfortable talking to non-physicians about mental health because they were not as afraid of being forced into treatment	*"Half hour later the chaplain came in and was like "Do you need to talk about anything?" And I know that he was probably like flagged down the hall and like "You need to go in there because she's losing it." But nobody like specifically said like, "We're calling the chaplain for you because you don't have control of your emotions." But I didn't at all. So they were they were good about doing what needed to be done but not calling attention to it."*
5.3	Patient	Participants felt more empowered to speak about emotions if obstetric professionals acknowledged their trauma	*"Like I said, that doctor I felt more supported during that conversation and she was the one that had done the actual surgery and she was the one that said that, you know what I went through was traumatic and that it's possible I went through some posttraumatic stress… I felt like more supported in that conversation than I had, while I was in the hospital."*
5.4	Provider	Participants wanted obstetric professionals to recognize that anyone could perceive their birth to be traumatic	*"I mentioned it to my OB at my six-week and I told her that it was really…and she just kind of brushed it off like, yeah. Because I delivered [vaginally]… I would have liked her to maybe say that, you know, they should have listened to you. That's what…if she had said, you know, like you had a really fast delivery and you told them they should have maybe done something."*
5.5	Provider	Participants recommended that	*"Um, I think just reassuring women that they don't have to be like this model perfect*

		obstetric professional be trained to address stigma against mental health support	*postpartum mom. Like, it's not this perfect world and encourage them that, you know, it's okay to see help and that you're not weak and that you're not a failure as a mother because you need some help."*
5.6	Provider	If educated, pediatricians can be an important ally because the perinatal individual sees them many times before they see the OB	*"I think with my son's, like with the pediatricians, just saying like it's okay to feel, you know, you don't have to act tough. You know, it's understandable to be exhausted. They knew everything that had gone on. I think them just saying like, do you want to talk about it or do you want us to call your doctor and set something up? Like just an offer to help instead of just ignoring it completely."*
5.7	Systems	Proactive mental health professional embedded in labor and delivery to automatically see patients after birth	*"Instead of doing a screening tool with a nurse, let's do it with a therapist, and they can, you know, be there. Because I'm not like I'm not a person to seek it out but if help is right there in my face, I will accept it."*
5.8	Systems	Proactively check in with patients during interval before postpartum visit, particularly if a traumatic experience is known	*"I wish that people would have checked in on me and pushed resources more, especially after she died. I wish that the care team would have checked in on me. Maybe I'm incorrect in assuming that like the OB is in charge of postpartum depression monitoring or something. I would have just liked to have felt like people actually cared."*
5.9	Systems	Establish a support system for postpartum mental health support before discharge	*"[M]y OB at the time kind of told me that most people who undergo such a traumatic delivery probably have some depression, anxiety, like postpartum depression is like really high after deliveries like this and so she told my husband to watch out for certain things and to make sure that if I was having those symptoms that we talk to her. So, I think that was a good thing that they did."*

CHAPTER IV: DISCUSSION

This study contributes to our understanding of mental health needs of perinatal individuals who experienced a traumatic birth by eliciting their experiences with postpartum mental health conditions and support in the obstetric setting. Our screening data show that a far greater number of participants in our sample screened positive on the PTSD screening test (PCL-5) and anxiety screening test (GAD-7) than those who reported receiving an actual diagnosis. The prevalence of positive screens on the PCL-5 from our interviews was particularly noteworthy as it was three times that of reported diagnoses of PTSD. While screening does not equate to a diagnosis, these results may be because universal PTSD screening is not a part of ACOG's postpartum recommendations,[15] and patients often do not proactively discuss prior trauma.[36] Thus, these symptoms are missed in patients who had experienced a traumatic birth. Additionally, more than one-third of participants had multiple positive screens on the screening tests or had reported being diagnosed with multiple mental health conditions. As the screening tests only ask for symptoms within the last 2-4 weeks, it indicates that mental health symptoms can last for years after the delivery. Patients need timely follow-up and comprehensive mental health assessment after a traumatic delivery so that mental health symptoms are addressed and diagnoses are not missed. Further details on mental health screening, assessment, and treatment will be in a subsequent paper on barriers and facilitators to the mental health care pathway.

Our qualitative themes show that there are multi-level barriers towards recognizing and supporting individuals who had a traumatic birth. In our sample, participants experienced traumatic deliveries in different ways and consequently had

different mental health needs. Some individuals felt that they only wanted to talk about their emotions surrounding the delivery with obstetric professionals while others developed a mental health condition and needed additional mental health care. The experiences that our participants found most traumatic were sometimes unrelated to medical complications or outcomes associated with the delivery. Because birth trauma is not always obvious to obstetric professionals, every perinatal individual should be treated with a trauma-informed care (TIC) approach.

TIC is an approach where the importance of trauma is recognized, and efforts are made to provide compassionate care without retraumatizing the patient.[37] In an obstetric setting, the clinician-patient relationship is vital for decreasing the influence of trauma by focusing on respect, validation, and empowerment.[38] Therefore, as childbirth trauma is seen in up to one-half of patients, our participants suggested that obstetric professionals ask all patients how they perceived their birth so that they can provide support and administer earlier screening for mental health conditions if needed. If the patient shares that they experienced trauma from the delivery, the obstetric professional should acknowledge those feelings, regardless of the circumstances of the birth. This approach could potentially address several of the patient- and provider-level barriers towards communication that we identified.

While all participants wanted more comprehensive and timely support for their mental health, the barriers and facilitators expressed by participants sometimes conflicted with each other. Some participants wanted to talk about their mental health with their obstetrician, while others felt more comfortable talking to non-obstetric professionals. Many participants recommended having a mental health professional

proactively see them while they were recovering in the hospital, but a few were averse to any discussion about mental health with a psychiatrist. Ultimately, this speaks to the importance of providing patient-centered care and utilizing a multi-pronged approach to accommodate patient needs.

Our proposed patient-centered conceptual framework (**Figure 4.1**) outlines many avenues by which a patient can be connected for support and followed up with for more mental health screening and assessment if needed. While in the hospital, all members of the care team, including nurses, therapists, social workers, and other professionals, can be trained to check-in with the patient and address these needs. These efforts may still not be enough, because many participants did not realize that they wanted mental health support until they were discharged from the hospital after the delivery. The potentially hectic environment during and after traumatic births and patient avoidance of returning for postpartum care are unique factors that must be taken into account with birth trauma. Thus, efforts should be made to develop a support system for the patient in the event they need additional support between their discharge from the hospital and their scheduled postpartum visit.

The support system can be strengthened by educating the partner and/or family members on signs of postpartum mental health symptoms or having a social worker or obstetrician call to check on the patient in intervals before the postpartum visit. This aligns with ACOG's postpartum guidelines, which recommend obstetricians check-in with the patient within 3 weeks of delivery.[15] Pediatricians should also be included in the postpartum support system and trained to follow-up about postpartum mental health conditions because the postpartum individual may see them multiple times before they

see an obstetric professional. Having a parent with an untreated mental health condition is considered an adverse childhood event for the child,[39] which have been associated with negative outcomes.[40,41] The American Academy of Pediatrics has recently recommended integrating postpartum depression surveillance and screening at monthly intervals.[42] Thus, it would be beneficial for obstetric professionals to coordinate with pediatricians to assess the parent at this high-risk time period. This multi-pronged system can provide support for all patients after delivery, nurture the patient-provider relationship, empower patients to discuss their mental health, and identify those who may need additional assessment and treatment for mental health conditions. Lastly, obstetric professionals can consider the use of telehealth for postpartum visits to overcome barriers for postpartum mental health care related to healthcare inequities or triggering stimuli from birth trauma.[43]

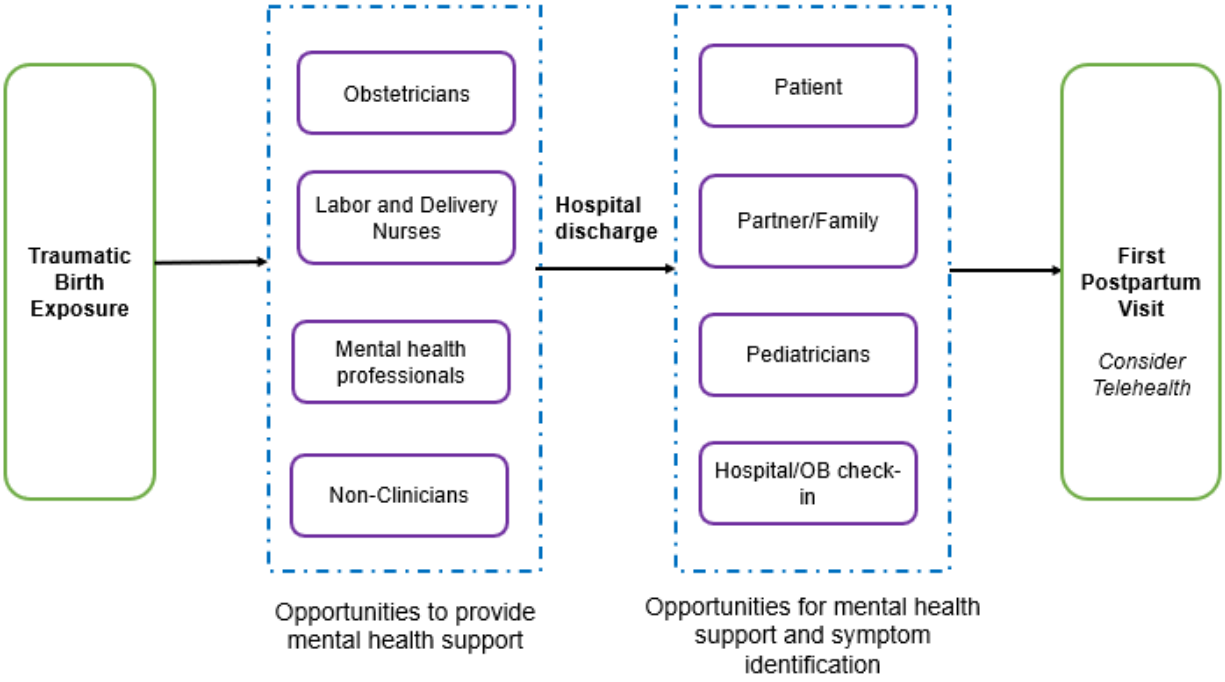
The study strengths include a large and geographically diverse sample for a qualitative study with an in-depth focus on patient experiences with postpartum mental health care after traumatic births and recommendations that can inform health care system interventions. While our recruitment inclusion criteria was subjective, our screening showed that our participants had a much higher prevalence of positive screens for PTSD, anxiety, and depression compared to the general population as far out as three years after delivery.[7,44,45] This indicated that our participants likely did have lasting emotional consequences from their traumatic experiences and had robust recommendations for this reason. It is also important to keep our limitations in mind. The participants in this study had recovered successfully enough that they were willing to sign up for a study and talk about their experiences in an interview despite barriers

and negative experiences. We are likely missing themes and recommendations from individuals who continue to suffer and did not want to relive their experience. Additionally, while we did make several attempts to recruit participants of diverse backgrounds, future work on birth trauma would benefit from hearing from more racially, ethnically, and socioeconomically diverse people. Our themes about the impact of race on birth trauma will be presented in a future paper on clinical team interactions.

Conclusions:

While it is necessary to screen all patients for development of mental health conditions, the goal of mental health support for birth trauma should ultimately go beyond detection and treatment of an illness. All patients should be able to have their emotions surrounding their delivery acknowledged. Open lines of communication with providers of all disciplines throughout the postpartum period can decrease stigma around the need for mental health care, increase opportunity to recognize childbirth trauma, and understand who may need additional mental health assessment. Postpartum mental health support should be an ongoing process and systems-wide goal of care for all patients.

Figure 4.1: Patient-centered Postpartum Support Conceptual Model



Supplemental Table S2.1: Semi-structured Interview Probes

1. *Can you please describe your birth and childbirth experience?*
    a. *What was particularly traumatic about it for you?*
    b. *How did it impact you at the time?*
    c. *How did it impact you after the delivery?*
    d. *How was it addressed by the healthcare providers if at all?*

2. *What could have gone better?*
    a. *What could your care team have done better?*
    b. *What could anyone else had done better (partner, family, etc.)*
    c. *What did you wish you'd known about the labor and delivery experience beforehand?*

3. *What was done well?*
    a. *By your healthcare team (providers, nurses etc.)*
    b. *Anyone else involved in the delivery process.*

4. *What kind of support for your emotional/mental health is needed after the delivery?*
    a. *What could be better for you?*
    b. *What was done well?*
    c. *What kind of barriers did you feel around getting help or support?*

5. *We understand that systemic racism and conscious or unconscious racial bias can impact any aspect of medical care. Did you feel these factors affected your childbirth experience and would you feel comfortable talking about it?*
    a. *What could have been better for you?*
    b. *What kind of barriers did you feel around getting help or support?*
    c. *What was done well that you particularly appreciated?*

6. *(If relevant based on timing of birth) We also understand that the COVID-19 pandemic can add additional stress for individuals in the perinatal period. How did it affect your childbirth experience?*
    a. *What could have been better for you?*
    b. *What kind of barriers did you feel around getting help or support?*
    c. *What was done well that you particularly appreciated?*

7. *Recommendations and suggestions*
    a. *For the care team?*
    b. *What do you hope other women know about their labor and delivery experience beforehand?*

<u>Supplemental Table S2.2</u>: Final qualitative codebook, used to code all interviews

1. **[PERSONAL EXPERIENCE – trauma related]**
    - **a. Medical Complication**
        - i. To mother (obstetric complication)
            - a. Medication complications
        - ii. To baby
            - a. Baby to NICU
    - **b. Expectations about birth**
        - i. Unexpected Delivery method
        - ii. Comparison with Previous Birth
        - iii. Unwanted Medication
        - iv. Expectations of being a mother (and being unable to fulfill
        - v. Expectations based on other's birth experiences
    - **c. Autonomy/Control**
        - i. Ability to Advocate
    - **d. Breast-feeding/lactation**
    - **e. Emphasis on baby while neglecting needs of mother**
    - **f. Other**

1. **[CLINICAL TEAM INTERACTIONS AND COMMUNICATION]**
    - **a. Taking patient concerns seriously**
    - **b. Explanations about medical care or Debriefing**
        - i. Communication skills (doing a good/bad job communicating the information)
    - **c. Empathy/Compassion/Friendliness or Rudeness**
        - i. Validation/Acknowledgement of patient's feelings and needs beyond just MH
    - **d. Medical Skill-level/competence of individual provider**
    - **e. Asking how partner/family is doing**
    - **f. Importance of continuity of care**
    - **g. Helping mother with baby**
    - **h. Provider Role (if specifically mentioned)**
        - i. Nurse
        - ii. Physician
            - a. Pediatrician
            - b. OB
        - iii. Midwife
        - iv. Lactation consultant
        - v. Doula
        - vi. Other
    - **i. Perception that care team is covering up mistake**
    - **j. Other**

2. **[SYSTEMIC/LOGISTICAL FACTORS]**
    - **a. Hospital structure**

- **b. Time with medical decision-making**
- c. **Separation from Baby**
- **d. Forced to leave hospital early when not ready**
- **e. Other**

3. **[EDUCATION]**
    - **a. Normalization**
        - i. Non-vaginal births
        - ii. Pregnancy/obstetric complications
        - iii. Postpartum MH conditions
    - **b. Knowledge**
        - i. Non-Vaginal births
        - ii. Pregnancy/obstetric complications
        - iii. Postpartum mental health conditions
            - a. Partner postpartum mental health education
    - **c. Resources**
    - d. **Patient-centered educational approach**
    - **e. Timing**
    - **f. Other**

4. **[MENTAL HEALTH CARE]**
    - **a. Follow-up from providers after discharge (By Hospital or OB)**
    - **b. Screening**
        - i. Symptoms not captured in screening
    - c. **Assessment**
        - i. Patient's perception that meds pushed too quickly
    - d. **Mental/emotional health check-in**
    - **e. Initiation of treatment- therapy or meds**
        - i. Forced into self-initiation
    - **f. Dedicated Mental Health Professional Checking in**
        - i. One-time psychiatry consult
        - ii. Dedicated professional embedded in care pathway
    - **g. False sense of security**
        - i. External
        - ii. Internal
    - h. **Acceptance/pushback/stigma**
        - i. From Patients
        - ii. From Providers
    - **i. Provider recognition of MH condition or trauma**
    - **j. Length of time**
    - **k. Expressing that other women might be worse off**

5. **[CONSEQUENCE OF TRAUMATIC EXPERIENCE on PARTICIPANT]**
    - **a. Emotional Impact**
        - i. Anger
        - ii. Fear

iii. Anxiety
iv. Envy (of other mothers)
v. Guilt
vi. PTSD and related symptoms
    a. Alterations in arousal and reactivity
    b. Avoidance of stimuli
    c. Intrusive thoughts
    d. Negative mood and cognition/sadness/depression
vii. Lack of trust in body
viii. Other
ix. Numb

b. Physical Impact
c. Bonding with baby
d. Influence future medical decisions
    i. Influencing future pregnancy decisions
e. Influencing future expectations
f. Distrust of medical professionals
g. Impact on partner/family
h. Felt like didn't give birth
i. **Changed priorities in life**
j. Career/work
k. Other

6. [RACE/RACISM]
7. [HEALTH ACCESS/EQUITY]
8. {NON-CLINICAL TEAM INTERACTIONS WITH PATIENT]
a. Family Interactions
b. Partner interactions

---------- (paired with something above) ----------

9. **[SYSTEMIC PATHWAY TIMELINE] – code if could potentially go into figure about care/systemic pathway**
a. Pre-labor
b. Hospital Stay
    i. Before delivery (up until labor if not yet in labor)
    ii. During Delivery (Vaginal Birth)
    iii. During Delivery (c-section)
    iv. Recovery in hospital
c. Postpartum (after discharge)
d. Other

10. [FACILITATORS/SUCCESSES]
11. [BARRIERS/CHALLENGES]
12. [RECOMMENDATIONS]
13. [GREAT QUOTES]

Birth trauma Codebook Codes, definitions and illustrative quotes		
Code (child codes indented)	**Definition**	**Illustrative Quote/Example**
1. Personal Experiences	Participant experiences and past history	
a. Medical Complication	Any mention of abnormal medical complications involved with case	
i. To mother	Complication or unexpected outcome to mother	*EX: placenta previa, placenta acreta, failure to progress (not dilating enough leading to c-section)*
ia. Medicine Complication	Complication or symptoms caused by medication that were received	*EX: Vomiting from anesthesia*
ii. To baby	Complication or unexpected outcome to baby	*Can include heart rate dropping or anything concerning*
iia. NICU	Baby was sent to NICU	
b. Expectations	Any comment about having expectations about birth experience prior to actual experience	
i. Unexpected Delivery Method	Any comments about how the method of delivery was different than how they had planned or imagined	*(e.g. emergency c-section)*
ii. Previous Birth Comparison	Any comments comparing this birth to a previous birth	*Ex: having an easy birth previously and thus expected this birth to be similar.*
iii. Unwanted Medication	Any comments about not wanting medications but receiving them anyways	*Ex: wanting a natural birth without medication and ended up needing to have medication anyways*

iv. Expectations of being a mother	Any comment about having expectations of being a mother	*EX: guilt for not breastfeeding and thinking all mothers should be able to*
v. Expectations based on other's birth experiences	Any comment about having expectations about birth due to other's experiences	*EX: Friends having easy births and expecting the same*
c. Autonomy/Control	Any feelings about not being in control or the opposite	
i. Ability to advocate	Any comment about not being to advocate for themselves or urging women to advocate for themselves.	*EX: Recommending women speak up for themselves*
d. Breast-feeding/lactation	Any comments about breast-feeding/lactation	*"I felt completely hopeless. I was desperate to make it work. I was devastated each time I made a bottle" (121)*
e. Emphasis on baby while neglecting needs of mother	Any comment about how care team were focused on baby's needs and ignored the mother's	*EX: Pediatrician caring about baby and not asking about mother*
f. Other		
2. Clinical Team Interactions		
a. Taking Patient concerns seriously or dismissing patient concerns	Any comment about patient expressing a concern or need and clinical team following up or dismissing her	*EX: Not believing patient when she said she could feel her epidural*
b. Explanations or Debrief	Any comment related to clinical team explaining or debriefing with patient	*EX: Feeling kept in the dark by clinical team* *EX: Appreciating debriefs after delivery*
i. Communication skills	Any comment related to how well clinical team explained something	*EX: Clinical team did explain or debrief, but patient did not understand.* *EX: Or related to bedside manner*

c. Empathy/Compassion/ Friendliness (or lack of)	Any comment about feeling treated like a human being or friendliness or reassurance from staff. The opposite would be experiencing rude or inappropriate interactions with clinical staff.	*"I felt like I was a real person, not like I was just another patient" (16)*
i. Acknowledgement or Validation in response to patient's feelings/needs	Any comment related to clinical team acknowledging or not acknowledging trauma	*EX: Telling patient that their delivery was extremely traumatic*
d. Skill-level/Competence of Individual Provider	Any comment about provider medical skill	*EX: Forgetting to give antibiotics for GBS+ or struggling with IV*
e. Asking how partner/family is doing	Any comment about clinical team checking up on family/partner	*EX: Clinical team asks if mom is doing ok*
f. Continuity of care	Any comment related to having a longer relationship with a provider	*EX: explicitly feeling comfortable discussing trauma with someone they've seen more than once*
g. Helping mother with baby	Any comment about wanting help with baby	*Ex: taking care of baby so mother can sleep*
h. Provider Role	Any comment about a specific provider	
i. Nurse		
ii. Physician		
Iia. Obstetrician		
Iib. Pediatrician		
iii. Midwife		
iv. Lactation Consultant		
v. Doula		
vi. other	Otherwise unspecified role	
i. Perception team is covering up mistakes	Feeling that team is not admitting to a mistake that patient feels they made	EX: Stating that they felt like their care team was not being upfront with them about a complication
j. Other	Anything not mentioned	
3. Systemic/Logistical Factors	Any comment about factors that impacted	

	experience related to systemic factors	
a. Hospital Structure	Any comment about frustrations with factors inherent to being in the hospital.	*Ex: shift work- lack of staff continuity*
b. Time with medical decision-making	Any comment about not having enough time with consent forms or medical decision-making	*EX: Feeling that they had no time to think or properly read when signing forms before c-section*
c. Separation from Baby	Any comment about being separated from baby after delivery	*Usually because baby has to go to NICU* *"At this point I had never held my child, seen my child, except for that one second" (16)*
d. Forced to leave when not ready	Forced to leave hospital when patient did not feel ready	*Ex: due to insurance*
d. Other	Anything not mentioned	
4. Education	Recommendations or experiences with education of participant	
a. Normalization		
i. Of non-vaginal births	Any comment about wishing less emphasis was placed on having the perfect vaginal birth or about prior education experiences.	*Ex: A lot of people wanted to normalize C-sections or were not taught about c-sections* *"Everybody just assumes that you're going to be able to deliver vaginally…that's all anybody talks about. The birth classes only talk about vaginal deliveries, and nobody talks about a c-section except in a bad way so I just feel like I wasn't mentally prepared for it and I felt like I'd failed because I wasn't able to deliver her vaginally" (14)*

ii. Pregnancy/obstetric complications	Any comment about wanting less stigma around pregnancy/obstetric complications	*EX: placenta acreta*
iii. Postpartum mental health conditions	Any comment about wanting less stigma around mental health conditions	*EX: Talking about mental health earlier in pregnancy*
b. Knowledge of obstetric complications		
i. Of non-vaginal births	Any comment about wanting more knowledge on non-vaginal births	*Ex: Wanting to know what to expect for c-sections beforehand*
ii. Pregnancy/obstetric complications	Any comment about wishing they knew more about pregnancy complications	*"Even in the labor and delivery class they brush over all the worst case scenarios that actually happen every day to women…for women that do have those worst case scenarios, after delivery doctors should sit down and talk through it with them, tell them what happened, what to look out for, and not say 'oh I can't believe this happened. This hardly ever happens'" (142)*
iii. Postpartum mental health conditions	Any knowledge about mental health conditions after pregnancy and what to watch for	*EX: Wanting to be educated at discharge from hospital*
Iiia. Partner postpartum mental health education	Any comment about partner knowing or not knowing what to look for after pregnancy	*EX: Educating partner because patient may be in denial* *EX: Partner not knowing what to look for*
c. Resources	Any comment about being taught about any kind of mental health resources	*"There needs to be a good starting point for people to just kind of get their foot in the door towards getting some help and I do think a list*

		of resources along with a discussion would be really helpful" (118)
d. Patient-centered approach	Any comment about wanting more personalized education	*Ex: tailored to needs of pt, not just standard class*
e. Timing	Any comment related to recommendations for timing of education	*EX: During 3rd trimester*
f. Other	Anything not mentioned	
5. Postpartum Health Care		
a. Follow-up from providers after discharge (by hospital or OB)	Any comment about hospital or OB checking in outside of scheduled postpartum visit. Or hospital saying they would follow-up and not following up.	"They offered to have someone come to my house a week after the baby was born to check on me. No one ever called me and when I called the hospital they said no one was available" (49)
b. Screening	Any comment about being screened with a screening tool or not being screened	
i. Symptoms not captured on screen	Screening negative but having other symptoms	*Usually of anxiety or PTSD* "*He gave me your standard PPD health screen. I filled it out and it didn't really apply to me. I wasn't depressed in that way…none of what I had to say matched that survey" (122)*
c. Assessment	Any comment about assessment after screening	
i. Patient's perception meds pushed too quickly	Any comment about feeling like there was not enough discussion or assessment prior to being offered medication	*EX: Getting a positive screening test and then being offered meds right away*

d. Mental/Emotional Health check-in by care team	Any comment about care team checking in with participant about how they are doing. Or wishing that they would.	*Ex: wanting someone to ask "how are you" to open up trauma discussion*
e. Initiation of Treatment	Any comment related to treatment	*EX: Starting medications or therapy*
i. Forced into self-initiation	Started treatment without help from provider	*EX: Having difficulty finding therapist on their own*
f. Dedicated Mental Health Professional (while recovering in hospital)	Any comment about being seen or wanting to see a mental health professional in obstetric setting	
i. One-time psychiatry consult	Any mention of seeing a psychiatrist while in hospital	*EX: Being seen by a psychiatrist while recovering in hospital*
ii. Dedicated embedded professional	Any comment about wanting a mental health professional to see patients automatically	*Ex: Wishing that there was a therapist or mental health provider that would automatically follow-up with the patient post-delivery to assess mental health needs without putting the burden on the patient to initiate.*
g. False sense of security	Any comment about ignoring symptoms because of internal or external reasons	
i. External	False sense of security from external source	*Ex: due to professional reassurance that things are fine*
ii. Internal	Personally felt that they did not need mental health check-in	*Ex: Feeling that support from friends/family was enough, but never had a professional check-up*
h Acceptance/stigma	Any comment related to acceptance or stigma against needing mental health support	
i. From patients	Any comment about feeling ashamed to be needing mental health or medication (e.g.	*"I felt almost shamed that I was feeling the way I was that she was offering*

	taking SSRIs) after the delivery.	*those (antidepressants) to me" (49)*
ii. From providers	Provider being hesitant to start treatment or addressing stigma	*"She (public health nurse) presented them in a very nonjudgemental way, saying 'I thought you might enjoy this' or 'this may be an option for you'" (121)*
I. Outpatient provider lack of recognition of MH condition or trauma	Provider did not know to ask about trauma or did not recognize symptoms	*EX: Praising weight loss instead of realizing it's anxiety*
J. Length of time	Any comment related to difficulty with length of time to access treatment	*EX: No provider check-in between recovery and postpartum period*
K. Feeling like better off than other women	Any comment expressing that they thought other women would be worse off than them	*EX: Being knowledgeable about resources and worrying that other women less connected than them would fall through the cracks*
L. Other	Anything not listed	
6. Consequences of Traumatic Experience on Participant		
a. Emotional Impact	Any comment about effect on emotional/mental health	
i. Anger	If explicitly mentioned	
ii. Fear	If explicitly mentioned	
iii. Anxiety	If explicitly mentioned	EX: Including feeling very stressed
iv. Envy	If explicitly mentioned	Ex: Feeling envious of other mothers afterward
v. Guilt	If explicitly mentioned	*"Because of everything people say about vaginal births like how that basically is what makes you a woman" (14)*
vi. PTSD sx		
a. Alterations in arousal and reactivity	Hypervigilance, irritability, aggression, trouble sleeping	EX: Not wanting children to ever be out of sight

b. Avoidance of stimuli	Not wanting to be reminded of trigger	Ex: Not wanting to return for postpartum visit
c. Intrusive thoughts	Flashbacks, nightmares	EX: Every birthday getting flashbacks
d. Negative thoughts and cognition	Depression, sadness	Ex: Sadness, not feeling happy
vii. Lack of trust in body	No longer trusting body	EX: Feeling anxious with very slight symptoms now
viii. Other	Anything not listed	
ix. Numb	If explicitly mentioned	Ex: Feeling nothing
b. Physical Impact	Effect on physical health that is not an expected part of the labor experience	*Ex: losing weight (may be due to mental health like anxiety)*
c. Bonding with baby	Any comment related to experience impacting bonding with baby	*Ex: Being unable to bond with baby due to outcomes*
d. Influence future medical decisions	Any comment about experience influencing future medical decisions	*EX: wanting c-section next time*
i. Influencing future pregnancy	Talks about influencing future decision to have children or not	*Ex: Not wanting any more children after the experience*
e. Influencing future expectations	Talks about experience influencing future expectations of next pregnancy	*Ex: Feeling like next pregnancy will also be similar to this one*
f. Distrust in medical professionals	Any comment about not trusting provider (ex OB) because of reaction to experiences	*Ex: Not wanting to talk to or see OB after not receiving adequate mental health support*
g. Impact on Partner/Family	Any comment about experience impacting partner or family	*"My husband was traumatized by the experience"*
h. Felt like didn't give birth	Any comment about feeling like they did not give birth	*EX: With a c-section*
i. Changed priorities in life	Any comment about making changes in life due to the experience	*Ex: Becoming a doula afterward*
j. Career/work	Any comment about how the experience affected their career or work	*Ex: Losing a job due to mental health symptoms*
h. Other	Anything not listed	

7. Race/Racism	Any comment about race being a factor in experience	
8. Health Access/Equity	Any comment about some people being able to afford things that others may not	*Ex: Being able to afford seeing a mental health professional with private insurance*
9. Non-clinical Team Interactions		
a. Family Interactions	Any comment about interactions with family members and feeling supported/unsupported	*Ex: Feeling mom was helpful by providing child care*
b. Partner Interactions	Any comment about interactions with partner during experience and feeling supported/unsupported	*Ex: Feeling partner was able to offer emotional support*
The below categories may or may not be co-coded with the above categories		
10. SYSTEMIC PATHWAY TIMELINE	Codes to differentiate points in the care timeline	
a. Pre-labor	Comments from participants about experiences or recommendations for pregnancy leading up to arrival to hospital	
b. Hospital Stay		
i. Before delivery (up until labor if not yet in labor)	Comments from participants about hospital experience before going into labor	*Less common as people usually go to hospital when they go into labor. Usually only if there is a medical risk*
ii. During Delivery (Vaginal Birth)	Comments from participants surrounding delivery experience in those with vaginal birth	*Only if no c-section was needed*
iii. During Delivery (c-section)	Comments from participants surrounding delivery experience in those with c-section	*If it was originally vaginal but became an emergency c-section, can code with this*
iv. Recovery in hospital	Comments from participants surrounding experience recovering in hospital after delivery	*Between delivery and discharge*

c. Postpartum	After discharge from hospital.	*Likely will coincide with the "Postpartum Mental Health Care" codes*
d. Timeline- Other	Anything else not covered in the above time periods	
11. Facilitators/Successes	What helped mitigate impact	
12. Barriers/Challenges	What did not help or worsened impact of delivery	
13. Recommendations	Provider recommendations for how to best help other providers manage BD and incorporating it into the perinatal setting	*Should demonstrate more of a future example of what to do (vs. current success)*
14. Great Quotes		

Supplemental Table S3.1. Descriptions of Traumatic Birth Experience Described by Participants				
Participant Number	**Type of Delivery**	**Maternal Medical Complication**	**Neonatal Medical Complication**	**Most Traumatic Aspect**
1	Vaginal delivery	None (GBS+)	Intermittent fetal bradycardia during labor	Negative interactions with clinical staff; Feeling like she had to manage her own labor due to perceived clinical ”incompetence”
2	Elective cesarean delivery	Preeclampsia	1-minutes APGAR score of 1, short NICU admission	Not feeling ready to give birth early; Not hearing daughter cry immediately after birth
3	Elective cesarean delivery	Vasa Previa	Born at 36 weeks, hypoglycemia; short NICU admission	Worrying about needing a cesarean delivery and about baby's outcome
4	Emergency cesarean delivery	Cephalopelvic disproportion	Fetal malpresentation	Not being mentally prepared for a cesarean delivery; not being able to deliver vaginally
5	Emergency cesarean delivery	Failure to progress	Swallowed meconium, anoxic brain injury	“Roller coaster” of being delivered, news about child’s anoxic brain injury, preparing for child’s death, then having child live; interactions with clinical team
6	Vaginal delivery	None	Meconium aspiration, NICU admission, Neonatal death	Baby was seemingly fine at birth, but became lethargic within hours, was admitted to the NICU, and died
7	Emergency cesarean delivery	Placental abruption	NICU admission	Speed that everything happened
8	Emergency cesarean delivery	Failure to progress	Intermittent fetal bradycardia during labor	Vomiting during cesarean delivery; lack of communication from clinical team
9	Emergency cesarean delivery	Failure to progress, episode of HTN	Short NICU admission	"Everything"; Feeling pain during the cesarean delivery despite the epidural and feeling dismissed by the clinical team; feeling overwhelmed by the series of events
10	Vaginal delivery	Episode of HTN right before assisted rupture of membranes	NICU admission	Afraid that something would happen to baby because of history of miscarriages

11	Elective cesarean delivery	Postpartum hematoma, uterine atony, DIC, emergency partial hysterectomy	None	The contrast between expectations based on previous birth and this experience
12	Vaginal delivery	Risk for placental abruption; Rectocele	None	Feeling unable to express fear and anxiety about giving birth to clinical team
13	Vaginal delivery	Retained placenta	None	Unable to nurse son afterwards. Did not want any medication but received it anyways; Separation from child while in surgery; fear of not knowing what was going on
14	Emergency cesarean delivery	Breech presentation found during labor	None	Unexpected delivery method; Not feeling supported by family and partner
15	Emergency cesarean delivery	Gestational diabetes, HTN; failure to progress	Meconium aspiration; NICU admission for Pneumonia	Feeling “abandoned” during induction due to lack of engagement or communication from clinical team; Son’s NICU admission
16	Emergency cesarean delivery	Placental abruption; hysterectomy; intubation, volume overload, pulmonary edema, renal failure	None	Waking up intubated in ICU and not being able to take care of baby; having an unexpected hysterectomy
17	Emergency cesarean delivery	Placental abruption	Intermittent fetal bradycardia during labor, low birth weight	Feeling isolated during recovery when baby and husband were in NICU; not knowing what to do about underweight newborn
18	Vaginal delivery	Retained products of conception; blood transfusions (2 units) at two weeks postpartum (history of platelet disorder; also on blood thinner for prothrombin mutation)	None	Not being listened to the first 3 times she called after she was discharged from the hospital to say that she was bleeding and that she didn't feel right

19	Dilation and evacuation	Placental insufficiency; DIC; blood transfusion (4 units) and UAE; ICU, intubation	Stillbirth at 20 weeks due to placental insufficiency	Almost dying
20	Emergency cesarean delivery	Failed forceps delivery, cephalopelvic disproportion, inadequate epidural leading to general anesthesia; bladder injury	Fetal malpresentation	Feeling like she missed out on baby's birth because of general aesthesia
21	Emergency cesarean delivery	Failure to progress	None	Shamed for requesting formula; felt like a failure for not giving birth vaginally
22	Emergency cesarean delivery	Hyperemesis gravidarum; "possibly cancerous tumor on right ovary"	None	Being able to feel the cesarean delivery; Not being listened to when voicing concerns related to history of sexual assault; triggering language used by clinical team
23	Emergency cesarean delivery	Failure to progress; intraoperative hemorrhage, massive transfusion, hysterectomy; ICU, intubation	None	Feeling that something bad was going to happen and then it did; not having the energy to hold baby after waking up; not having control of the experience
24	Vaginal delivery	None	None	Not being listened to when she explained that she dilated quickly and having to forgo epidural because of this
25	Scheduled cesarean delivery (breech birth)	Placenta accreta with hemorrhage; hysterectomy; Gauze was left in vagina after the delivery leading to secondary hemorrhage	NICU admission for RDS and hyperinsulinism	Hemorrhaging after discharge and not knowing why; feeling like doctors were trying to cover something up
26	Vacuum assisted vaginal delivery	Induction for HTN; PROM	None	Being induced for high blood pressure; too many people in the room during the delivery which she didn't want

27	"Emergency" cesarean delivery	Perception that expulsive efforts initiated prior to complete dilation; hospitalization for postpartum HTN, magnesium administration	None	Feeling forced into cesarean delivery because of perceived medical error
28	Vacuum assisted vaginal delivery	4th degree tear misdiagnosed as 2nd degree tear	None	Misdiagnosis of tear and not understanding why she was feeling the way she did with what she believed was a 2nd degree tear
29	Emergency cesarean delivery	Blood transfusion	Baby was in posterior position; Meconium aspiration; NICU admission	Worrying about baby's outcome during the cesarean delivery; not hearing reassurance from the care team during the delivery
30	Vaginal delivery	None	Preterm (32 weeks), NICU admission for 6 weeks	Being separated from baby while he was in NICU
31	Vaginal delivery	None	Meconium aspiration	Telling her nurse that the baby was crowning, having the nurse not believe her, and being afraid that the midwife would not get there in time for the baby.
32	Emergency cesarean delivery	Multiple postpartum seizures due to PRES	Shoulder dystocia	Terrified of getting a cesarean delivery and also not expecting it to happen; first seizure experience

Abbreviations: GBS + = Group B Streptococcus positive; APGAR = "Appearance, Pulse, Grimace, Activity, and Respiration"; NICU = Neonatal Intensive Care Unit; HTN = Hypertension; DIC = Disseminated Intravascular Coagulation; ICU = Intensive Care Unit; FGR = Fetal Growth Restriction; UAE = Uterine Artery Embolization; NRDS = Neonatal Respiratory Distress Syndrome; PROM = Prolonged Rupture of Membranes; PRES = Posterior Reversible Encephalopathy Syndrome

References

1. Reed R, Sharman R, Inglis C. Women's descriptions of childbirth trauma relating to care provider actions and interactions. In:2017.
2. Bastos MH, Furuta M, Small R, McKenzie-McHarg K, Bick D. Debriefing interventions for the prevention of psychological trauma in women following childbirth. *Cochrane Database Syst Rev.* 2015(4):CD007194.
3. Morton CH, Hall MF, Shaefer SJM, et al. National Partnership for Maternal Safety: Consensus Bundle on Support After a Severe Maternal Event. *J Obstet Gynecol Neonatal Nurs.* 2021;50(1):88-101.
4. Burgansky A, Montalto D, Siddiqui NA. The safe motherhood initiative: The development and implementation of standardized obstetric care bundles in New York. *Semin Perinatol.* 2016;40(2):124-131.
5. Beck CT. Birth trauma: in the eye of the beholder. *Nurs Res.* 2004;53(1):28-35.
6. Alcorn KL, O'Donovan A, Patrick JC, Creedy D, Devilly GJ. A prospective longitudinal study of the prevalence of post-traumatic stress disorder resulting from childbirth events. *Psychol Med.* 2010;40(11):1849-1859.
7. Grekin R, O'Hara MW. Prevalence and risk factors of postpartum posttraumatic stress disorder: a meta-analysis. *Clin Psychol Rev.* 2014;34(5):389-401.
8. Yildiz PD, Ayers S, Phillips L. The prevalence of posttraumatic stress disorder in pregnancy and after birth: A systematic review and meta-analysis. *J Affect Disord.* 2017;208:634-645.

9. Schwab W, Marth C, Bergant AM. Post-traumatic Stress Disorder Post Partum: The Impact of Birth on the Prevalence of Post-traumatic Stress Disorder (PTSD) in Multiparous Women. *Geburtshilfe Frauenheilkd.* 2012;72(1):56-63.

10. Garthus-Niegel S, von Soest T, Knoph C, Simonsen TB, Torgersen L, Eberhard-Gran M. The influence of women's preferences and actual mode of delivery on post-traumatic stress symptoms following childbirth: a population-based, longitudinal study. *BMC Pregnancy Childbirth.* 2014;14:191.

11. Beck CT, Casavant S. Synthesis of Mixed Research on Posttraumatic Stress Related to Traumatic Birth. *J Obstet Gynecol Neonatal Nurs.* 2019;48(4):385-397.

12. Delicate A, Ayers S, Easter A, McMullen S. The impact of childbirth-related post-traumatic stress on a couple's relationship: a systematic review and meta-synthesis. *J Reprod Infant Psychol.* 2018;36(1):102-115.

13. Nicholls K, Ayers S. Childbirth-related post-traumatic stress disorder in couples: a qualitative study. *Br J Health Psychol.* 2007;12(Pt 4):491-509.

14. Elmir R, Schmied V, Wilkes L, Jackson D. Women's perceptions and experiences of a traumatic birth: a meta-ethnography. *J Adv Nurs.* 2010;66(10):2142-2153.

15. ACOG Committee Opinion No. 736: Optimizing Postpartum Care. *Obstet Gynecol.* 2018;131(5):e140-e150.

16. Yeaton-Massey A, Herrero T. Recognizing maternal mental health disorders: beyond postpartum depression. *Curr Opin Obstet Gynecol.* 2019;31(2):116-119.

17. Goodman JH, Tyer-Viola L. Detection, treatment, and referral of perinatal depression and anxiety by obstetrical providers. *J Womens Health (Larchmt).* 2010;19(3):477-490.

18. Smith MV, Shao L, Howell H, Wang H, Poschman K, Yonkers KA. Success of mental health referral among pregnant and postpartum women with psychiatric distress. *Gen Hosp Psychiatry.* 2009;31(2):155-162.

19. Carter FA, Carter JD, Luty SE, Wilson DA, Frampton CM, Joyce PR. Screening and treatment for depression during pregnancy: a cautionary note. *Aust N Z J Psychiatry.* 2005;39(4):255-261.

20. Bryant AS, Haas JS, McElrath TF, McCormick MC. Predictors of compliance with the postpartum visit among women living in healthy start project areas. *Matern Child Health J.* 2006;10(6):511-516.

21. Henderson V, Stumbras K, Caskey R, Haider S, Rankin K, Handler A. Understanding Factors Associated with Postpartum Visit Attendance and Contraception Choices: Listening to Low-Income Postpartum Women and Health Care Providers. *Maternal and child health journal.* 2016;20(Suppl 1):132-143.

22. American College of Obstetricians and Gynecologists. *ACOG Postpartum Toolkit.* Washington, DC2018.

23. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377-381.

24. Blevins CA, Weathers FW, Davis MT, Witte TK, Domino JL. The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and Initial Psychometric Evaluation. *J Trauma Stress.* 2015;28(6):489-498.

25. Kroenke K, Strine TW, Spitzer RL, Williams JB, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord.* 2009;114(1-3):163-173.

26. Spitzer RL, Kroenke K, Williams JB, Lowe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med.* 2006;166(10):1092-1097.

27. Zhong Q-Y, Gelaye B, Rondon MB, et al. Using the Patient Health Questionnaire (PHQ-9) and the Edinburgh Postnatal Depression Scale (EPDS) to assess suicidal ideation among pregnant women in Lima, Peru. *Archives of women's mental health.* 2015;18(6):783-792.

28. Shin C, Lee S-H, Han K-M, Yoon H-K, Han C. Comparison of the Usefulness of the PHQ-8 and PHQ-9 for Screening for Major Depressive Disorder: Analysis of Psychiatric Outpatient Data. *Psychiatry investigation.* 2019;16(4):300-305.

29. Baas MAM, Stramrood CAI, Dijksman LM, de Jongh A, van Pampus MG. The OptiMUM-study: EMDR therapy in pregnant women with posttraumatic stress disorder after previous childbirth and pregnant women with fear of childbirth: design of a multicentre randomized controlled trial. *Eur J Psychotraumatol.* 2017;8(1):1293315-1293315.

30. Avalos LA, Aghaee S, Kurtovich E, et al. A Mobile Health Mindfulness Intervention for Women With Moderate to Moderately Severe Postpartum

Depressive Symptoms: Feasibility Study. *JMIR mental health.* 2020;7(11):e17405.

31. Shulman B, Dueck R, Ryan D, Breau G, Sadowski I, Misri S. Feasibility of a mindfulness-based cognitive therapy group intervention as an adjunctive treatment for postpartum depression and anxiety. *J Affect Disord.* 2018;235:61-67.
32. Sliwinski SK, Gooding H, de Ferranti S, et al. Transitioning from pediatric to adult health care with familial hypercholesterolemia: Listening to young adult and parent voices. *J Clin Lipidol.* 2017;11(1):147-159.
33. Willms DG, Best JA, Taylor DW, et al. A systematic approach for using qualitative methods in primary prevention research. *Med Anthropol Q.* 1990;4(4):391-409.
34. Miles M, Huberman A. *Qualitative Data Analysis.* Thousand Oaks, CA: Sage Publications; 1994.
35. Foley G, Timonen V. Using Grounded Theory Method to Capture and Analyze Health Care Experiences. *Health Serv Res.* 2015;50(4):1195-1210.
36. Sperlich M, Seng JS, Li Y, Taylor J, Bradbury-Jones C. Integrating Trauma-Informed Care Into Maternity Care Practice: Conceptual and Practical Issues. *J Midwifery Womens Health.* 2017;62(6):661-672.
37. Knight C. Trauma-Informed Social Work Practice: Practice Considerations and Challenges. *Clinical Social Work Journal.* 2015;43(1):25-37.

38. Polmanteer RSR, Keefe RH, Brownstein-Evans C. Trauma-informed care with women diagnosed with postpartum depression: a conceptual framework. *Soc Work Health Care.* 2019;58(2):220-235.

39. Merrick MT, Ford DC, Ports KA, Guinn AS. Prevalence of Adverse Childhood Experiences From the 2011-2014 Behavioral Risk Factor Surveillance System in 23 States. *JAMA pediatrics.* 2018;172(11):1038-1044.

40. Burtle A, Bezruchka S. Population Health and Paid Parental Leave: What the United States Can Learn from Two Decades of Research. *Healthcare (Basel).* 2016;4(2).

41. MacDorman MF, Declercq E, Cabral H, Morton C. Recent Increases in the U.S. Maternal Mortality Rate: Disentangling Trends From Measurement Issues. *Obstet Gynecol.* 2016;128(3):447-455.

42. Rafferty J, Mattson G, Earls MF, Yogman MW. Incorporating Recognition and Management of Perinatal Depression Into Pediatric Practice. *Pediatrics.* 2019;143(1).

43. Brown HL, DeNicola N. Telehealth in Maternity Care. *Obstet Gynecol Clin North Am.* 2020;47(3):497-502.

44. Fawcett EJ, Fairbrother N, Cox ML, White IR, Fawcett JM. The Prevalence of Anxiety Disorders During Pregnancy and the Postpartum Period: A Multivariate Bayesian Meta-Analysis. *J Clin Psychiatry.* 2019;80(4).

45. Bowen A, Bowen R, Butt P, Rahman K, Muhajarine N. Patterns of depression and treatment in pregnant and postpartum women. *Can J Psychiatry.* 2012;57(3):161-167.