Assessing and Treating PTSD from Obstetrical and Neonatal Traumas: A Case Series

Tiffany Hopkins & Samantha N. Hellberg

Abstract: This research describes themes in symptom presentation of PTSD following obstetrical and neonatal traumas and data regarding the implementation and effectiveness of prolonged exposure (PE) in perinatal populations in the southeastern United States. A case series of perinatal women with PTSD from obstetrical and newborn events completed a diagnostic interview and assessments of PTSD and depression pre- and post-treatment with PE. Results suggest themes associated with obstetrical and neonatal traumas. No adverse events were reported. PTSD and depression symptoms reached full remission at post-test. Findings provide initial guidelines for implementing PE and preliminary support for the feasibility, safety, and effectiveness of PE for perinatal PTSD.

Keywords: trauma, post-traumatic stress disorder, prolonged exposure, pregnancy, postpartum

Perinatal mental health represents a critical public health concern (Howard et al., 2014; Van Mullem & Tillett, 2009; Yildiz, Ayers, & Phillips, 2017). Post-traumatic stress disorder (PTSD) has recently been recognized as an impactful, prevalent, and undertreated, albeit under-researched, perinatal condition (Cirino & Knapp, 2019; Simpson et al., 2018). Between 1-30% of individuals are estimated to develop perinatal PTSD, with rates of approximately 3% in community samples and 16% in high-risk populations (Grekin & O'Hara, 2014). PTSD enacts long-term, adverse impacts on mental and physical health (Atwoli et al., 2015; Pacella et al., 2013). Within the perinatal period, these effects can impact fetal and newborn health and development (Cook et al., 2018), maternal-infant bonding (Muzik et al., 2016), relationship functioning (Delicate et al., 2018), and perinatal-specific health outcomes (Shaw et al., 2017).

Tiffany Hopkins, Ph.D., is a clinical psychologist within the Center for Women's Mood Disorders and Perinatal Psychotherapy Program at UNC-Chapel Hill. She specializes in trauma recovery and emotion dysregulation in perinatal populations. **Samantha Hellberg, MA**, is a doctoral candidate in Clinical Psychology at UNC-Chapel Hill and NSF Fellow. Ms. Hellberg's research and clinical interests center on perinatal mental health, particularly traumatic stress, emotion dysregulation, and sleep disturbance. She aims to help optimize personalized, effective, and accessible interventions for high-risk caregivers.

Perinatal populations have been largely excluded from PTSD research and treatment guidelines, and few investigations have examined the acceptability and effectiveness of empirically supported, trauma-focused psychotherapies for the treatment of perinatal PTSD (P-PTSD; Peeler et al., 2013; Vesel & Nickasch, 2015; Cirino & Knapp, 2019). This article bridges that gap by extending the understanding of the phenomenology and treatment of P-PTSD to reduce the considerable costs for gestational parents, infants, and families.

P-PTSD emerges via three primary pathways: 1) clinically significant symptoms precede pregnancy and are first diagnosed during the perinatal period, 2) subthreshold PTSD symptoms result from pre-pregnancy trauma (e.g., sexual abuse) that worsen during pregnancy or postpartum, or 3) novel PTSD symptoms onset following trauma experienced perinatally (Beck & Casavant, 2019; Cirino & Knapp, 2019; Vignato et al., 2017). In the latter case, index traumas that evoke PTSD may involve either traumatic events that occur in, but are non-specific to, the perinatal period (e.g., car accidents) or perinatal-specific traumas, such as obstetrical emergencies, newborn-related traumatic events, or traumatic perinatal losses. This final pathway remains the most understudied, and further examination is needed to inform identification, diagnosis, conceptualization, and evidence-based treatment.

The present case series aims to address research gaps in the presentation and treatment of P-PTSD related to perinatally-specific traumas. The study addresses three primary goals: 1) to help identify common symptom presentations of P-PTSD for perinatal traumas, 2) to provide preliminary evidence for an empirically supported, exposure-based treatment for P-PTSD, and 3) to provide guidance related to the implementation of Prolonged Exposure (PE) in the perinatal period. To address these aims, we analyzed clinical data from eight women receiving outpatient PE therapy for PTSD during the perinatal period. All individuals received treatment for an index trauma related to an obstetrical experience, traumatic perinatal loss, or infant-related complication. To address our first aim, we conducted a qualitative analysis to derive common and unique themes in the clinical presentation of PTSD following obstetrical and newborn-related trauma. Second, we describe the adaptation and implementation of Prolonged Exposure (PE) for obstetrical or newborn-related trauma and preliminary data regarding its acceptability, feasibility, safety, and effectiveness.

Methods

Participants

Eight patients participated in the treatment. All participants were over the age of 18 and met the criteria for DSM-5 PTSD. Study data was deemed exempt by an Institutional Review Board. Factors known to reduce the safety and appropriateness of PE were addressed prior to treatment (e.g., acute suicidality, homicidal ideation). All participants were married and identified as cis-gender women. The majority identified as White/Non-Hispanic (62.5%, n=5), with two individuals identifying as White/Hispanic (25%) and one identifying as Asian (12.5%). In terms of educational status, one participant completed some college (12.5%), five completed college degrees (62.5%), and two completed an advanced degree (25%). All participants were perinatal, with two identifying as pregnant, four as postpartum (<1 year following childbirth), and two as experiencing recent late pregnancy loss or stillbirth. Comorbid diagnoses included five patients with comorbid major depressive disorder (MDD; 62.5%), one with binge eating disorder, one with panic disorder, and one with both obsessive-compulsive disorder and social phobia.

Procedure

Patients completed a diagnostic evaluation with a clinical psychologist (Ph.D.) or supervised doctoral level trainee at an outpatient psychiatry clinic within a Maternal-Fetal Medicine Clinic. The clinical interview assessed for PTSD and commonly comorbid conditions using DSM-5 criteria (e.g., anxiety/mood disorders, eating disorders, psychosis). Patients were self-referred or referred by their current medical provider. Informed consent was provided prior to treatment. Individuals who met eligibility criteria completed clinical measures pre- and post-treatment. Data were collected between June 2018 to July 2020. Procedures were approved by the institutional review board and Office of Human Research Ethics (OHRE) at UNC-Chapel Hill.

Treatment

All patients received PE in accordance with the treatment protocol (Foa et al., 2007) and effectiveness research. Weekly, 60-minute therapy sessions were conducted in person (n=7) or virtually (n=1) through secure video conferencing. While the initial PE protocol recommended

90-minute sessions, 60-minute sessions appear equally efficacious (Nacasch et al., 2015). PE guidelines recommend that patients receive 8-15 sessions and that treatment discontinuation be determined based on individual progress. As a result, the number of sessions received varied (8-15). Four individuals (50%) completed 8-10 sessions, while the other four completed 12-15 sessions. Therapists included a licensed clinical psychologist and doctoral level supervised trainees.

Measures

Demographics. Demographic information was collected via clinical interviews and intake questionnaires. Patients were asked to identify their race/ethnicity, perinatal status and history, educational level, marital status, and gender identity.

PTSD Checklist (PCL) – Interview. A semi-structured clinical interview based on the PTSD Checklist for DSM-5 (see below; Weathers et al., 2013b) was administered. The PCL Interview provides questions and benchmarks to aid clinicians in the evidence-based assessment of DSM-5 PTSD. The interview collects additional information regarding the severity (frequency, intensity) of each DSM-5 PTSD symptom. It also provides questions to assess motivation and ability to engage in PE and potential confounds that may mitigate the effectiveness or appropriateness of PE.

PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013b). The PCL-5 is a 20-item, gold-standard self-report assessment of PTSD symptoms (Blevins et al., 2015; Weathers et al., 1993). Items assess the severity and distress of post-traumatic symptoms over the last month. Each item is rated on a Likert scale (0-4) and summed to compute a total score (0-80). Higher scores indicate more severe symptomatology. The psychometric evaluation suggests that a cut-score of 31-33 is reliable in detecting clinically significant PTSD (Bovin et al., 2016). The PCL-5 has excellent psychometric properties and has been validated in various clinical populations and settings (e.g., Blevins et al., 2015; Ashbaugh et al., 2016; Bovin et al., 2016). It demonstrates robust sensitivity to treatment change comparable to structured clinical interviews (Wortmann et al., 2016).

The Life Events Checklist for DSM-5 (LEC-5; Weathers et al., 2013a). The LEC-5 is a 17-item self-report measure developed to screen for lifetime exposure to potentially traumatic events (Gray et al., 2004; Weathers et al., 2013b). It is typically administered in conjunction with measures of PTSD severity (Blevins et al., 2015) to provide an inventory of all traumatic events experienced prior to identifying the index trauma. LEC-5 items address 16 types of traumatic events (e.g., serious

accidents, natural disasters) and one item for any other unique, stressful event not listed. All items are rated on a 6-point nominal scale regarding the presence and type of exposure. The LEC demonstrates sufficient psychometric properties (Gray et al., 2004). Given the nominal nature of the LEC, there is not a standardized scoring protocol.

Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987)**.** The EPDS is the most commonly used self-report assessment of perinatal depression in clinical and research settings (Boyd et al., 2005). The measure consists of 10 items related to perinatal depression symptoms in the last week, rated on a 4-point Likert scale. Several items are reverse scored, and all items are summed to compute a composite severity (0-30). Scores above 13 indicate clinically significant depression (Matthey et al., 2006). The psychometric properties of the EPDS provide strong evidence for validity and internal consistency (McBride et al., 2014).

Data Analytic Plan

Data were extracted and cleaned in Excel. No data were missing. Aggregated symptom data were examined and described qualitatively. Descriptive statistics were used to characterize the sample (e.g., demographics, symptom severity). Paired t-tests of pre- and post-treatment PTSD (PCL-5) and depression (EPDS) symptom severity were conducted for preliminary data on efficacy. All statistical analyses were conducted in SPSS, version 26.

Results

PTSD Clinical Presentation

Trauma history. Life threatening complications of pregnancy included pre-eclampsia, HELLP syndrome, postpartum hemorrhage, and placental abruption. Life threatening complications of the newborn were largely conditions associated with extreme prematurity or organ failure due to developmental abnormality or infection. Perinatal losses included second and third trimester miscarriages and stillbirth.

Re-experiencing. The most commonly endorsed re-experiencing symptom, evoking the highest levels of distress, was intrusive memories of the index trauma (75.0%). Individuals reported intrusive symptoms as occurring both cued and uncued by trauma-related stimuli; cues aligned with avoidance themes below.

Avoidance. Both internal and external traumatic avoidance was evident in the sample. The most common form of internal avoidance

occurred via excessive distraction. External avoidance comprised multiple themes: medical, bodily, baby-related, pregnancy memorabilia, and grief. Specifically, medical avoidance presented as avoidance of ultrasounds, certain positioning during medical exams, limited engagement with a physician or willingness to attend medical appointments, preference for induction procedures, and limited capacity to self-advocate in medical settings. Bodily avoidance included avoidance of interoceptive cues (e.g., panic symptoms often mimicked pre-eclampsia symptoms), menstrual blood (e.g., reminders of hemorrhage, miscarriage, placental previa), and sexual intimacy with partners (often due to fears of possible conception).

Infant avoidance took two pathways. When newborns experienced life-threatening complications, avoidance often took the theme of overprotectiveness, such as refusal to take the baby out of the home, refusal to allow trusted supports to provide care for the baby (e.g., feeding, providing medications), and checking behaviors related to the baby's health and wellbeing (e.g., taking temperature multiple times per day without illness, waking up every hour to ensure ongoing survival). When there was perinatal loss or threat to maternal survival, avoidance of pregnant individuals and infants was a common theme (e.g., avoidance of own infant, minimizing contact with pregnant or recently postpartum associates, avoiding the baby section of department stores). Almost all participants reported avoidance of memorabilia, including an inability to look at pictures taken during their pregnancy, hospitalization, or of their babies, or to examine other keepsakes. Finally, for those who experienced loss, there was a theme related to grief inhibition, with participants denying a grieving ceremony, ways to honor or remember the loss, or discussing grief with others who could provide social support.

Alterations in mood and cognition. Cognitively, participants endorsed beliefs related to bodily defectiveness, with many describing that their body either put themselves or their baby in danger or did not function as designed. Themes related to self-blame were universal in all eight participants, with some endorsing blame of their spouse, medical team, or spiritual figureheads. Participants often endorsed an inability to trust their or their medical team's interpretations and decision-making. The most frequent high-intensity emotions endorsed were guilt and fear. Overwhelmingly, participants voiced detachment from social support. The detachment was associated with self-protection from invalidation or stigma, desired emotional numbness, and the belief that others could not understand their experience.

Hyperarousal. Hyperarousal symptoms most commonly manifest as hypervigilance regarding infant safety due to illness, interpersonal

threats, bodily changes, or sensations during pregnancy or postpartum. Participants universally reported increased irritability, and approximately half endorsed sleep difficulties not attributable to newborn needs.

PE rationale: PE appeared well suited for this sample of perinatal trauma survivors, given the prominent, debilitating nature of avoidance in their lives, which interfered with their ability to bond with their baby, receive needed support, and interface with medical systems. Participants reported that they had not had the ability to process emotions related to perinatal traumatic events. When parents and infants survived, they indicated the environment did not permit emotional experiencing due to limited support and recovery from medically complex situations. When participants experienced a perinatal loss, invalidating messaging from social support about their ability to try again, the loss as "not real," and stigma interfered with processing emotions. Given the role of PE in both processing trauma-related emotions and allowing for new learning about trauma-related stimuli, participants reported that the goals of PE aligned with their treatment goals and symptom presentation.

Feasibility and acceptability: All participants reported understanding and agreement regarding the treatment rationale, and all reported that the intervention was acceptable to them. Most participants (87.5%; n=7) reported that daily imaginal and in vivo exposures were not feasible. However, all could commit to a modified schedule that included listening to imaginal exposure recordings at least three times per week and practicing in vivo exposures between two and five times per week.

Safety: No adverse mental or physical health effects were reported during the assessment or treatment of P-PTSD.

Adaptations: In addition to reduced home practice assignment, sessions were provided for 60-minutes instead of the standard 90-minutes due to both participant and clinic needs and evidence suggesting 60-minute sessions are noninferior (Nacasch et al., 2015). During the narrative exposure component of treatment, session time was divided into 10 minutes of home practice review, 20-25 minutes of imaginal exposure, 10-15 minutes of processing, and 10-15 minutes of home practice assignment. Participants often engaged in one to two sessions of in vivo exposures before beginning imaginal exposure to minimize factors that might interfere with treatment (e.g., panic attacks, infant in room) by exposing individuals to feared situations (e.g., interoceptive cues, trusted support watching baby). Finally, elements described in the avoidance section above were heavily emphasized in developing participant exposure hierarchies (e.g., minimizing checking behaviors, allowing for grieving ceremonies and behaviors).

Trauma History: In addition to index traumas, prior trauma exposure endorsed on the LEC-5 was examined. Aggregate results are reported in Table 1. The most common trauma types were first-hand experiences of other very stressful events or experiences (100%; $n = 8$), unwanted or uncomfortable sexual experience (75%; $n = 6$), natural disasters (75%; $n = 6$), and life-threatening illness or injury (62.5%; $n = 5$). The prevalence of life-threatening illness or injury is consistent with the obstetrical focus.

Treatment Outcomes: PTSD remission at post-treatment was examined in terms of the clinical cut-score for the PCL-5 (Total score > 33; Murphy et al., 2017). At baseline, all participants exceeded the threshold, evidencing moderate to severe PTSD symptoms (PCL-5 *Mean* = 51.50, *SD* = 12.04, *Range* = 36-69). At post-treatment, 100% ($n = 8$) demonstrated full remission (PCL-5 *Mean* = 15.13, *SD* = 7.43, *Range* = 6-27). Regarding response, PCL-5 scores decreased on average by -70%, with individual gains ranging from -37% to -87%. The paired t-test indicated that pre- to post-treatment reductions were statistically significant ($p < .001$).

Depression severity was examined using validated severity thresholds for the EPDS (*0-6 = absent/no symptoms, 7-13 = mild, 14-19 = moderate, ≥ 20 severe*; McCabe-Beane et al., 2016). At baseline, most participants (87.5%; $n = 7$) indicated some level of depressive symptoms (EPDS *Mean* = 12.5, *SD* = 4.66). Scores ranged from absent (6) to severe (20) depression, with 50% indicating mild symptoms, 25% moderate, and 12.5% severe. Three individuals' (37.5%) scores were above the clinical threshold (EPDS > 13; Matthey et al., 2006).

At post-treatment, EPDS scores decreased (EPDS *Mean* = 5.00, *SD* = 3.54, *Range* = 1-10), with 37.5% ($n = 3$) reporting mild symptoms and 62.5% ($n = 5$) indicating absent symptoms. Full remission (EPDS ≤ 13) was observed for 100% ($n = 3$) of those with clinically significant depression at baseline. On average EPDS scores decreased by -62% from pre- to post-treatment. Individual improvements ranged from -29% to -83%. The paired t-test revealed that reductions in EPDS scores were also statistically significant ($p < .01$).

Discussion

P-PTSD is underdiagnosed and undertreated in the perinatal period, partly due to gaps in the literature related to common symptom presentations. Study results may suggest that treatment providers can monitor for specific symptom themes following pregnancy, delivery, and neonatal complications or perinatal loss to inform possible diagnosis and treatment referral. Symptoms may present as intrusive thoughts or memories of perinatal events and associated high levels of guilt, fear, anger, or irritability. Reports related to intense blame of self or others, social detachment, disinterest, and beliefs about their body "failing" the patient or their baby are also common. Providers can be alert to signs of avoidance, including avoidance of medical appointments/procedures, social supports, grieving, memorabilia, and bodily changes or interoceptive cues. Signs of notable under-engagement or overprotectiveness with the infant may also signal to providers the need for further evaluation. Initial identification of P-PTSD symptoms by frontline treatment providers can pave the way for appropriate evaluation, diagnosis, and treatment.

The present study also addressed the dearth of treatment research for PTSD in the perinatal period. Findings suggest that perinatal individuals diagnosed with PTSD related to obstetrical, neonatal, or perinatal loss traumas found PE to be a good treatment match to their symptoms and goals. Participants reported that the treatment rationale and protocol were acceptable and feasible, with slight modifications to the frequency of home practice and length of sessions. No participants reported any adverse mental or physical health outcomes during the study, and overwhelmingly, participants saw robust PTSD and depression symptom attenuation as a result of treatment. As such, this case series supports the preliminary evidence suggesting that PE is acceptable, feasible, safe, and effective in perinatal populations.

The case series has multiple limitations, including the small sample size, lack of comparator, and absence of treatment fidelity ratings. Moreover, it is limited in scope to obstetrical, neonatal, or perinatal loss traumas and may not be generalizable to other perinatal traumas. Future directions include larger scale evaluations of the efficacy and effectiveness of frontline trauma-focused treatments perinatally, including randomized control trials incorporating perinatal populations. Along these lines, refining our understanding of the phenomenology of perinatal PTSD and the unique mechanisms of empirically supported treatments in this population will help inform treatment optimization and matching. Clarifying unique barriers and challenges associated with

PTSD treatment fidelity and adherence in the perinatal period can help refine treatment manuals and guidelines to support implementation and outcomes optimally.

Appendix

The authors have no conflicts of interest to disclose.

*Correspondence regarding this article may be sent to Tiffany Hopkins, Ph.D., 77 Vilcom Center Drive, Suite 300, Chapel Hill, NC 27514, tiffany_hopkins@med.unc.edu

Table 1. Overview of findings from the Life Events Checklist for DSM-5 (LEC-5)

	% Endorsed			
Trauma Type	***Happened to me***	***Witnessed it***	***Learned about it***	***Doesn't Apply***
Any other very stressful event or experience	100	0	0	0
Other unwanted or uncomfortable sexual experience	75	0	0	25
Natural Disaster	75	12.5	0	12.5
Life-threatening illness or injury	62.5	12.5	0	25
Sexual assault	37.5	0	0	62.5
Transportation accident	25	12.5	12.5	50
Severe human suffering	25	0	0	75
Physical assault	12.5	12.5	0	75
Assault with weapon	12.5	0	0	87.5
Captivity	12.5	0	0	87.5
Sudden violent death	12.5	0	25	0
Sudden accidental death	12.5	0	37.5	50
Fire or explosion	0	12.5	0	87.5
Serious accident at work, home, or during recreational activity	0	0	0	0
Exposure to toxic substance	0	0	0	0
Serious injury, harm, or death you caused to someone else	0	0	0	0
Combat or exposure to a warzone	0	0	0	0

References

Ashbaugh, A. R., Houle-Johnson, S., Herbert, C., El-Hage, W., & Brunet, A. (2016). Psychometric validation of the English and French versions of the posttraumatic stress disorder checklist for DSM-5 (PCL-5). *PLOS ONE*, *11*(10), e0161645. https://doi.org/10.1371/journal.pone.0161645

Atwoli, L., Stein, D. J., Koenen, K. C., & McLaughlin, K. A. (2015). Epidemiology of posttraumatic stress disorder: Prevalence, correlates and consequences. In *Current Opinion in Psychiatry* (Vol. 28, Issue 4, pp. 307–311). Lippincott Williams and Wilkins. https://doi.org/10.1097/YCO.0000000000000167

Beck, C. T., & Casavant, S. (2019). Synthesis of mixed research on posttraumatic stress related to traumatic birth. *Journal of Obstetric, Gynecologic, and Neonatal Nursing: JOGNN*, *48*(4), 385–397. https://doi.org/10.1016/j.jogn.2019.02.004

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, *28*(6), 489–498. https://doi.org/10.1002/jts.22059

Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders-fifth edition (PCL-5) in veterans. *Psychological Assessment*, *28*(11), 1379–1391. https://doi.org/10.1037/pas0000254

Boyd, R. C., Le, H. N., & Somberg, R. (2005). Review of screening instruments for postpartum depression. In *Archives of Women's Mental Health* (Vol. 8, Issue 3, pp. 141–153). Springer. https://doi.org/10.1007/s00737-005-0096-6

Cirino, N. H., & Knapp, J. M. (2019). Perinatal posttraumatic stress disorder: A review of risk factors, diagnosis, and treatment. *Obstetrical and Gynecological Survey*, *74*(6), 369–376. https://doi.org/10.1097/OGX.0000000000000680

Cook, N., Ayers, S., & Horsch, A. (2018). Maternal post-traumatic stress disorder during the perinatal period and child outcomes: A systematic review. *Journal of Affective Disorders*, *225*, 18–31. https://doi.org/10.1016/j.jad.2017.07.045

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *The British Journal of Psychiatry*, *150*(6), 782–786.

Delicate, A., Ayers, S., Easter, A., & McMullen, S. (2018). The impact of childbirth-related post-traumatic stress on a couple's relationship: A systematic review and meta-synthesis. *Journal of Reproductive and Infant Psychology*, *36*(1), 102–115. https://doi.org/10.1080/02646838.2017.1397270

Foa, E., Hembree, E., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences therapist guide*. Oxford University Press.

Gray, M. J., Litz, B. T., Hsu, J. L., & Lombardo, T. W. (2004). Psychometric properties of the life events checklist. *Assessment*, *11*(4), 330–341. https://doi.org/10.1177/1073191104269954

Grekin, R., & O'Hara, M. W. (2014). Prevalence and risk factors of postpartum posttraumatic stress disorder: A meta-analysis. *Clinical Psychology Review*, *34*(5), 389–401. https://doi.org/10.1016/j.cpr.2014.05.003

Howard, L. M., Piot, P., & Stein, A. (2014). No health without perinatal mental health. In *The Lancet* (Vol. 384, Issue 9956, pp. 1723–1724). Lancet Publishing Group. https://doi.org/10.1016/S0140-6736(14)62040-7

Matthey, S., Henshaw, C., Elliott, S., & Barnett, B. (2006). Variability in use of cut-off scores and formats on the Edinburgh Postnatal Depression Scale–implications for clinical and research practice. *Archives of Women's Mental Health*, *9*(6), 309–315.

McBride, H. L., Wiens, R. M., McDonald, M. J., Cox, D. W., & Chan, E. K. H. (2014). *The Edinburgh Postnatal Depression Scale (EPDS): A Review of the Reported Validity Evidence* (pp. 157–174). Springer, Cham. https://doi.org/10.1007/978-3-319-07794-9_9

McCabe-Beane, J. E., Segre, L. S., Perkhounkova, Y., Stuart, S., & O'Hara, M. W. (2016). The identification of severity ranges for the Edinburgh Postnatal Depression Scale. *Journal of Reproductive and Infant Psychology*, *34*(3), 293–303. https://doi.org/10.1080/02646838.2016.1141346

Murphy, D., Ross, J., Ashwick, R., Armour, C., & Busuttil, W. (2017). Exploring optimum cut-off scores to screen for probable posttraumatic stress disorder within a sample of UK treatment-seeking veterans. *European Journal of Psychotraumatology*, *8*(1), 1398001.

Muzik, M., McGinnis, E. W., Bocknek, E., Morelen, D., Rosenblum, K. L., Liberzon, I., Seng, J., & Abelson, J. L. (2016). PTSD symptoms across pregnancy and early postpartum among women with lifetime PTSD diagnosis. *Depression and Anxiety*, *33*(7), 584–591. https://doi.org/10.1002/da.22465

Nacasch, N., Huppert, J. D., Su, Y.-J., Kivity, Y., Dinshtein, Y., Yeh, R., & Foa, E. B. (2015). Are 60-minute prolonged exposure sessions with 20-minute imaginal exposure to traumatic memories sufficient to successfully treat PTSD? A randomized noninferiority clinical trial. *Behavior Therapy*, *46*(3), 328–341.

Pacella, M. L., Hruska, B., & Delahanty, D. L. (2013). The physical health consequences of PTSD and PTSD symptoms: A meta-analytic review. *Journal of Anxiety Disorders*, *27*, 33–46. https://doi.org/10.1016/j.janxdis.2012.08.004

Peeler, S., Chung, M. C., Stedmon, J., & Skirton, H. (2013). A review assessing the current treatment strategies for postnatal psychological morbidity with a focus on post-traumatic stress disorder. *Midwifery*, *29*(4), 377–388. https://doi.org/10.1016/j.midw.2012.03.004

Shaw, J. G., Asch, S. M., Katon, J. G., Shaw, K. A., Kimerling, R., Frayne, S. M., & Phibbs, C. S. (2017). Post-traumatic stress disorder and antepartum complications: A novel risk factor for gestational diabetes and preeclampsia. *Paediatric and Perinatal Epidemiology*, *31*(3), 185–194. https://doi.org/10.1111/ppe.12349

Simpson, M., Schmied, V., Dickson, C., & Dahlen, H. G. (2018). Postnatal post-traumatic stress: An integrative review. *Women and Birth: Journal of the Australian College of Midwives*, *31*(5), 367–379. https://doi.org/10.1016/j.wombi.2017.12.003

Van Mullem, C., & Tillett, J. (2009). Psychiatric disorders in pregnancy. *The Journal of Perinatal & Neonatal Nursing*, *23*(2), 124–130. https://doi.org/10.1097/JPN.0b013e3181a4bf3b

Vesel, J., & Nickasch, B. (2015). An evidence review and model for prevention and treatment of postpartum posttraumatic stress disorder. *Nursing for Women's*

Health, *19*(6), 504–525. https://doi.org/10.1111/1751-486X.12234

Vignato, J., Georges, J. M., Bush, R. A., & Connelly, C. D. (2017). Post-traumatic stress disorder in the perinatal period: A concept analysis. *Journal of Clinical Nursing*, *26*(23–24), 3859–3868. https://doi.org/10.1111/jocn.13800

Weathers, F. W., Blake, D. D., Schnurr, P. P., Kaloupek, D. G., Marx, B. P., & Keane, T. M. (2013a). *The life events checklist for DSM-5 (LEC-5)*. Instrument available from the National Center for PTSD at www.ptsd.va.gov.

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993). The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility. *Annual Convention of the International Society for Traumatic Stress Studies, San Antonio, TX*, *462*.

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013b). The ptsd checklist for dsm-5 (pcl-5). *Scale Available from the National Center for PTSD at Www. Ptsd. va. Gov*, *10*.

Wortmann, J. H., Jordan, A. H., Weathers, F. W., Resick, P. A., Dondanville, K. A., Hall-Clark, B., Foa, E. B., Young-McCaughan, S., Yarvis, J. S., Hembree, E. A., Mintz, J., Peterson, A. L., & Litz, B. T. (2016). Psychometric analysis of the PTSD checklist-5 (PCL-5) among treatment-seeking military service members. *Psychological Assessment*, *28*(11), 1392–1403. https://doi.org/10.1037/pas0000260

Yildiz, P. D., Ayers, S., & Phillips, L. (2017). The prevalence of posttraumatic stress disorder in pregnancy and after birth: A systematic review and meta-analysis. *Journal of affective disorders*, *208*, 634-645. https://doi.org/10.1016/j.jad.2016.10.009