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Screening for childbirth-related posttraumatic stress disorder using the City Birth Trauma Scale: A pilot project

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Final Manuscript

Screening for childbirth-related posttraumatic stress disorder using the City Birth Trauma
Scale: A pilot project
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Abstract

Purpose: The purpose of this project is to identify birthing people with childbirth-related posttraumatic stress disorder (CB-PTSD) symptoms using the City Birth Trauma Scale (CBTS). Once identified, at risk birthing people will receive verbal education about CB-PTSD and a social work consultation, if necessary.

Background: A birth is deemed traumatic, and thus fulfills one of eight criteria of posttraumatic stress disorder (PTSD), when during labor, delivery, and/or immediately postpartum, the birthing person perceives themselves and/or their baby's life to be in danger and/or are at risk of being critically injured. These events include but are not limited to emergency cesarean sections, neonatal intensive care unit admissions, maternal hemorrhages, and operant vaginal deliveries. Up to 50% of birthing people describe a traumatic birth experience, with 9%–44% going on to develop CB-PTSD. One-third of birthing people with postpartum depression also develop CB-PTSD symptoms, lending to a significant gap in standard postpartum maternal mental health screening. Early detection is crucial because traumatic memories respond most robustly to trauma-specific mental health treatments two to three months after the trauma occurs. Screening for CB-PTSD increases the chance of birthing people receiving timely, trauma-specific mental health treatment.

Methods*:* CBTS is the only screening tool created specifically for CB-PTSD that incorporates the DSM-5 criteria for PTSD. This tool has excellent reliability and is easy to understand. The Doctor of Nursing Practice student screened 30 birthing people for CB-PTSD with the City Birth Trauma Scale on a postpartum unit. The postpartum nurse pre-screened their patients to determine if they were eligible to agree to participate in the

evidence-based project. The DNP student provided participating patients with the CBTS to complete and education about CB-PTSD. If the patient was CBTS positive (CBTS(+)), the DNP student notified the patient's nurse who then determined if a social work consultation is warranted.

Results: Postpartum nursing staff were able to manage the increased workload involved with pre-screening 30 birthing people for this pilot project. Of the 30 birthing people who were approached to participate in the project, 21 agreed to participate. The nine birthing people who were approached but declined to participate cited reasons of being too tired, in pain, or did not think they needed the intervention. Of the 21 birthing people screened, six were screened to be CBTS(+). Of those who were CBTS(+), two did not have social work consultations placed for routine reasons, heightening that trauma sequelae are not necessarily detected with routine postpartum depression and anxiety screening alone due to its unique symptomology and confounding factors.

Implications for Clinical Practice: The success of this project opens the door for future projects to explore feasibility of universally screening for CB-PTSD on a postpartum unit. CB-PTSD screening may also be appropriate for other areas of reproductive medicine and pediatric well-baby visits. Other areas of trauma informed care that can be explored are education about trauma-informed language in women's health nursing, education about therapeutically talking to patients about emergent medical procedures, and screening for adverse childhood events and interpersonal violence.

Keywords: childbirth-related PTSD, postpartum, PTSD Screening, posttraumatic stress disorder

Screening for Childbirth-Related Posttraumatic Stress Disorder Using the City

Birth Trauma Scale: A Pilot Project

Description of Clinical Problem

The perinatal period, which is defined as the totality of the pregnancy and one year postpartum, can be a psychologically vulnerable time for birthing people (Cook, et al., 2018). For birthing people who have preexisting mood and anxiety disorders, the perinatal period can alter and/or exacerbate these conditions (Cook, et al.,). Birthing people are also vulnerable to developing new onset mental health disorders, including depression, anxiety, obsessive-compulsive disorder, psychosis, bipolarity, and posttraumatic stress disorder (PTSD; Beck et al., 2021). These conditions are known collectively as perinatal mood and anxiety disorders (PMADs) and affect up to one in seven birthing people (Luca et al., 2020)

When left untreated or undertreated, PMADs are associated with negative outcomes for birthing people, their child, and communities. Untreated PMADs have been associated with preterm birth, low birth weight, and intrauterine growth restriction, which are the leading causes of infant morbidities and mortality (Simonovich et al., 2021). Perhaps the most devastating outcome of untreated PMADs are maternal suicides. Moran Vozar et al. (2020) emphasized that 10%–30% of birthing people who die in the perinatal period die by suicide and drug overdoses, and they are often ranked as the second most common cause of death in postpartum birthing people. Finally, untreated PMADs are associated with an economic burden that affects communities. Following one birth cohort in the United States from conception to five years postpartum, Luca et al. (2020) estimated untreated PMADs cost $14 billion. The researchers attributed these costs to

lowered economic productivity, increased preterm births, and mental health care spending.

Perinatal PTSD can occur from when pregnancy begins, up to 1 year following childbirth (Luca et al., 2020). Perinatal PTSD can have multiple triggers. A birthing person can have pre-existing PTSD from an event that is or is not related to childbirth, but in turn gets flared up by the pregnancy and/or birthing process (Yildiz et al., 2017). One of the most common examples of pre-existing trauma that can make one more susceptible to perinatal PTSD is having a history of childhood sexual abuse (Beck et al., 2021). People who have experienced childhood sexual abuse are subsequently more prone to perceiving the invasiveness of childbirth as reminiscent of their abuse, and in turn become retraumatized (Yildiz et al., 2017). A birthing person can also develop new-onset PTSD while they are pregnant from external events, such as domestic violence, war, or natural disasters (Yildiz et al., 2017). Perinatal PTSD prevalence rates vary greatly. Regarding PTSD that occurs in the postpartum period, which is the primary focus for this project, Yildiz et al., (2017) reviewed of 28 studies and found that perinatal PTSD occurred in 3.1% of birthing people in community samples and 15.7% in high-risk samples. The authors define high-risk birthing people as those who are multiparous, have pre-existing mental health disorders, obstetric complications, a longer duration of childbirth labor, emergency cesarean procedure, and higher levels of perinatal stress (Yildiz et al., 2017; Dekel et al., 2018). First line treatments for PTSD are trauma-specific psychotherapies, including cognitive behavioral therapy, prolonged exposure, cognitive processing, and eye movement desensitization and reprocessing (Stein et al., 2021). Second line treatment includes pharmacological interventions, such as

antidepressants or Prazosin for nightmares (Stein et al., 2021). Notably, one-third of birthing people with postpartum depression also meet criteria for perinatal PTSD, and trauma disorders require different treatments than perinatal depression or anxiety (Stein et al., 2021).

One subcategory of perinatal PTSD is child-birth related PTSD (CB-PTSD), which is the focus of this project. As its name implies, CB-PTSD can develop when a traumatic event occurs during childbirth or immediately postpartum (Ayers et al., 2018). A birth fulfills criterion A for the American Psychiatric Association's Fifth Edition of the Diagnostic and Statistical Manual's (DSM-5) definition of PTSD when during labor and/or immediately postpartum, the birthing person perceives themselves and/or their baby's life to be in danger and/or are at risk of being critically injured (Ayers et al., 2018; DSM-5, 2013). Traumatic birthing events include but are not limited to emergency cesarean sections, neonatal intensive care unit admissions, maternal hemorrhages, maternal cerebral vascular attacks, maternal amniotic embolus, intrauterine fetal demise, and operant vaginal deliveries (O'Donovan et al., 2014). On average, 9% of birthing people will develop CB-PTSD, but the incidence rate increases up to 44% with obstetrical risk (Furuta et al., 2012). However, Dekel et al., (2018) found that up to 25% of birthing people experience elevated trauma symptoms and 6% meet criteria for CB-PTSD 1 month after giving birth to a healthy, term baby. CB-PTSD is associated with negative outcomes for parent and baby, including impaired bonding, breastfeeding, and impaired infant behavioral and cognitive development (Furuta et al., 2018).

While screening for perinatal depression and anxiety is becoming more common, screening for CB-PTSD has yet to gain as much traction (Ayers et al. 2018). Screening

for CB-PTSD is necessary because, as previously mentioned, there is overlap between the diagnostic criteria for postpartum depression and CB-PTSD, and it is crucial for these two disorders to be differentiated because they require different treatments (Dekel et al., 2018). Early screening is also crucial because traumatic memories respond most robustly to trauma-specific mental health treatments two to three months after the traumatic event, childbirth, occurs (Shapiro et al., 2019). This project seeks to promote a culture change in the obstetric setting where birthing people have permission to view childbirth as a complex event, and a successful birth is more than the outcome of the baby. Additionally, screening for trauma is recommended by several professional organizations, such as Joint Commission, the Women's Preventive Services Initiative, the National Academy of Medicine, the American Medical Association, and the U.S. Preventive Services Task Force (Committee on Health Care for Underserved Women, 2021).

Literature Review

I conducted a literature review to inform this project. The literature search was conducted through Pubmed, Cinhal, Academic Search Premier, EBSCOT Host, Alt Health Watch, Ovid, PsycARTICLES, PsycINFO, Sage Premier Journal, Cochrane, and Wiley Interscience Journals. Keywords used for this search include birth trauma, childbirth trauma, PTSD, perinatal trauma, perinatal PTSD, postpartum PTSD, childbirth PTSD, screening birth trauma, and screening childbirth trauma. Perinatal mental health trauma research is recently starting to gain traction, so there is no Level 1 research and limited Levels 2 and 3 research, and most of the literature being of Level 4 and Level 5. Level 1 evidence consists of experimental studies, such as randomized controlled trials (RTC), systematic reviews of randomized controlled trials, and may also include meta-

analyses (Dang & Dearholt, 2018). Level 2 evidence contains quasi-experimental studies, systematic reviews of RTCs with or without meta-analyses. Level 3 evidence contains non-experimental studies, systematic reviews of TCR, quasi-experimental, or non-experimental studies with or without meta-synthesis. Level 4 research includes opinions of nationally recognized organizations, clinical practice guidelines, or consensus panels. Level 5 research includes literature reviews, quality improvement programs, case reports, and expert opinions. In the following section, I reviewed literature on screening for PTSD in the perinatal demographic. The purpose, strengths, and limitations of each article will be discussed as well as how the article informed the project.

Ayers et al. (2018) developed a screening tool called the City Birth Trauma Scale (CBTS) to help clinicians recognize CB-PTSD. The CBTS is unique from other trauma screeners because it references DSM-5 criteria for PTSD and is tailored to birthing people in the perinatal period (Ayers et al., 2018). Having a screening tool for CB-PTSD that reflects DSM-5 criteria, versus DSM-4 TR criteria, is important because the newer criteria expanded the ways in which one can be exposed to trauma to include direct or indirect exposure (DSM-5, 2013; DSM-4 TR, 2000; Ayers et al., 2018). That being said, it is important to recognize that the research team did retain one former criterion (that a birthing person needs to respond to the trauma with intense fear, helplessness, or horror, and experience emotional numbing; Ayers et al., 2018). Participants in this study ranged from age 18 years to 46 years and were between zero and 12 months postpartum (Ayers et al., 2018). The CBTS has excellent reliability (Cronbach's $\alpha = 0.92$) and is easy to understand (Flesch reading score 64.17; Ayers et al., 2018). This article served as the foundation for this EBP project because it created a valid, reliable screening tool to help

capture this underdiagnosed demographic of birthing people sustaining child-birth related trauma.

Dekel et al. (2018) performed a non-experimental study where they administered the PTSD Checklist tool referencing the DSM-5 to 685 birthing people who were at least 18 years of age and gave birth to a live baby in the previous six months. The authors found 90% of birthing people screened who met criteria for CB-PTSD also met criteria for postpartum depression, even without medical complications during their delivery (Dekel et al., 2018). Conversely, they found one third of birthing people who had been diagnosed with postpartum depression also met criteria for CB-PTSD (Dekel et al., 2018). This research highlights the overlapping criteria for postpartum depression and CB-PTSD, which can often lead to misdiagnosis or underdiagnosis of this demographic. It is imperative to differentiate these diagnoses because depression treatment differs greatly from trauma treatment (Dekel et al., 2018). This research highlights the importance of implementing broader psychiatric symptom screening in the postpartum demographic to help prevent trauma being missed by clinicians.

One year later, Deckel et al. (2019) used the same sample to examine associations between the PTSD Checklist for DSM-5 (PCL-5), Maternal Attachment Inventory, and the Peritraumatic Distress Inventory. The results suggested that there were lower levels of parental attachment in birthing people who experienced CB-PTSD than compared to birthing people who had pre-existing PTSD or no PTSD at all. This further supports screening at-risk birthing people for trauma symptoms to lessen the risks of associated sequalae, such as impaired parental bonding, which the literature shows can negatively impact the birthing patient and generations to come (Dekel et al., 2018).

Dikmen-Yildiz et al. (2017) collected data as part of a nonexperimental, longitudinal study of 829 birthing people who completed a Posttraumatic Diagnostic Scale at six months postpartum to examine the psychometric properties of the Turkish version of the CBTS. Of this sample of birthing people, 64.5% had pre-existing PTSD prior to giving birth. Overall, 9.2% of these birthing people met criteria for CB-PTSD after six months postpartum. Additionally, the research team found 48% of those who met CB-PTSD criteria also met criteria at four and six months postpartum, showing that early screening for CB-PTSD can accurately predict risk of developing CB-PTSD.

Garthus-Niegel et al. (2018) performed a nonexperimental, prospective cohort study of 1,480 birthing people who completed an Impact of Events Scale to measure CB-PTSD understand how CB-PTSD influences breastfeeding. This sample of birthing people was six times at a greater risk of breastfeeding non-initiation, and 44.2% of these birthing people cited that this was due to having a lack of supply of breastmilk. Cortisol has been found to have a negative impact on lactation, so it is intuitive that having PTSD, and thus higher, more reactive levels of cortisol, could also negatively impact lactation (Garthus-Niegel et al., 2018). This research supports the early identification and corresponding treatment of CB-PTSD as a means of lowering non-initiation and cessation of breastfeeding rates caused by PTSD-associated lack of supply and avoidance behaviors. (Garthus-Niegel et al., , 2018).

Orovou et al. (2020) performed a quasi-experimental, prospective study involving 160 birthing people who received either an elective or emergency cesarean section. The data were collected on the second day postpartum and six weeks postpartum. The research team determined that 40% of these birthing people found the cesarean section

procedure to be traumatic, and 31.7% of those who had an emergency cesarean met criteria for CB-PTSD (Orovou et al., 2020). These findings support the endeavor of screening birthing people for CB-PTSD after unforeseen birth complications.

Thiel et al. (2019) performed a nonexperimental study of 685 birthing people who were three months postpartum and gave them the Peritraumatic Dissociative Questionnaire and PCL-5. This group reported more dissociation symptoms if they had an operant vaginal delivery or emergency cesarean section, compared to routine vaginal births (Thiel et al., 2019). This study shows that childbirth can be stressful enough to trigger dissociative and trauma responses and highlights how screening for dissociation after childbirth can be an effective way of identifying birthing people who are at an increased risk of developing CB-PTSD (Thiel et al., 2019).

Zaat et al. (2018) performed a systematic review of level one and level two literature that included five studies. The five studies were prospective and retrospective and had seventeen to one hundred sixty-seven birthing people screened using the Impact Event Scale, Traumatic Event Scale, or PCL-5 between week one to one year postpartum. It was determined that 64% of the patients who had hysterectomies after experiencing a postpartum hemorrhage met criteria for PTSD. This finding shows that criterion A for CB-PTSD can extend beyond the initial delivery and result of the baby, and any birthing person who withstood an obstetric complication in the postpartum period should be screened for CB-PTSD.

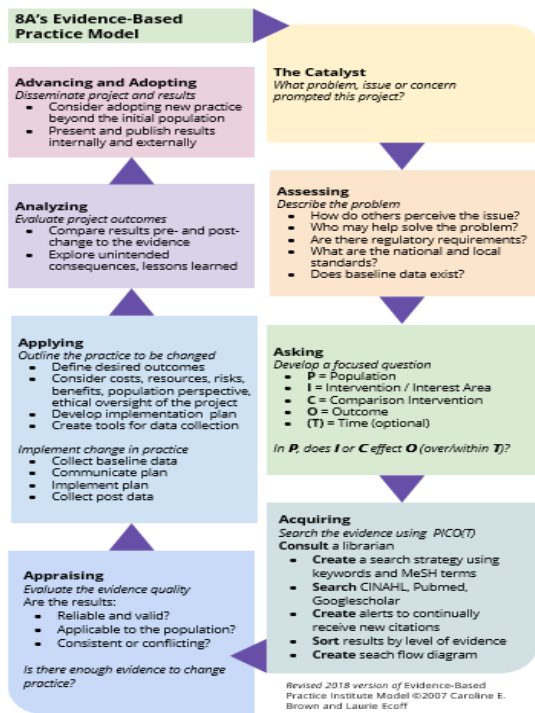**Evidence Based Practice Model**

This evidence-based project (EBP) was framed by the 8A's EBP model (see Figure 1). The 8A's EBP Model was developed by Dr. Laurie Ecoff and Dr. Caroline

Brown in 2011 and its strengths lie in the fact that it is easy to remember and apply as a guide for conducting EBP projects. It helps to organize the curriculum involved with implementing EBP projects and supports learning in a logical, sequential format. (Brown & Ecoff, 2011)

The 8A's EBP Model includes eight steps: a catalyst, assessing, asking, acquiring, appraising, applying, analyzing, advancing, and adopting. The catalyst for this EBP project is that CB-PTSD is common and underrecognized and is currently not captured in routine, universal postpartum mental health screening. The assessing step revealed that the American College of Obstetricians and Gynecologists in April 2021 also recommended universal trauma screening (Committee on Health Care for Underserved Women, 2021). The Asking step requires you to develop a PICOT question. The acquiring step recommends that one consults a librarian to perform an extensive literature review. While appraising the evidence, key extant evidence was assessed to be at Johns Hopkins Levels of Evidence Model at levels 2 and 3, and this indicates that there is enough quality evidence to change practice. To apply this evidence, I screened thirty, inpatient, birthing people on a postpartum unit using the CBTS. The next step involves project outcome analysis. This project included analysis of several outcomes including the frequency of birthing people being offered versus accepting screening. Advancing and adopting are the final A's and involve disseminating project results and implementing the practice change in larger systems.

Figure 1

Evidence Based Practice Model

8A's Evidence-Based Practice Model

Advancing and Adopting
Disseminate project and results
- Consider adopting new practice beyond the initial population
- Present and publish results internally and externally

The Catalyst
What problem, issue or concern prompted this project?

Analyzing
Evaluate project outcomes
- Compare results pre- and post-change to the evidence
- Explore unintended consequences, lessons learned

Assessing
Describe the problem
- How do others perceive the issue?
- Who may help solve the problem?
- Are there regulatory requirements?
- What are the national and local standards?
- Does baseline data exist?

Applying
Outline the practice to be changed
- Define desired outcomes
- Consider costs, resources, risks, benefits, population perspective, ethical oversight of the project
- Develop implementation plan
- Create tools for data collection

Implement change in practice
- Collect baseline data
- Communicate plan
- Implement plan
- Collect post data

Asking
Develop a focused question
- **P** = Population
- **I** = Intervention / Interest Area
- **C** = Comparison Intervention
- **O** = Outcome
- **(T)** = Time (optional)

*In **P**, does **I** or **C** effect **O** (over/within **T**)?*

Appraising
Evaluate the evidence quality
Are the results:
- Reliable and valid?
- Applicable to the population?
- Consistent or conflicting?

Is there enough evidence to change practice?

Acquiring
Search the evidence using PICO(T)
Consult a librarian
- **Create** a search strategy using keywords and MeSH terms
- **Search** CINAHL, Pubmed, Googlescholar
- **Create** alerts to continually receive new citations
- **Sort** results by level of evidence
- **Create** seach flow diagram

Revised 2018 version of Evidence-Based Practice Institute Model ©2007 Caroline E. Brown and Laurie Ecoff

Note. May use without permission if properly cited (Ecoff et al., 2018)

PICOT Question

The aim of this project is to identify people who give birth with CB-PTSD symptoms using the CBTS. The PICOT guiding this project is, "In a sample of 30 inpatient, postpartum birthing people at Sharp Healthcare's postpartum unit in March 2022, how does implementing CB-PTSD screening using the CBTS affect the number of people who give birth being identified for being at risk of CB-PTSD and receiving CB-PTSD education?"

Evidence Based Intervention

This section will review the CBTS, pre-intervention process, as well as the intervention process. The validated measure used in this project is the CBTS (please see appendix H). As discussed, CBTS is the only scale in the literature that was created specifically for child-bearing people that incorporates the DSM-5 criteria for PTSD. The

CBTS incorporates the eight criteria for PTSD into a 29-item questionnaire, with scores ranging from 0 to 60 to denote severity. There is no official "cut off" score, but Osório et al. (2012) determined scores greater than 28 indicate an increased risk of developing CB-PTSD, even if one does not report symptoms from all four categories of PTSD symptoms, which are intrusion symptoms, avoidance behaviors, negative alterations in cognition and mood, and marked alterations in arousal, and reactivity; Osório et al., 2021; DSM-5, 2013). The CBTS's validity was also replicated in cross-cultural studies and is available in Hebrew, Croatian, Turkish, Brazilian, and Spanish (Osório et al., 2021). Prior to intervention implementation, I gained permission from the CBTS author, Dr. Susan Ayers (please see appendix F), and garnered Sharp Healthcare buy-in by meeting with the Director of education, research, and professional practice, the nursing manager and social work supervisor of the Sharp Healthcare postpartum unit, and the social worker who facilitated the Sharp Healthcare's postpartum support group. The Director of education, research, and professional practice was crucial in guiding me through the application process for the Sharp Healthcare Institutional Review Board (IRB). To meet the requirements of Sharp Healthcare's IRB, I created an in-service designed to educate postpartum staff about CB-PTSD, about the project flow, as well as expectation for postpartum staff involvement. The CB-PTSD in-service was a 1 page long, double sided pamphlet that took less than five minutes to read (please refer to appendix G). At the bottom of the in-service pamphlet's front side, there is a QR code which directed postpartum staff to an anonymous CB-PTSD in-service learner evaluation. The learner evaluation was developed to evaluate the reaction of postpartum nursing and social work staff towards the practice change and CB-PTSD in-service. Additionally, the evaluation

included questions which asked how well the staff felt they learned about CB-PTSD and
CB-PTSD screening. The pamphlet also provided another QR code that directed staff to
an optional, 10-minute, pre-recorded video made by myself that provided more
information about CB-PTSD.

Once the in-service and in-service learner evaluation was distributed to the
postpartum unit staff, I scheduled a day to implement the intervention on the unit (see
Figure 2).

Figure 2

CB-PTSD Screening EBP Project Flowsheet
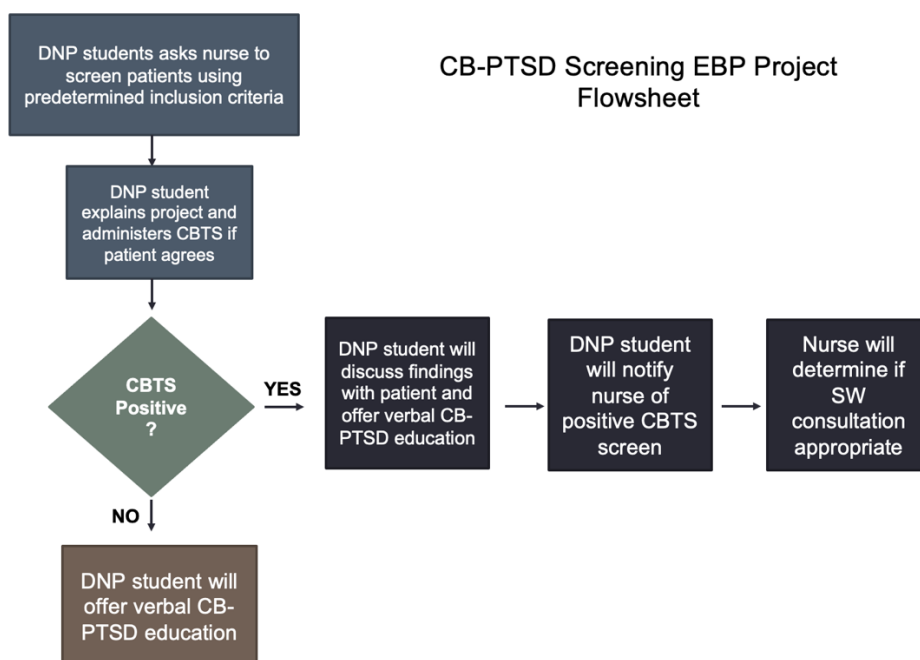
Once I entered the unit, I asked the postpartum nurses to pre-screen their patients to
determine if a patient is eligible to agree to participate in the evidence-based project. The
pre-screening criteria included the birthing person being a minimum of eighteen years
old, admitted inpatient to the postpartum unit, had a Covid-19 negative status, was status

post live delivery, English speaking, and participation in the project would not impede on their routine plan of care.

Once eligible patients were identified, I approached these patients to see if they agreed to participate, and if so, the CBTS was given to the birthing person to fill out. I scored the CBTS, and for the purpose of this project, a birthing person was considered "at risk of CB-PTSD" (CBTS(+)) if they answered yes to either one, or both of the first two questions of the CBTS. The purpose of the first two questions were to identify whether the results of the birthing person's delivery met criterion A of the DSM-5's definition of PTSD, which is that the patient was directly or indirectly exposed to an actual or threatened death, serious injury, or sexual violence (DSM-5, 2013). If a birthing person answered "no" to both of the first two questions, they were deemed "CBTS negative" (CBTS(-)) and did not have to fill out the remainder of the screener. If the birthing person was CBTS(+), then they were encouraged to fill out the remainder of the screener, which included 27 other questions that inquired whether the birthing person was also experiencing trauma symptoms.

For this project, the demographic screened did not fulfill criteria F of the DSM-5's definition of PTSD, which is having trauma symptoms for greater than month, so a diagnosis through this screening project is not possible. Regardless of their score, if a birthing person screened CBTS(+), I offered education about CB-PTSD and notified their postpartum nurse. The postpartum nurse checked the patient's chart to see if the birthing person already had a social work consultation placed for routine reasons. Routine reasons for social work consultation placement on this postpartum unit included being an adolescent parent, the baby was being placed for adoption, concerns for domestic

violence, fetal demise, high risk pregnancies, neonatal intensive care unit admissions, no

prenatal care, substance abuse, surrogacy, and other, which tends to be used for "nursing

judgement".

    If a birthing person was found to be CBTS(+) and they did not already have a

social work consultation placed for routine reasons, the postpartum nurse determined if

the patient warranted a social work consultation. The social worker during their

consultation provided the birthing person with reproductive mental health education and

resource packet and assessed for safety prior to the birthing person being discharged.

Project Implementation & Practice Change Process

    This evidence-based project was initiated based on my experience as an inpatient

obstetric nurse. I noted a lack of trauma informed care in the inpatient obstetric setting

despite it being a very acute area of healthcare. I was a Doctor of Nursing Practice

student and worked at Sharp Healthcare's psychiatric hospital as a registered nurse, and I

reached out to Sharp Healthcare's obstetric hospital in Spring of 2021 to inquire if it

would be feasible to implement an evidence-based project on their postpartum unit. I met

with the postpartum unit's nursing manager, social work manager, and the social worker

who facilitated the hospital's postpartum support group, who verified that childbirth-

related trauma was a common topic of discussion for their group participants. I met with

the director of education, research, and professional practice to discuss policy regarding

being approved for EBP project implementation in their hospital via their IRB. After

extensive preparation and deliberation, the author's IRB application was approved by the

nursing and social work managers and submitted to the IRB on January 11, 2022, and

was accepted by the hospital's IRB and university-affiliated IRB on February 21, 2022. The project was implemented on the postpartum unit on March 2, 2022.

Results

This section will review the results of the intervention and the in-service learner evaluation. On March 2, 2022, the postpartum patients on the postpartum unit at Sharp Healthcare's obstetrics hospital were pre-screened by the postpartum nursing staff and I approached 30 eligible birthing people to see if they would like to participate in an EBP project. Twenty-one birthing people agreed to participate. The 9 birthing people who were approached but declined to participate cited reasons of being too tired, in pain, or did not think they needed the intervention.

Figure 1

Patient Participation
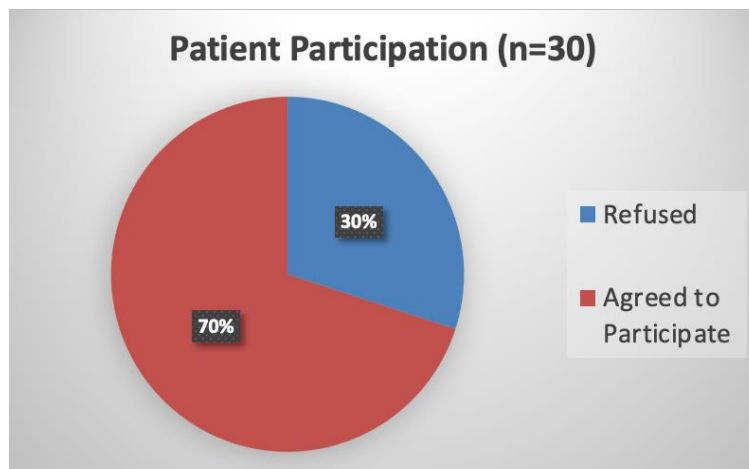
Of the 21 birthing people screened, 6 were CBTS(+). Out of those who were CBTS(+), the average CBTS score was 17.8, ranging from 8 to 29. This equates to a 16.7% prevalence rate and is consistent with existing prevalence rates quoted in the literature (Osório et al., 2012). Of the six birthing people who were CBTS(+), four answered "yes" to both Questions 1 and 2. As a reminder, these questions determine if

the birth person believed they or their baby would be seriously injured or could die. Two CBTS(+) birthing people answered "yes" to Question 2, which asks if the participant perceived that themselves or their baby might be seriously injured, but did not believe they would die. Two of the CBTS(+) birthing people did not have social work consultations placed for routine reasons, heightening that trauma sequelae is not necessarily detected with routine postpartum depression and postpartum anxiety screening alone. A social work consultation was offered to these two patients but they both declined because they were about to discharge home, so social work did not end up needing to perform an additional consultation for this EBP project.

Figure 2

CBTS Findings
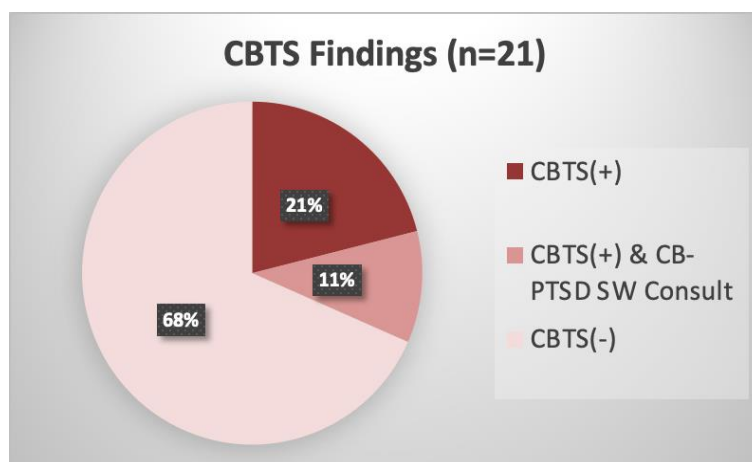
Note. Frequency of CBTS(+)(n = 4) and CBTS(-)(n = 15) screened; Frequency of CBTS(+) birthing people who did not already have a social work consultation (n = 2)

As for the in-service learner evaluation, out of 136 staff members, 12 completed the CB-PTSD in-service learners evaluation, equaling an 8.8% response rate, which was

less than the target response rate of 25% set prior to IRB submission. Specific reasoning for low postpartum staff learners evaluation submission was not collected.

Of those who completed the CB-PTSD in-service learners evaluation, answers to question one yielded that 75% read only the pamphlet, and 25% read both the pamphlet and watched the additional video. 66.7% agreed that they were satisfied with the CB-PTSD in-service overall, 25% strongly disagreed, and 8.3% neither agreed nor disagreed. 33.3% reported that they strongly agreed that the in-service enhanced their knowledge of CB-PTSD, 33.3% somewhat agreed, 25% strongly disagreed, and 8.3% neither agreed nor disagreed. Regarding whether CB-PTSD was relevant to their daily job, 50% strongly agreed, 33.3% somewhat agreed, and 16.7% strongly disagreed. Lastly, 36.4% strongly agreed that they would recommend the CB-PTSD in-service to others, 36.4% somewhat agreed, and 27.3% strongly disagreed.

Cost-Benefit Analysis

The cost of this project is minimal due to most of the implementation being done by myself to reduce burden to front line workers. Therefore, the project could not ascertain a realistic cost for nursing labor. It took less than fifteen minutes for the postpartum nurse to pre-screen all the postpartum patients to determine if they were eligible to agree to participate in the project. For the 12 people who submitted the in-service learners evaluation, it took approximately 15 minutes per person to read the pamphlet, watch the optional video, and submit their learners evaluation. The paper used for the 30 patient copies of the CBTS cost me $6(USD). Per the manager of social work, the billing cost of a social worker performing a consultation is $0. This project yielded 2 additional social work consultations than what was routinely performed, but since the

social work consultations were declined by the patients, there was no additional burden placed on social work staff. Over a 9-month period, I received an estimate of greater than fifty hours of support and guidance to help fine tune this project for IRB submission so it reflected the Sharp Healthcare standard. There was no additional financial burden related to the implementation of this project.

The average cost of untreated perinatal mood and anxiety disorder is $32,300 per birthing person from conception to the first five years after the child's birth (Luca et al., 2020). This pilot project yielded a frequency of 32% of the postpartum birthing people (n=6) screened were considered at risk for developing CB-PTSD. If extrapolated, the identification of these 6 birthing people through this project may yield potential savings of $193,800 over the next five years.

Discussion, Challenges, and Implications

This section will discuss challenges and implications of this pilot project. Initially, there was vigilance around ensuring that this project was evidenced based, and moreover not a research study, the latter of which the postpartum unit was unable to support at that time. For future students, this could be remedied by being very clear about what kind of project one wants to do and communicate this clearly. A major challenge project implementation involved organization's IRB process. Because pregnant people and people suffering from mental illness are vulnerable populations, Sharp Healthcare's IRB is rightfully very rigorous about protecting their patient's health information. To adhere to IRB regulations, the patient's chart was protected from me, a person not directly involved in the patient's healthcare, in favor of having the postpartum nurse pre-screen their patients with a set of inclusion criteria. Additionally, the only deidentified variables

that could be collected for this project were the CBTS score, if they were CBTS(+) or CBTS(-), and whether they already had a social work consultation placed, or not.

Another barrier to performing this project involved patient participation. The immediate postpartum period can be a very exhausting time because many birthing people are physically recovering from injuries or surgeries related to their child's birth, and they also need to adjust to a lack of quality sleep due to frequent breastfeeding. Additionally, the eligible participants may not have perceived their birth as traumatic, leading to a belief that screening was not necessary. The 2 birthing people who were screened CBTS(+) and did not already have a social work consultation placed for routine reasons declined the offered of receiving a social work consultation in favor of discharging to home sooner. Future projects may choose to implement this project in a less acute setting, such as at well baby visits, or at six-week postpartum checkups, when the birthing person has had time to physically heal and see whether this helps with patient compliance.

In conclusion, the results of this pilot project that approximately 29% of birthing people screened were at risk for CB-PTSD, aligns with the 9-44% prevalence rate identified in the literature. (Furuta et al., 2012). Of the birthing people approached, 70% agreed to participate, suggesting that a larger sample of postpartum birthing people may also be predominantly comfortable with discussing the topic of CB-PTSD. This project yielded a prevalence rate of 9.5% of participants who were CBTS(+) but did not already have a SW consultation placed for routine reasons, heightening that trauma disorders are not necessarily detected with depression and anxiety screening alone.

The postpartum nursing and social work staff were able to manage the increased workload involved with pre-screening 30 birthing people and the two additional social work consultations that were placed due to the implementation of this project. To implement CB-PTSD screening universally, postpartum staff buy-in would need to be increased. Increased buy-in could be accomplished through requiring postpartum staff to read the CB-PTSD pamphlet and submit an in-service learners evaluation to ascertain strengths and weaknesses perceived by the staff. Another suggestion would be for researchers to develop a CB-PTSD screening tool that is shorter in length and thus easier to implement in the inpatient setting.

Future projects will need to be performed to assess for the feasibility of universal screening on a postpartum unit, in other areas of reproductive medicine, or at pediatric well-baby visits. This project also opens conversations about other evidence-based project implementation related to trauma-informed care, such as education about trauma informed language in women/s health nursing, how clinicians can therapeutically communicate with patients about emergency medical procedures, or screening for adverse childhood events and interpersonal violence.

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