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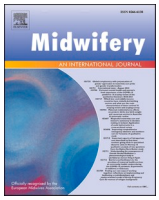

Review Article

A scoping review of effective health practices for the treatment of birth trauma

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ABSTRACT

Background: There is currently no consensus on the most effective health practices to manage or reduce the effects of birth trauma (BT) and childbirth-related posttraumatic stress disorder (CB-PTSD).
Aim: The aim was to map the current literature on effective health practices for BT/CB-PTSD, identify key elements (the what, when and how) important for effective health practices, and highlight gaps in maternity care.
Methods: A systematic search was conducted across key nursing, allied, and medical databases (MEDLINE, Scopus, PubMed) for key terms related to (1) birth trauma and (2) intervention. Only peer-reviewed, English-language papers published since 2000 were included to ensure the relevance and timeliness of the findings. Following PRISMA-ScR guidelines, 6,347 articles were identified through databases/registers and citation searching. After removing 1,342 duplicates, 5,005 were screened by title and abstract. A further 4,544 were excluded, leaving 461 for full-text screening. Afterf excluding another 433, 28 papers met inclusion for this review.
Findings: The first session delivered early (within the first 72 h of birth) by a clinician (midwife/psychologist/counsellor) significantly reduced BT/CB-PTSD in the short-term. Both trauma-focused and non-trauma-focused were supported at this stage, provided they were structured. If intervention is delayed (weeks to months post-birth), a trauma-focused, multi-session approach is recommended.
Discussion: Early, structured interventions should be considered routine care for women with BT/CB-PTSD, with more intensive, structured, trauma-focused approach for persistent symptoms. The potential role of digital mental health tools is promising, particularly for women in low-resource settings, but requires further research to evaluate feasibility, acceptability, and sustainability.

Statement of significance

Issue

Though interventions exist to manage or reduce the effects of birth trauma (BT) and childbirth-related posttraumatic stress disorder (CB-PTSD), there is no consensus on the most effective healthcare intervention.

What is already known

The evidence surrounding the most effective type of intervention (trauma-focused or non-trauma-focused), the timing of intervention (within 72 h of birth versus weeks to months later), and the method of delivery (face-to-face versus online) is inconclusive.

What this papers adds

This review identifies key and critical elements, including what interventions work best, when they should be delivered, and how they should be provided, to optimise outcomes for women with BT/CB-PTSD.

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Defining birth trauma (BT)

Giving birth is a significant, transformative, and potentially traumatic event. Childbirth situations can be objectively traumatic; that is, when the life or physical integrity of the mother and/or her infant is at risk, e.g., during an emergency caesarean delivery, preterm birth, postpartum haemorrhage, and/or birth-related physical injuries (Horsch et al., 2017). Early work around birth trauma (BT) was based on this assumption of Objective BT. More recent work has re-defined this assumption so that it incorporates the women's own experience or perception of childbirth (Subjective BT). Subjective BT is defined as:

> *"a woman's experience of interactions and/or events directly related to childbirth that caused overwhelming distressing emotions and reactions, leading to short- and/or long-term negative impacts on a woman's health and well-being."* (Leinweber et al., 2022).

This redefined perspective emphasies the emotional and psychological aspects of childbirth, recognising that what a woman perceives as traumatic can significantly impact her well-being, regardless of whether there was a physical threat to her life or not (Beck, 2004).

Prevalence and impact of BT

Global literature indicates that BT affects 20–50% of women (Yildiz et al., 2017, Alcorn et al., 2010, Ayers et al., 2016, Creedy et al., 2000, Soet et al., 2003), highlighting it's growing significance as a public health concern (Perinatal Anxiety & Depression Australia (PANDA) 2023, Ayers et al., 2024, Horsch et al., 2024). With 140 million women giving birth globally every year (World Health Organization (WHO) 2024), and based on a conservative prevalence rate of 20%, BT impacts millions of women annually. BT, today therefore, is more likely to arise from interpersonal factors, e.g., such as feeling isolated or abandoned during labour, loss of control during birth, perception of support as emotionally absent, or even actively hostile, a long and difficult labour, medical complications, and multiple care providers, are increasingly being recognised (Ayers et al., 2024, Horsch et al., 2024). In other words, BT 'lies in the eye of the beholder' (Beck, 2004) - what a woman feels, and what she perceives about her birth experience. This is an interesting concept, if healthcare personnel note there was no threat to the life or physical integrity of the mother or newborn they might consider this a 'routine and normal' birth. Yet through the woman's lens she might perceive childbirth as traumatic (Horsch et al., 2024).

BT and CB-PTSD

Historically, BT and childbirth-related posttraumatic stress disorder (CB-PTSD) were under-recognised in healthcare, with their impact on maternal mental health largely overlooked. CB-PTSD can result from BT, and is characterised by a distinct set of psychological symptoms that develop after, or as a direct consequence of having, a traumatic birth. A woman who meets DSM-5 diagnostic criteria for CB-PTSD will perceive the birth as traumatic (re-experiencing symptoms), have an intense desire to avoid reminders of the birth (avoidance symptoms), experience fear, anger, guilt, or shame when thinking about her childbirth (negative alterations in mood and cognition), and have difficulty sleeping, concentrating, being easily irritated and/or angered (hyperarousal symptoms) (American Psychiatric Association 2013).

Between 4%-6% of women, whose symptoms last for more than one month, will meet diagnostic criteria for CB-PTSD, with 16 to 19% in high-risk groups, e.g., pre-term birth (Neonatal Intensive Care Unit [NICU] admission), previous or current pregnancy loss (miscarriage, stillborn, neonatal death), or a severe complication, such as pre-eclampsia (Yildiz et al., 2017, Grekin and O'Hara, 2014). Women with a history of previous sexual assault (SA), experiences of intimate partner violence (IPV), and from marginalised populations (e.g., LGBTQ+) report higher rates of CB-PTSD (Adhikari et al., 2025, Greenfield et al., 2019, Greenfield et al., 2025, Ward, 2020). Between 12–13% of women will also develop subclinical CB-PTSD (Yildiz et al., 2017, Grekin and O'Hara, 2014, Heyne et al., 2022) in which they may experience some, but not all, of the CB-PTSD symptoms. Over time, there has been a growing recognition of the significance of BT/CB-PTSD, and it is increasingly being acknowledged as a critical component of maternal mental health care.

The experience of BT and CB-PTSD is devastating and potentially life-changing for women. Untreated perinatal mental health symptoms costs the UK economy £8.1 billion for every year of births, which equates to nearly £10,000 for every single birth. Of this, 72% is attributed to adverse impacts on the child (Bauer et al., 2014, Pisavadia et al., 2024) Though the body of literature is still developing, what is known is the association between BT/CB-PTSD with co-morbid mental health symptoms (i.e., postnatal anxiety and depression); maladjusted mothering behaviours up to the first 12 months post birth, avoidance of a subsequent pregnancy, and increase in a pathological fear of birth (tokophobia) in a subsequent pregnancy (Ayers et al., 2024, Horsch et al., 2024). These have potential implications for fetal development, emotional distance with baby, and maternal mental health (Jomeen et al., 2021). CB-PTSD can delay onset of lactation and bonding between mother and her baby (Ayers et al., 2024), which, in turn, can affect parenting dynamics and the parent-child relationship (Molloy et al., 2021, Delicate and Ayers, 2023, Delicate et al., 2020). BT/CB-PTSD is compounded by the barriers women face in getting effective help: shame and stigma about their experience, lack of support from health professionals, inadequate referral options, and lack of clarity about best practices for intervention (Williamson et al., 2021). These factors highlight the urgent need to address BT/CB-PTSD, emphasising the necessity of comprehensive care to reduce its impact on maternal well-being and improve outcomes for both mother and child.

Interventions to reduce BT/CB-PTSD

Promoting choice, control, and autonomy, within a continuity of care model (Greenfield et al., 2019, Jomeen and Pethtel, 2019, Ahmadpour et al., 2022) is recognised as a critical factor in reducing, and potentially mitigating, the impact of BT/CB-PTSD. This model empowers women to make informed decisions about their care, fostering a sense of control and agency during childbirth, which is essential for postpartum health and well-being (Greenfield et al., 2019, Jomeen and Pethtel, 2019, Ahmadpour et al., 2022). Over recent years, the approach to addressing BT/CB-PTSD has evolved significantly, shifting from unstructured, debriefing-focused methods (e.g., non-specific postnatal care) to more structured, evidence-based approaches, including trauma-focused cognitive-behavioural therapy (TF-CBT) and eye movement desentisation and reprocessing (EMDR). The collaboration between midwives, psychologists, obstetricians and mental health professionals has significantly enriched intervention strategies, promoting holistic care models that have evolved over time (Donegan et al., 2025, O'Donoghue et al., 2025). The multidisciplinary approach ensures that women receive comprehensive support, tailored to their physical, emotional and psychological needs, leading to improved outcomes in managing BT/CB-PTSD. These advances represent a step forward in addressing the psychological needs of women who experience traumatic births.

However, such approaches are not universal and there is a lack of consensus on the what, when, and how of effective prevention and intervention for BT/CB-PTSD. Evidence exists for both trauma-focused interventions, which address childbirth experiences, and non-trauma-focused interventions, which do not. Examples of trauma-focused include cognitive processing therapy, prolonged exposure, image rehearsal therapy, expressive writing interventions, midwifery-led debriefing, TF-CBT and EMDR, while the non-trauma interventions include Tetris, pharmacotherapy, and usual care (Taylor Miller et al., 2021, Furuta et al., 2018). The timing of the intervention is also mixed, with evidence on the efficacy of early (within the first 72 h of birth) and

later (between months to years post-birth) intervention time points. There is a good research base for both individual and group programs, and face-to-face and digital (telehealth, online package of web resources) interventions. What is clear, however, is trauma-focused debriefing is not recommended as an approach to treat BT/CB-PTSD. This shift from unstructured, debriefing-focused interventions to structured, evidence-based approaches represents a key milestone in the evolution of treatment strategies for BT/CB-PTSD.

Given the large scale of BT/CB-PTSD potentially affecting millions of women globally, interventions need to be cost-effective, sustainable, and efficacious. The majority of approaches are delivered in person which is costly, and raises challenges for scalability and sustainability (Alvarez-Jimenez et al., 2020, McGorry et al., 2022). A relatively recent development in this field is the incorporation of digital health solutions, which have begun to play an increasingly important role in addressing BT/CB-PTSD (Nääs et al., 2025, Teil et al., 2025). Early applications of telehealth and online interventions have emerged in maternity care offering promising solutions for addressing the mental health needs of women with BT/CB-PTSD, particularly in low-resource settings (Klittmark et al., 2025). The call to digitise perinatal mental health interventions aims to enhance accessibility, but the focus is primarily on screening and identifying women with, or at risk of, BT/CB-PTSD (Chen et al., 2023, Kwok et al., 2024, Mancinelli et al., 2023, Novick et al., 2022). Routine screening by health professionals as early responses to a traumatic birth is now recommended (Parliament of New South Wales 2024, Sheen et al., 2022). Predictive artificial intelligence (AI) to identify women at risk of birth trauma (Bartal et al., 2024, Rousseau et al., 2022, Bartal et al., 2023) is a potentially innovative way to address the scale of BT/CB-PTSD. AI can be used to analyse women's medical history, psychosocial factors and birth experiences to predict those women most at risk, facilitating early identification of women who might benefit from targeted, personalised intervention. This approach could enable more timely and effective care. Though increasing screening is important, it is an ethical imperative to have consensus on effective interventions - specifically the what, when, and how - to reduce BT/CB-PTSD for women. This facilitates the development of referral pathways for women to ensure they receive appropriate support and care, once identified.

Rationale for review

The absence of a consensus on the most effective interventions for BT/CB-PTSD creates a significant gap in evidence-based, maternity care. A scoping review is particularly suited to address this gap, as it allows for the synthesis and organisation of the diverse and inconsistent intervention approaches that currently exist. A scoping review will provide a broader overview of the available evidence, helping to identify key elements of effective interventions – the "what", "when" and "how". It also explores the potential of digital solutions to improve accessibility and scalability, offering innovative strategies to address the global impact of BT/CB-PTSD. By offering evidence-based insights into effective screening and intervention methods, this review may inform the development of maternity and perinatal care guidelines, making these practices a routine part of maternity care, particularly in resource-constrained settings. For women with BT/CB-PTSD, the question guiding this review is: *What are effective health care practices to manage or reduce the effects of BT/CB-PTSD?*

Methods

Protocol and registration

Review was registered retrospectively on PROSPERO in March 2025.

Eligibility criteria

The eligibility criteria for this scoping review were carefully designed to ensure a focused exploration of the most relevant and impactful literature regarding birth trauma (BT) and childbirth-related posttraumatic stress disorder (CB-PTSD).

The inclusion criteria for this scoping review were: (a) women (over 18 years of age) who had experienced BT, and (b) treatments/interventions used to treat or manage the effects of a self-perceived traumatic childbirth. This selection was made to ensure that the review addresses the experiences and interventions for those who have directly perceived childbirth as traumatic, which is central to the scope of BT/CB-PTSD and its impact on maternal mental health. By focusing on women who have self-identified their birth as traumatic, we ensure that the review accurately reflects the lived experiences of those affected by BT, which may differ significantly from those of individuals with physical birth trauma, fear of childbirth, or other unrelated conditions.

The exclusion criteria were designed to maintain a clear, relevant focus on the psychological and emotional consequences of BT and CB-PTSD. The exclusion criteria were: (a) men, adolescents, midwives, obstetric staff, women who had experienced physical trauma only, stillbirth or premature birth requiring neonatal care, and women with a fear of childbirth not related to an experience of BT (primary tokophobia); and (b) treatments aimed at preventing a traumatic childbirth and opinions on potential treatments, were excluded. These groups were excluded as they face distinct emotional, psychological, or medical challenges that may not align with the focus of this review—i.e., interventions specifically addressing the mental health impacts of a self-perceived traumatic birth. Interventions aimed at preventing traumatic childbirth or those based on expert opinion, rather than evidence of their effectiveness in managing BT/CB-PTSD, were also excluded, to maintain a robust, evidence-based approach.

Information sources

Databases (MEDLINE, Scopus, PubMed) were searched from June 2023 to February 2024 using key terms related to birth trauma and intervention. The search string was: (birth trauma) OR (traumatic birth) OR (birth induced posttraumatic stress*) OR (birth induced post traumatic*) AND (health intervention*) OR (health practice*) OR (intervention*) OR (practice*) OR (practise*). Papers were limited to peer-reviewed papers, and in English. Grey literature, conference proceedings, and unpublished data were not included in this review to ensure a focus on peer-reviewed, validated studies with established scientific rigor.

Search and selection of sources of evidence

The electronic search strategy was informed from the Population, Intervention/ Exposure, Comparator/ Context, Outcome, Study Characteristics (PICOS) framework (Schardt et al., 2007). Please see Table 1.

Data charting process

Data was extracted using Covidence on variables relevant to the health care practices to manage or reduce the effects of BT/CB-PTSD. The inclusion criteria were applied to the studies independently by two authors (JJ and EJ), and an independent person (NS) to ensure the validity and robustness of the process. Any point of variance was discussed, and agreement was reached by consensus.

Data items

Data was extracted on the author, aim, participants (women with birth trauma), methodology, measurement of birth trauma (objective versus subjective), intervention (trauma-focused versus non-trauma-

Table 1
PICOS framework for inclusion of papers and data extraction.

PICOS element	*Inclusion criteria*	*Exclusion criteria*
P	Women over 18 years of age, who had experienced a self-perceived traumatic childbirth Women at risk of postnatal distress/trauma due to traumatic childbirrh	Men Adolescents Mothers who had not yet expereinced childbirth Midwives, obstetric staff Women who had experienced physical trauma only Stillbirth or premature birth requiring neonatal care Women with a fear of childbirth not related to an experience of birth trauma
I	Any treatments/interventions used to treat or manage effects of a traumatic childbirth	Treatments to prevent a traumatic childbirth Opinions of potential treatments
C	Not required	Not required
O	Treatment/management/ experiences of interventions on mental/emotional health Preventing further negative psychological implications following a traumatic childbirth	Prevalence or measures of traumatic childbirth only Associations of birth mode, geographic or demographic measures, and traumatic childbirth
S	Clinical trials Observational trials Qualitative and quantitative	Studies published prior to 2000 Narrative reviews, conference papers, abstracts only, commentries, editorials, opinion pieces, published in a language other than English, systematic reviews where included papers did not meet eligiblity criteria

P = Population, I = Intervention/Exposure, C = Comparator/Context, O = Outcome, S = Study Characteristics.

focused), and outcome. Data was categorised based on the type of intervention: trauma-focused (interventions specifically addressing the trauma of childbirth, e.g., TF-CBT, EMDR) versus non-trauma-focused (interventions that did not aim to directly process trauma but focused on broader recovery or well-being, e.g., debriefing, midwifery-led care). This categorisation enabled a clear comparison of the impact of trauma-informed interventions versus more general supportive measures in improving maternal mental health outcomes: the what, when, and how of effective healthcare interventions.

Critical appraisal of individual sources of evidence

The PRISMA Extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018) was selected as the framework to guide the review. As this scoping review aimed to map the existing literature on interventions for BT/CB-PTSD, rather than conducting a quantitative synthesis, no meta-analysis or statistical summary methods (e.g., pooled effect sizes, P-values, or confidence intervals) were performed. The focus was on providing a comprehensive overview of the types of interventions, their effectiveness, and the varied approaches used across the studies. This approach is consistent with the objective of the scoping review, which is designed to summarise the breadth and range of evidence, without engaging in rigorous individual risk-of-bias assessments typically associated with systematic reviews (Munn et al., 2018, Peters et al., 2020).

Synthesis of results

The synthesis of results was descriptive. Due to the diverse range of included studies, interventions were grouped into three key areas: what, when, and how. The what refers to the type and nature of the interventions (e.g., trauma-focused vs. non-trauma-focused), the when focuses on the timing of the interventions (e.g., early vs. later post-birth interventions), and the how encompasses the delivery methods (e.g., individual vs. group formats, face-to-face vs. digital platforms). This categorisation allowed for a comprehensive understanding of the key elements of effective interventions across studies. By grouping interventions in this way, the synthesis aimed to highlight the most effective strategies for treating or mitigating the psychological impacts of BT/CB-PTSD, while considering factors such as intervention type, timing, and mode of delivery.

Results

Selection of sources of evidence

The literature search (PRISMA) identified 6,343 articles (see Fig. 1). During the identification process, 1,342 duplications were removed by Covidence and manually. A further 4 articles were found from other sources (citation searching). A total of 5,005 articles were screened by title and abstract. During screening, 4,544 were excluded, leaving 461 articles that were read in entirety. At this stage, 433 were excluded for the following reasons: not written entirely in English ($n = 3$), a protocol only ($n = 9$), editorial ($n = 9$), case study ($n = 5$), wrong outcome (no measurement of birth trauma, $n = 14$), no intervention reported ($n = 159$), narrative review only ($n = 44$), wrong intervention (intervention did not involve the birthing mother, $n = 9$), wrong study design (anecdotal descriptions of interventions in birth trauma, $n = 18$), conference abstract only ($n = 3$), wrong population ($n = 138$), full-text articles were not found ($n = 3$), note of concern/letter to editor only ($n = 2$), intervention not for the birth mother ($n = 6$), and not original research ($n = 7$). A total of 28 studies were included in the final scoping review.

Characteristics of sources of evidence

The characteristics of the sources of evidence are shown in Table 2.

Of the 28 studies, 23 were quantitative (Williamson et al., 2021, Abdollahpour et al., 2018, Abdollahpour et al., 2016, Asadzadeh et al., 2020, Chiorino et al., 2020, Deforges et al., 2022, Gamble et al., 2005, Geller et al., 2018, McKenzie-McHarg et al., 2014, Mojrian et al., 2018, Mitchell et al., 2018, Nieminen et al., 2016, Ryding et al., 2004, Sandström et al., 2008, Slade et al., 2020, Sorenson, 2003, Suarez and Yakupova, 2023, Turkstra et al., 2013) and five (5) qualitative papers (McKenzie-McHarg et al., 2014, Roberts et al., 2019, Blainey and Slade, 2015, Priddis et al., 2018, Bailey and Price, 2008). The majority of quantitative studies were randomised controlled trials (RCTs) (Horsch et al., 2017, Abdollahpour et al., 2018, Abdollahpour et al., 2016, Asadzadeh et al., 2020, Chiorino et al., 2020, Gamble et al., 2005, Mojrian et al., 2018, Nieminen et al., 2016, Ryding et al., 2004, Slade et al., 2020, Turkstra et al., 2013, Bahari et al., 2022), followed by four pre-post intervention designs (Deforges et al., 2022, Geller et al., 2018, Mitchell et al., 2018, Deforges et al., 2023), three correlational designs (Williamson et al., 2021, Sandström et al., 2008, Suarez and Yakupova, 2023), and two case studies (Ayers et al., 2007, Stramrood et al., 2012).

Data on 4,813 women were extracted for the 28 studies. The only low to middle income country included was Iran (Abdollahpour et al., 2018, Abdollahpour et al., 2016, Mojrian et al., 2018, Bahari et al., 2022). The five qualitative studies were conducted with women in the UK. The remaining studies were from high-income countries – America (Geller et al., 2018, Sorenson, 2003), Australia (Mitchell et al., 2018, Turkstra et al., 2013), Italy (Chiorino et al., 2020), Switzerland (Horsch et al., 2017, Deforges et al., 2022), Sweden (Nieminen et al., 2016, Sandström et al., 2008), United Kingdom (Williamson et al., 2021, McKenzie-McHarg et al., 2014, Roberts et al., 2019, Blainey and Slade, 2015, Bailey and Price, 2008), and Russia (Suarez and Yakupova, 2023).

In the majority of the studies, women with risk factors for BT were largely excluded for the following reasons: previous history of psychological symptoms (Abdollahpour et al., 2018, Deforges et al., 2022, Bahari et al., 2022), previous traumatic experience (Mojrian et al., 2018, Bahari et al., 2022), previous traumatic birth experience – perinatal loss

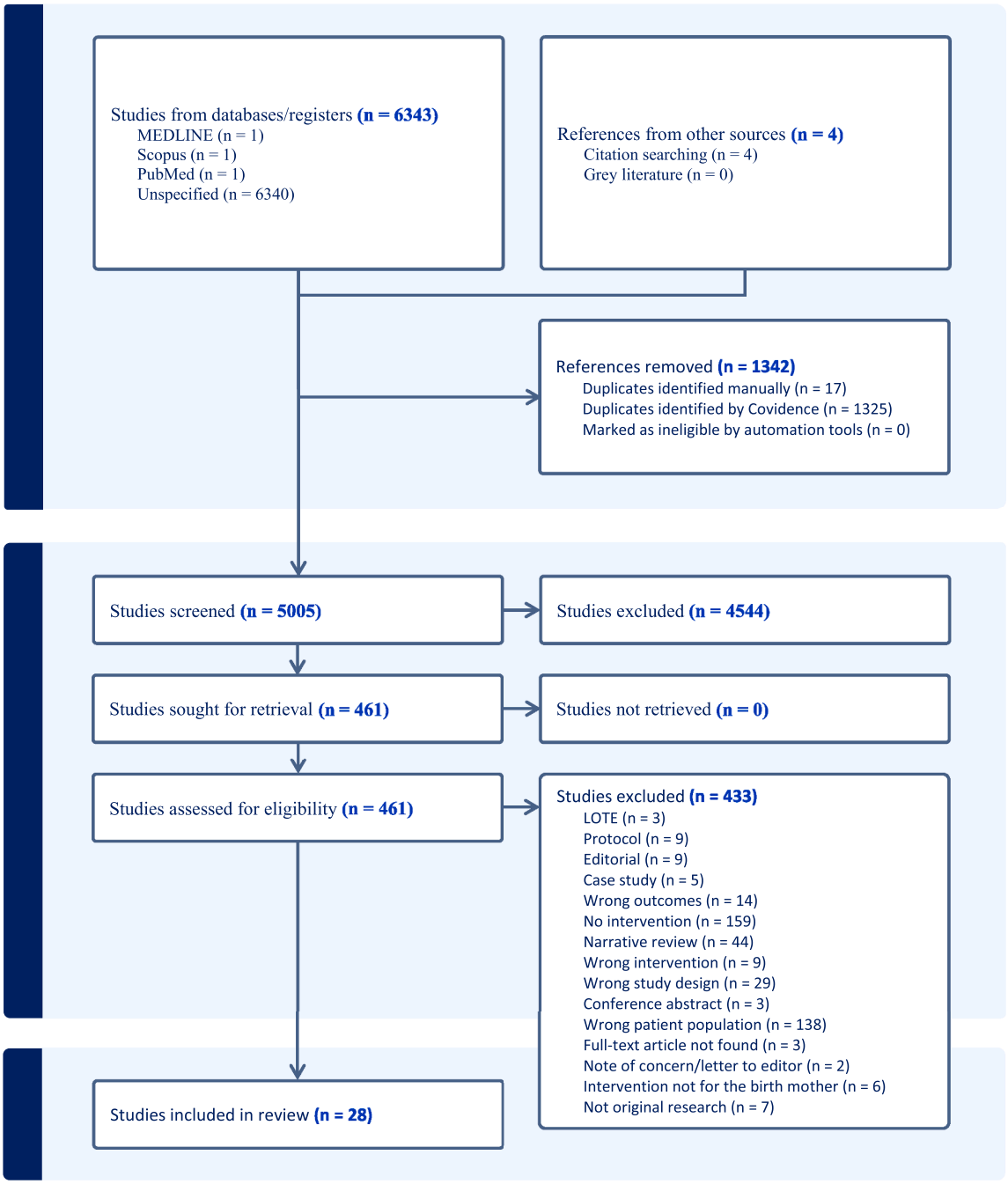

Fig. 1. PRISMA-ScR results.

(Abdollahpour et al., 2018), babies needing special care (Abdollahpour et al., 2016, Chiorino et al., 2020, Deforges et al., 2022, Bahari et al., 2022), previous use of psychological intervention (Blainey and Slade, 2015), insufficient language skills (Deforges et al., 2022), or planned caesarean (Horsch et al., 2017, Deforges et al., 2022).

Quantitative studies

What (types of interventions): trauma-focused vs. non-trauma focused. As shown in Table 3, trauma-focused interventions were reported in 16 studies (Williamson et al., 2021, Abdollahpour et al., 2018, Asadzadeh et al., 2020, Chiorino et al., 2020, Gamble et al., 2005, Geller et al., 2018, Mojrian et al., 2018, Nieminen et al., 2016, Ryding et al., 2004, Sandström et al., 2008, Sorenson, 2003, Turkstra et al., 2013, Bahari et al., 2022, Ayers et al., 2007, Stramrood et al., 2012, Meades et al., 2011). Nine studies used a structured approach: four used TF-CBT (Nieminen et al., 2016, Sorenson, 2003, Turkstra et al., 2013, Ayers et al., 2007), three used EMDR (Chiorino et al., 2020, Sandström et al., 2008, Stramrood et al., 2012), and two used a specialist perinatal service (Williamson et al., 2021, Geller et al., 2018). The remaining seven studies used an unstructured approach: three used trauma-focused debriefing (Abdollahpour et al., 2018, Abdollahpour et al., 2016, Ryding et al., 2004) and four used counselling (Asadzadeh et al., 2020, Gamble et al., 2005, Mojrian et al., 2018, Bahari et al., 2022). All of the structured approaches reported a significant decrease in PTSD post-intervention. Five of the seven unstructured studies reported a significant decrease in PTSD. The two non-significant studies were 2 sessions of a group program delivered by a psychologist and midwife at 2–3 months postpartum (Ryding et al., 2004) and 1 session of counselling with a midwife within 72 h of birth (Asadzadeh et al., 2020).

As shown in Table 4, non-trauma-focused interventions were

Table 2
Characteristics of studies for data extraction.

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
Abdollahpour et al 2018 Iran Quantitative: RCT Hospital	To investigate the effect of debriefing and brief cognitive-behavioural therapy (CBT) on postpartum depression in traumatic childbirth	$N = 179$ mothers admitted to postnatal ward of Nohom Dey Hospital in Torbat-e Heydarieh, North East of Iran in 2016	Recruited first 48 h after birthInclusion: 22 weeks of gestation, ability to speak Iranian, no mental disease, no psychiatric medications, no history of infertility of substance abuse, no history of depression, anxiety, stress during pregnancy, knowledge of CBT conceptsExclusion: requiring special care, experiencing no stressful life events over the past year, no history of PTSD, infant hospitalisation or deathRandom allocation to 3 groups (block size of 6): 1. Debriefing ($n = 54$) 2. Brief CB counselling ($n = 53$) 3. Control group (routine postpartum care, $n = 86$)	Objective (PTSD) DSM-IV-TR Criterion A Measured 4–6 weeks after childbirth, and follow-up at 3 months after delivery	Trauma-focused debriefing versus non-trauma focused (CB counselling) Debriefing: 1 session of debriefing (opportunity for women to discuss labour, birth, and post-delivery events and experiences) Non-trauma focused: 1 session of CB counselling (40–60 min of counselling) in the first 48 postpartum hours (information on healthy lifestyles, techniques for managing anxiety, social skills, problem solving, relaxation, and cognitive coping) Control: routine postnatal care	Stronger effect for NTF (CB) at 4–6 weeks in reducing depression (EPDS), but medium effect for both TF (debriefing) and NTF (CB) at 3 months, in reducing depression symptoms (EPDS)
Abdollahpour et al 2016 Iran Quantitative: RCT Hospital	To investigate the influence of the magical first hour after birth on post-traumatic stress in traumatic childbirths Does the first magical hour implementation have a positive effect on maternal stress after a traumatic childbirth?	$N = 84$ newly delivered mothers who were diagnosed with traumatic childbirth	Recruited immediately after birth Inclusion: having an healthy term infant, vaginal delivery, mother's ability to speak Iranian, having no mental illness, no psychiatric medication, no history of infertility of traumatic childbirth Exclusion: mothers or babies who required special care, received breastfeeding advice, and those who had stressful life events during the previous year Random assignment (4 block design) to: 1. Magical first hour ($n = 42$) Control group ($n = 42$)	Objective (PTSD) DSM-5IES-RMeasured at 3 postpartum time points: 1. 2 weeks 2. 4–6 weeks 3. 3 months	NTF Magical first hour: 9 instinctive stages (Brimdyr, 2011; Phillips, 2013) Control group: skin-to-skin contact of the baby and mother on routine care procedures	Medium effect for NTF (magical first hours) at 2 weeks, small effect at 4–6 weeks, and large effect at 3 months postpartum in reducing trauma symptoms (IES-R)
Asadzadeh et al 2020 Iran Quantitative: RCT Hospital	To investigate the effectiveness of a brief midwife-led counselling based on Gamble and colleagues' approach in decreasing PTSD, depression, and anxiety among women who had experienced a traumatic childbirth	$N = 90$ women experienced a traumatic childhood	Recruited after birthInclusion: 18–35 years of age, able to speak Persian, in last pregnancy trimester, having a single embryoExclusion: score above 10 on the EPDS, history of abortion or infertility, mental or physical chronic diseases, taking medicine that causes depression, history of postpartum depression in the first-degree relative, and experience of a major stressful event during the past yearRandomly assigned, using a block randomization code: 1. Intervention ($n = 45$)	Objective (PTSD) DSM-5 PCL-5	TF Trauma-focused counselling vs control group (postnatal routine care) Face-to-face counselling within 72 h after giving birth, and a telephone counselling session 4–6 weeks after giving birth Intervention emphasises the therapeutic relationship, acceptance of experiences, expression of emotions, reviewing labour management increasing social support, and problem	Significant reduction for both trauma-focused intervention and control group at 4–6 weeks, but significant decrease for intervention group at 3 months on both trauma symptoms (PCL-5) and depression (EPDS)

(*continued on next page*)

Table 2 (*continued*)

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
			2. Control group ($n = 45$)		solving Control group: postnatal routine care	
Ayers et al 2007 UK Case study	To describe the use of CBT interventions to treat postnatal distress in two case studies of women with postnatal PTSD	$N = 2$		Subjective BTSarah had an emergency caesarean, and described: 1. Feeling stupid, a failure, not being able to cope 2. Other people will reject her because she had a prior abortion 3. Withdrawing from other people, keeping everything inside 4. Angry at the midwife Juliet had an instrumental birth (vaginal with forceps), with postnatal fecal incontinence, and described: 1. Feeling dirty 2. Blaming herself and her husband for the birth 3. Blaming the hospital for not intervening earlier 4. Intense anger outbursts 5. Flashbacks 6. Avoidance of labour ward 7. Emotional numbing	TF Trauma-focused (TF-CBT) Intervention for Sarah consisted of 10 sessions: CBT, challenging beliefs about abortion, relieving the birth (identify hotspots - acting out confronting the midwife, visiting the labour ward), rescripting her flashbacks (imaging different health care professionals in the room) Intervention for Juliet consisted of 12 sessions: visit to the labour ward, reliving was taped and Juliet listened to the tape regularly, cognitive reappraisal of negative beliefs about herself, and increasing exercise	For Sarah, PTSD symptom remission, change of belief about self and others For Juliet, PTSD symptom remission, less depression, and improvement in relationship with husband
Bahari et al 2022 Iran Quantitative: RCT Metropolitan hospital	To determine the effect of supportive counselling on mother's psychological reactions and mother-infant bonding following traumatic childbirth	$N = 166$ postpartum women with psychological birth trauma admitted to public hospitals in Iran	Recruited postpartum on the wardInclusion: vaginal delivery or emergency caesareanExclusion criteria: history of mental illness, taking antidepressants, having diseasesduring pregnancy, history of recent traumatic events, history of perinatal lossRandom assignment to two groups: 1. Individual supportive counselling ($n = 83$) 2. Control group ($n = 83$)	Objective (PTSD) DSM-5 Criterion A PCL-5	TF Trauma-focused supportive counselling Intervention: two in-person sessions of supportive counselling (emotions, baby care, women's concerns, increasing confidence), before hospital discharge, and 10–15 days after delivery (focusing on coping with trauma symptoms, and a telephone consultation 4–6 weeks after delivery Control group: postnatal routine care	Large effect for trauma-focused supportive counselling versus control in reducing trauma (PCL-5) and depression (EPDS) symptoms
Bailey et al 2008 UK Metropolitan Qualitative: grounded theory	To explore and evaluate women's experiences of the Birth Afterthoughts Service at North Bristol, and evaluate if, or what, aspects of the service are of benefit to the women	$N = 7$ women who used the service during 2005	Six used the service after birth of first baby, and one after birth of fourth baby One diagnosed with PTSD 6–14 weeks after baby was born	Subjective BT Presence of psychological trauma after birth	TFTrauma-focused qualitative interviewsTwo themes: 1. Listening 2. Explaining Women's experiences of service: need to be listened to and understand their experience of childbirth including, need to talk,	Positive view of the service

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Table 2 (*continued*)

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
					clarification of terms, understanding their experience, acknowledgment of a 'hard time', feelings of relief, closureRole of midwife: caring, empathy, understanding, professional knowledge, access to records, and preparation	
Blainey et al 2015 UK Qualitative: template analysis	To explore the experience of writing about a traumatic birth experience and sharing it online	$N = 12$ women who had submitted their stories about traumatic birth experiences to Birth Trauma Association were interviewed about their experience after writing (before posting) and 1 month after story posted online	Exclusion: being male, having written their story more than 3 months previously, receiving therapy relating to experience, not reporting experience as traumatic (Criterion A, DSM)	Objective BT (PTSD) DSM-IV-TR Criteria A IES-R Interview schedule: to understand the reasons to write about a traumatic birth experience, the process for doing so, reasons for sharing this writing, and perceived immediate and delayed effects of writing	TF Trauma-focused qualitative interviews	Overarching theme: am I justified in feeling traumatised? Themes: Choosing to write and share stories (to help others, gain meaning, positive outcome, gaining a sense of mastery in response to feeling trapped and out of control, to communicate something that is difficult)
Chiorino et al 2020 Quantitative: RCT Italy	To investigate the effectiveness of brief EMDR intervention, as compared to treatment-as-usual (TAU) in women with postpartum PTSD symptoms	$N = 27$ women recruited in the maternity ward in the aftermath of child	Recruited on the maternity ward by a clinical psychologistWomen who had experienced a traumatic childbirth in the previous hours or at most 3 days before, score above 24 on the IES-R, 18 years old, and fluent in ItalianExclusion: having a baby in NICU, perinatal loss, presence of psychiatric disorders, and intellectual disabilityRandomly assigned to: 1. EMDR ($n = 19$) 2. TAU ($n = 18$)	Both Objective and Subjective BT Objective (presence of adverse events, e.g., obstetric complications) IES-R Subjective (e.g., perceived loss of control, intense fear and pain during labour, lack of support)	TF Intervention: EMDR Recent Birth Trauma Protocol TAU: standard psychological supportive therapy about central themes related to traumatic childbirth (focus on emotions experienced during childbirth, current difficulties related to caregiving, breastfeeding, and psycho-physical recovery)	Significant large effect for reducing trauma symptoms (IES-R) for TF intervention (EMDR)
Deforges et al 2022 Switzerland Quantitative: pre-post intervention Metropolitan hospital	To test whether a single session behavioural intervention (Tetris) can reduce the number of childbirth related intrusive memories (Ims) and childbirth related PTSD (CB-PTSD) symptom severity	$N = 18$ recruited from Lausanne University Hospital Exclusion: maternal or child severe illness, insufficient French-speaking level, established intellectual disability or psychiatric history, alcohol abuse, or illegal drug use	Recruited if given birth 6 weeks ago and had 4+ childbirth related intrusive memories over the past 2 weeks	Objective BT (PTSD) DSM-5 Criteria A	NTF Intervention: Narration of childbirth experience (5–7 min) Tetris	Significant large effect for reducing trauma symptoms (PCL-5) at 1 month after intervention Intervention rated as highly acceptable
Deforges et al 2023 Switzerland Quantitative: randomised controlled trial	To test the efficacy of an early single-session intervention, including a visuospatial task on the prevention of maternal CB-PTSD symptoms, at six weeks and six months postpartum	$N = 146$ women who recently gave birth (within first 6 h)	Recruited from Swiss University HospitalsInclusion: unplanned caesarean at 34+ weeks, gave birth to a live babyExclusion: insufficient French-speaking skills, established intellectual disability or psychosis, sever maternal or infant illness, infant required	Objective (PTSD) and Subjective (BT) DSM-V Criterion A PCL-5 Perception of childbirth as traumatic when scored 2+ on a 7-point Likert scale (1 = *not at all*; 7 = *extremely*)	NTF Intervention: cognitive visuospatial task, lasting 15 min (Tetris) delivered while women were still in the hospital bed (within 6 h of birth) Placebo: instructed not to sleep while keeping a written activity log (e.g., being with baby,	Significant intervention effect on intrusions and arousal, but no effect on avoidance and alternations in cognition and mood PCL-5) at 6 weeks Significant intervention effect for reducing intrusions, arousal, negative

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Table 2 (*continued*)

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
			intensive care at birth, alcohol abuse and/or illegal drug use during pregnancyRandom assignment to: 1. Intervention ($N = 74$) 2. Placebo ($N = 72$)		lying on my bed, reading messages on my phone)	alterations in cognition and mood, but not avoidance (PCL-5) at 6 months No significant group differences for CAPS-5
Gamble et al 2005 Australia Quantitative: RCT Hospital	To assess a midwife-led brief counselling intervention for postpartum women at risk of developing psychological trauma symptoms	$N = 103$ women who met criteria for birth trauma	Recruited from antenatal clinics of maternity teaching hospitals in Brisbane, and randomly assigned to if endorsed birth trauma: 1. Intervention ($n = 50$) 2. Control ($n = 53$) Inclusion: 18+ years, expected to give birth to a live infant, able to complete questionnaires, interviews in English, and in third trimesterExclusion: women with a stillbirth or neonatal death	Objective BT (PTSD) Criterion A DSM-IV-TR MINI-PTSD	TF Intervention: counselling intervention within 72 h of birth by a midwife, and at phone at 4–6 weeks postpartum. Counselling intervention incorporated elements of critical stress debriefing within the childbirth context Control group: standard postnatal care	Significant reduction in trauma symptoms for intervention group, low relative risk of depression, low relative risk of stress, and low feelings of self-blame compared to control group, at 3 months postpartum (MINI-PTSD)
Geller et al 2018 America Quantitative: pre-post design Metropolitan service for women from minority background	The aim is to present an overview of Mother Baby Connections (MBC)	$N = 20$ predominantly minority women recruited if given birth within the last 20 months Range of racial, ethnic, and socioeconomic backgrounds		Objective (CB-PTSD) DSM Criteria A City BiTS	TF and NTF Intervention: Mother Baby Connections – an intensive outpatient program specialising in perinatal mental health. A comprehensive family-centered, attachment-informed, approach using short-term TF and NTF interventions	Medium to large effect sizes for reduction in birth trauma symptoms at 20 months (City BiTS) Viable model for outpatient care but small number of women and over half left the program
Horsch et al 2017 Switzerland Quantitative: RCT Metropolitan hospital	To evaluate whether the number of intrusive traumatic memories mothers experience after emergency caesarean section (ECS) could be reduced by a brief cognitive intervention	$N = 56$ women recruited at Swiss University hospital	Recruited if given birth via ECS and given birth to a live baby a term within the previous 6 h, and randomly assigned to intervention (usual care plus cognitive task procedure) or control (usual care) Inclusion: women (over 18 years of age) who had undergone an ECS, gave birth to a live baby within previous 6 h Exclusion: planned caesarean section, insufficient French, and baby transferred to NICU	Objective BT (if had an ECS)	NTF Intervention: visuospatial task (Tetris) for 15 min, within six hours, following ECS Control group: usual care	Lower re-experiencing symptoms at 1 week in the intervention group compared to control group Significant reduction in the number of intrusive memories over time in intervention group
McKenzie-McHarg et al 2014 UK Warwick Hospital Qualitative	To implement and evaluate a pink sticker communication system to alert midwifery and obstetric staff to women who are vulnerable and require extra support	A focus group with midwives ($n = 4$) In-depth discussions with women ($n = 4$) Women with experience of the pink sticker system ($n = 4$) Interviews with women ($n = 53$) Review of perinatal database to establish proportions of perinatal referrals	Women with experience of the pink sticker system on antenatal notes recruited if given birth within the previous years	Previous history of psychological difficulties, risk factor for BT, and referred to the perinatal psychological service	NTF Intervention: Warwick Hospital perinatal psychology service – dedicated perinatal psychology service that provides support to women and their partners during pregnancy and up to 6 months postpartum	Favourable feedback from women (feel cared for, understood, and contributed to individual care plan), but some ($n = 3$) mentioned potential for labelling or stigma Favourable feedback from midwives but also wanted more training (received 4 h) Review of postnatal notes indicated some women developed subjective birth-related trauma, but at lower levels than years

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Table 2 (*continued*)

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
						previously (before pink sticker system intervention) based on lower levels of referrals for PTSD
Meades et al 2011 UK Quantitative Hospital	To evaluate a midwife-led postnatal debriefing service at two NHS trusts for women that request it	$N = 46$ women	Recruited from hospitals, who requested debriefing and also met criteria for birth trauma Completed questionnaires before intervention, after intervention, and 1-month follow-up Inclusion: gave birth at the NHS, met criterion A, had not asked for or been referred for debriefing	Objective BT (PTSD) DSM-IV-TR Criterion A PSS-SR	Intervention: 1 session of postnatal debriefing, opportunity to discuss any aspect of pregnancy and birth, offered to women after childbirth Control group: usual care	PTSD symptoms (PSS-SR) reduced over time in both groups, but greater decreases for women who attended postnatal debriefing Women who requested debriefing had higher levels of depression, PTSD, less social support, and higher negative appraisal of birth at 1 month Women in debriefing group had a greater reduction in PTSD and negative appraisals than women in control group. For PTSD, educed re-experiencing, arousal, not avoidance
Mitchell et al 2018 Australia Online Quantitative: pre-post design	To evaluate the acceptability and potential utility of a small package of online resources designed to improve self-compassion for mothers of infants	$N = 262$ women recruited who had a baby within the last 24 months	Recruited from a larger study on self-compassion, psychological flexibility, and maternal and child outcomes in relation to difficult childbirth and breastfeeding experiences inclusion: women had a baby within the last 24 months, over 18 years, currently live in Australia or New Zealand	Objective (PTSD) IES-R	NTF Intervention: two videos and a downloadable tip sheet on self-compassion	Significant small reduction in trauma symptoms (IES-R) post-intervention
Mojrian et al 2018 Iran Quantitative: RCT	To determine the effect of supportive counselling intervention on symptoms of ASD in women after an emergency caesearen delivery	$N = 126$ women recruited in a hospital in Iran	Recruited from postnatal wards of Afzalipour and Payambar-e Aazam hospital following an emergency caesarean section Inclusion: term birth and apparent health of neonate, ability to speak and understand Persian, Iranian nationality, no history of mental illness or taking psychiatric drugs, and no history of infertility or miscarriage Exclusion: Special care requirements, use of counselling services outside hospital, experience of stressful events (e.g., death of beloved ones, accidents during a year before labour or before end of study)	Objective (PTSD) DSM-IV-TR Criteria A ASDQ	TF Intervention: individual and face-to-face supportive counselling, 40–60 min, by a midwife, within 24–72 h after birth Control group: routine postpartum care	For re-experiencing, significant reduction for intervention group from 1 week to 3 weeks, and significant increase for control group For avoidance, significant reduction for intervention group from 1 week to 3 weeks, and significant increase for control group
Nieminen et al 2016 Sweden Quantitative: RCT	To investigate the effects of a trauma-focused, internet-based, self-help programme with limited therapist contact, on PTSD, in relation to childbirth in	$N = 56$ women recruited via convenience sampling	Recruited online via a websiteInclusion: given birth within the last 3 monthsRandomly assigned to: 1. Intervention ($N = 28$)	Objective (PTSD) DSM-IV-TR Criterion A Traumatic Events Scale (TES)	TF Intervention: TF-ICBT, 8 modules of an internet delivered program with psychoeducation, anxiety coping	Significant medium effect for reducing trauma symptoms (IES-R) in the intervention group, compared to the control group

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Table 2 (*continued*)

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
	a group of Swedish-speaking women		2. Control group (waiting list, $N = 27$)		methods, skills training, imaginary and *in vivo* exposure, and cognitive restructuring Control group: waiting list	
Priddis et al 2017 Australia Qualitative	To explore early parenting experiences of women who had accessed residential parenting services and considered their birth was traumatic	$N = 8$ women	Recruited who attended a residential parenting service, or had a referral but were yet to use it	Subjective BT Perception of birth as traumatic	TF qualitative interviewsOne overarching theme: the perfect storm of traumaFour subthemes: 1. Bringing baggage to birth 2. Trauma through a thousand cuts 3. Thrown into the pressure cooker 4. Trying to work it all out	How women are cared for during their labour, birth, and postnatal period impacts on how they manage early parenthood – support is crucial for women
Roberts et al 2021 Qualitative North West United Kingdom	To explore women's experiences and perceptions of the birth trauma group program, and to identify recommendations for course development	$N = 8$ women who completed the birth trauma group	Recruited after attending birth trauma group program	Subjective BT	TF Intervention: Coping with Birth Trauma (CwBT), 6-week, 2-hourly sessions on psychoeducation support group program with trauma, mindfulness, CBT	Three themes: creating a difference, growth and renewal, and complaints and recommendations
Ryding et al 2004 Sweden Quantitative: RCT	To test a model of group counselling for mothers after emergency caesarean	$N = 162$ women	Recruited at a hospital in Sweden after giving birth to a live baby by emergency caesarean, and randomly assigned to: 1. Intervention ($n = 73$) 2. Control ($n = 89$)	Objective BT (PTSD) Emergency caesarean birth IES-R	TF Intervention: 2 group sessions conducted at about 2 months postpartum for women who had an emergency caesarean birth to discuss experiences Control group: offer for individual consultation to discuss recent delivery, if they wished, after completing questionnaires at 6 months postpartum	No significant differences between groups on PTSD (IES-R) at 6 months postpartum
Sandstrom et al 2008 Sweden Quantitative: experimental	To conduct a pilot study of EMDR	$N = 4$ women with PTSD after childbirth (one pregnancy, three non-pregnant)	Recruited 1–3 years after EMDR treatment, referred with severe fear of childbirth and after a previous traumatic childbirth	Objective BT (PTSD) DSM-IV-TR Criterion A TES	TF Intervention: 1 session of CB-focused EMDR treatment with a follow-up session	All of the 4 participants reported reduction of PTSD after treatment, and 1–3 years later this benefit remained for 3 of the 4 women Symptoms of intrusive thoughts and avoidance seemed most sensitive for treatment, not negative mood or cognitive
Slade et al 2020 UK Quantitative: RCT	To test whether providing psychological self-help materials would significantly lower the incidence of PTSD at 6–12 weeks postnatally	$N = 678$ women	Recruited from the National Health Service (NHS) in the North West of EnglandRandomly assigned to: 1. Self-help with usual care ($n = 336$) 2. Usual care ($n = 342$)	Objective BT (PTSD) Diagnostic and sub-diagnostic PTSD using CAPS-5 clinical interview	NTF Intervention: Stress and Wellbeing After Childbirth (STRAWB2), self-help psychological materials (leaflet and a film) Control group: usual care	Diagnostic or subdiagnostic PTSD rates at follow-up (6–12 weeks) did not differ between groups Many women experience a traumatic birth and risk developing PTSD, but self-help strategies without professional support are insufficient and should not be routinely introduced

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Table 2 (*continued*)

Author/s	Aim	Participants	Methodology	Measurement: (Objective BT vs Subjective BT)	Intervention: (Trauma-focused [TF] intervention vs non-trauma focused [NFT])	Outcome
Stramrood et al 2011 Netherlands Case study	To evaluate the possibility of using EMDR for women with symptoms of PTSD following childbirth	*N* = 3 women	Referred for EMDR after reporting PTSD following previous childbirth	Objective BT (PTSD)	Intervention: 2–4 treatment sessions of EMDR for 3 women in the subsequent pregnancy following previous traumatic childbirth	All 3 women reported absence of posttraumatic stress (hyperarousal)
Suarez et al 2023 Russia Quantitative: cross-sectional	To investigate association of postpartum PTSD (PP-PTSD) and rates of traumatic birth experience with past traumatic events	*N* = 2,579 women	Recruited online, and given birth within the previous 12 months Inclusion: given birth within the last 12 months	Objective BT (CB-PTSD) City Birth Trauma Scale	TF cross-sectional survey	Higher scores of PP-PTSD among women with history of traumatic events Perinatal loss and previous traumatic birth showed moderate but inconsistent effects Support during labour did not having a buffering effect for participants with past trauma but did buffer against PP-PTSD
Turkstra et al 2013 Australia Quantitative: RCT Metropolitan hospitals	To investigate the impact of pre-existing mental ill health on postpartum mental health outcomes	*N* = 262 women recruited from 4 public hospitals in Western Australia and Queensland in third trimester of pregnancy	Inclusion:Randomly assigned to: 1. Intervention (PRIME, *n* = 137) 2. Active control (parenting group (*n* = 125)	Objective BT (PTSD) DSM-IV-R Criterion A Screened within 24–72 h of birth to determine if met diagnostic criteria for PTSD	TF Intervention: PRIME (Promoting Resilience in Mothers' Emotions) is a midwifery-led counselling intervention based on CBT, offered face-to-face within 72 h of childbirth, and again at 6 weeks postpartum (telephone) Control group: parenting group	Both groups had improvements in health-related quality of life (EQ-5D); however, women with a history of previous mental health reported more improvement in quality of life, indicating that a brief intervention at birth and 6 weeks may not be sufficient A short-term intervention at birth and 6 weeks is effective in improving well-being for women with a traumatic birth, but women with a mental heath history will need more ongoing support (used more telephone sessions)
Williamson et al 2021 UK Quantitative: experimental Metropolian hospital	To evaluate routinely collected data from a 'Birth Trauma' psychology clinic integrated into maternity services, in order to review effectiveness for women with symptoms of PTSD following childbirth	*N* = 114 women	Referred for psychological assessment and intervention following a traumatic birth experience	Objective BT (PTSD) IES-R	TF Intervention: Birth Trauma Psychology Clinical, usually 2 assessment sessions ad 5 intervention sessions, although adapted to women's needs and can include TF-CBT, EMDR, or CFT based on the case conceptualisation constructed with womn	Significant reductions in trauma symptoms (IES-R) after intervention

Note: CRIBM = Coping Response Inventory of Billings and Moos; DASS-21 = Depression, Anxiety, and Stress Scale; EMDR = Eye Movement Desensitisation and Reprocessing; EPDS; Impact of Events Scale – Revised (IES-R).

reported in 12 studies (Horsch et al., 2017, Abdollahpour et al., 2018, Abdollahpour et al., 2016, Asadzadeh et al., 2020, Chiorino et al., 2020, Deforges et al., 2022, Mojrian et al., 2018, Mitchell et al., 2018, Slade et al., 2020, Meades et al., 2011). Nine reported a structured approach to intervention: three used a visuospatial (Tetris) task (Horsch et al., 2017, Deforges et al., 2022, Deforges et al., 2023), two used a bonding intervention (magical first hour (Abdollahpour et al., 2016) and skin-to-skin contact (Abdollahpour et al., 2016)), one used CBT (Abdollahpour et al., 2018), one used an online self-compassion video and tip sheet (Mitchell et al., 2018), one used a standard psychological intervention (Chiorino et al., 2020), and one used an online video and self-help materials (Slade et al., 2020). Eight of the nine structured approaches resulted in a significant decrease in PTSD symptoms. The non-significant study was an online video and self-help materials at 4–6 weeks postpartum by a midwife (Slade et al., 2020). Three studies reported an unstructured approach of postnatal midwifery care (Asadzadeh et al., 2020, Mojrian et al., 2018, Meades et al., 2011). Two of the three postnatal care (midwifery) interventions resulted in significant reductions in PTSD

Table 3
Mapping of the elements of the interventions for BT/PTSD for trauma-focused interventions.

Authors	Intervention	Measurement	Timing of intervention/outcome							
			Within first 72 h	1–2 weeks	4–6 weeks	2–3 months	4–6 months	6–12 months	1–3 years	Sub preg
Structured										
Ayers et al 2007	TF-CBT	Subjective BT					12 session (psych)	PTSD*		
Nieminen et al 2016	TF-CBT	Objective BT (PTSD)				8 sessions (online, Psych)	IES-R*			
Sorensen 2003	TF/CBT	Objective BT (CB-PTSD)							5 sessions (psych) Well-being*	
Turkstra et al 2013	TF-CBT	Objective BT (PTSD)	1 session (midwife)		1 session (telephone, Midwife)	PTSD: NR Well-being*				
Chiorino et al 2020	EMDR	Objective (PTSD) and Subjective BT	1 session (psych)		IES-R***	IES-R***				
Sandstrom et al 2008	EMDR	Objective BT (PTSD)							1 session (psych) PTSD*	
Stramrood et al 2011	EMDR	Objective BT (PTSD)								2–4 sessions (psych) PTSD*
Geller et al 2015	Specialist TF postnatal care	Objective BT (CB-PTSD)							Care over last 20 months City Bits**	
Williamson et al 2021	Specialist TF postnatal care	Objective BT (PTSD)					2 assessments5 Treatment (psych)	IES-R*		
Unstructured										
Abdollahpour et al 2018	TF Debriefing	Objective BT (PTSD)	1 session (counsellor)		EPDS**	EPDS**				
Meades et al 2011	TF Debriefing	Objective BT (PTSD)					1 session (midwife)	PSS-SR**		
Ryding et al 2004	TF Debriefing	Objective BT (PTSD)				2 sessions (group by psych and midwife)		IES-R		
Asadzadeh et al 2020	Counselling	Objective BT (PTSD	1 session (midwife)		PCL-5					
Bahari et al 2022	Counselling	Objective BT (PTSD)	1 session (counsellor)	1 session (telephone, counsellor)	1 session (telephone, counsellor)	PCL-5***				
Gamble et al 2005	Counselling	Objective BT (PTSD)	1 session (midwife)		1 session (telephone, midwife)	MINI-PTSD*				
Mojrian et al 2018	Counselling	Objective BT (PTSD)	1 session (midwife)	IES-R*						

* small effect, ** medium effect, *** large effect, NR = not reported.

symptoms.

When (timing): immediate vs. delayed. The majority of the interventions in the 16 studies delivered the first session within the first 72 h (Horsch et al., 2017, Abdollahpour et al., 2018, Abdollahpour et al., 2016, Asadzadeh et al., 2020, Chiorino et al., 2020, Gamble et al., 2005, Mojrian et al., 2018, Turkstra et al., 2013, Bahari et al., 2022, Deforges et al., 2023, Meades et al., 2011). Two studies delivered the first intervention at 4–6 weeks postpartum (Deforges et al., 2022, Slade et al., 2020), two at 2–3 months postpartum (Nieminen et al., 2016, Ryding et al., 2004), three between 1–3 years later (Mitchell et al., 2018, Sandström et al., 2008, Sorenson, 2003), and one in the subsequent pregnancy (Stramrood et al., 2012). Fourteen of the sixteen interventions with a first session within 72 h of birth reported a significant decrease in PTSD symptoms (not significant – 1 session of unstructured trauma focused counselling (Asadzadeh et al., 2020) and usual postnatal care by a midwife (Mojrian et al., 2018)). Trauma-focused visuo-spatial task intervention at 4–6 weeks postpartum reported significant decrease in PTSD symptoms in was noted, Tetris (Deforges et al., 2022) compared with non-trauma focused self-help materials (Slade et al., 2020). TF-CBT delivered online (8 sessions) intervention at 2–3 months reported a significant decrease in PTSD (Nieminen et al., 2016) compared with trauma-focused group intervention, 2 sessions of a group program by a psychologist and midwife (Ryding et al., 2004).

How (delivery): face-to-face, digital or blended. All of the interventions, but two, were first delivered in person (Mitchell et al., 2018, Slade et al., 2020). Three studies noted a follow-up phone call at 1–2 weeks (Bahari et al., 2022), and at 4–6 weeks postpartum (Gamble et al., 2005, Turkstra et al., 2013, Bahari et al., 2022). A midwife delivered the intervention in nine studies (Abdollahpour et al., 2018, Abdollahpour et al., 2016, Asadzadeh et al., 2020, Gamble et al., 2005, Mojrian et al., 2018, Turkstra et al., 2013, Meades et al., 2011) compared to, a counsellor (Abdollahpour et al., 2018, Bahari et al., 2022), and psychologist (Horsch et al., 2017, Chiorino et al., 2020, Deforges et al., 2023).

Qualitative studies. An intervention identifying pregnant women at

Table 4
Mapping of the elements of the interventions for BT/PTSD for non-trauma-focused interventions.

Authors	Intervention	Measurement	Timing of intervention/outcome							
			Within first 72 h	1–2 weeks	4–6 weeks	2–3 months	4–6 months	6–12 months	1–3 years	Sub preg
Structured										
Abdollahpour et al 2018	CBT	Objective BT (PTSD)	1 session (counsellor)		EPDS*	EPDS**				
Abdollahpour et al 2016	Magical first hour	Objective BT (PTSD)	1 session (midwife)	IES-R**	IES-R*	IES-R***				
Abdollahpour et al 2016	Skin-to-skin contact	Objective BT (PTSD)	1 session (midwife)	IES-R*	IES-R*	IES-R*				
Mitchell et al 2018	Self-compassion	Objective BT (PTSD)							1 session (psych, Online) IES-R*	
Deforges et al 2022	Visuo-spatial task (Tetris)	Objective BT (PTSD)			1 session (psych)	PCL-5***				
Deforges et al 2023	Visuo-spatial task (Tetris)	Objective BT (PTSD) and Subjective BT	1 session (psych)		PCL-5* on intrusions and hyerarousal only			PCL-5* on instrusions, hyperarousal, negative cognition/ mood		
Horsch et al 2017	Visuo-spatial task (Tetris)	Objective BT (PTSD)	1 session (psych)	Frequency of intrusive memories*						
Chiorino et al 2020	Standard psychological treatment	Both Objective BT (PTSD) and Subjective BT	1 session (psych)		IES-R*	IES-R*				
Slade et al 2020	Self-help materials	Objective BT (PTSD)			Leaflet and a film (midwife)	PTSD				
Unstructured										
Asadzadeh et al 2020	Postnatal care	Objective BT (PTSD)	Midwife		PCL-5*	PCL-5				
Meades et al 2011	Postnatal care	Objective BT (PTSD)	Midwife				PSS-SR*			
Mojrian et al 2018	Postnatal care	Objective BT (PTSD)	Midwife	IES-R						

* small effect ** medium effect *** large effect.
NR = not reported.

risk of BT using a pink sticker system was noted in one study (McKenzie-McHarg et al., 2014). Women mostly reported favourable feedback about this service; that is, they felt cared for, understood, and the experience positively contributed to their birth plan. Some felt that there wss a potential for labelling and stigma.

Women's experiences of an intervention after their diagnosis of BT/PTSD was the focus of four studies (Roberts et al., 2019, Blainey and Slade, 2015, Priddis et al., 2018, Bailey and Price, 2008). These studies highlighted positive benefits for the women involved in the trauma-informed service. Women reported being listened to and feeling supported (Birth Afterthought Service: Bailey and Price, 2008), writing about their birth experience (Blainey and Slade, 2015), a service focused on their BT recovery (Priddis et al., 2018), and a sense of growth and renewal after an 6-week TF-CBT intervention (Roberts et al., 2019), as important in their intervention experience.

Discussion

Summary of evidence

The aim of this scoping review was to identify and provide some insight/clarity to the most effective healthcare interventions for BT in terms of what works best, when, and how.

What interventions work best?

The weight of the evidence favoured a structured approach. Seventeen of the eighteen studies using a structured approach (both trauma-focused and non-trauma-focused) reported a significant decrease in PTSD symptoms. The effects lasted up to 1–3 years (Sorenson, 2003), and in the subsequent pregnancy (Stramrood et al., 2012), for two studies. Seven of the ten studies using an unstructured approach (both trauma-focused and non-trauma-focused) reported a significant decrease PTSD, so the difference was marginal. Trauma-focused and non-trauma focused were both supported as interventions, but the key is that there is an evidence-based structure underpinning the intervention. The women in the qualitative studies reported that experiences of feeling cared for, listened to, and understood, while processing their traumatic birth experience, was important in their recovery. It may be that the relationship that develops between the woman and the practitioner, when discussing a traumatic experience that may involve intense feels of shame, anger, rage, or anxiety, plays a pivotal role in recovery. The three non-significant studies - self-help materials at 4–6 weeks postpartum (Slade et al., 2020), standard non-trauma-focused postnatal care by a midwife within 72 h of birth (Mojrian et al., 2018) and 2 group counselling sessions with a midwife and psychologist 2–3 months post-birth (Ryding et al., 2004) - did not involve that personal, individualised relationship, crucial for recovery.

When should the intervention be delivered?

The evidence clearly supports early intervention. One session usually within the first 72 h of birth, was consistently reported as effective in reducing trauma symptoms (Horsch et al., 2017, Abdollahpour et al., 2018, Abdollahpour et al., 2016, Asadzadeh et al., 2020, Chiorino et al., 2020, Gamble et al., 2005, Mojrian et al., 2018, Turkstra et al., 2013, Bahari et al., 2022, Deforges et al., 2023, Meades et al., 2011). This was supportive of both trauma-focused and non-trauma-focused when

delivered early. Trauma-focused intervention if delivered weeks to months after birth was also noted as being effective, although the later the intervention, the more sessions were usually needed to support recovery.

How should the intervention be delivered?

A face-to-face intervention usually delivered by a clinician (midwife /psychologist /counsellor) appears to be favourable in terms of delivery and positive outcomes. Four of the five studies using telephone or online, web-based, applications (Gamble et al., 2005, Nieminen et al., 2016, Slade et al., 2020, Turkstra et al., 2013, Bahari et al., 2022) found significant reductions in PTSD symptoms. Given the logistical challenges of face to face delivery, embedding an aspect of digital mental health interventions may be beneficial, particularly in rural/remote communities and to facilitate scalability.

This scoping review highlights the majority of studies favoured early screening for both Objective and Subjective BT. Only one study recruited in the subsequent pregnancy (Turkstra et al., 2013). Although antenatal planning in the subsequent pregnancy is beneficial, the relationship between the woman and provider, commencing in pregnancy (continuity of care) may be fundamental to reducing effects of BT. This was highlighted in the recent Birth Trauma Inquiry; the acknowledgment, validation, and capacity for women to process and talk about the birth, within the context of specialised, compassionate, care, may be an integral to their recovery.

Clinical implications

The findings of this scoping review have several important clinical implications for healthcare providers. The evidence strongly supports the need for early intervention, ideally within the first 72 h postpartum, to reduce trauma symptoms effectively. Midwives, who are often the first point of contact for women in the immediate postpartum period, are uniquely positioned to recognise the early signs of BT/CB-PTSD and provide timely, evidence-based interventions. Identifying appropriate training pathways and ensuring that midwives are equipped with the necessary skills and knowledge to provide trauma-informed care will be a key step in addressing BT/CB-PTSD. Midwives must be adequately prepared to support women through these complex experiences, ensuring that interventions are culturally sensitive, contextually appropriate, and aligned with the needs and preferences of each individual women.

Given the logistical challenges and resource intensity of face-to-face interventions, integrating digital mental health tools into trauma care could offer flexible, scalable options, particularly for women in low-resourced settings (i.e., rural or remote areas), or those with limited access to face-to-face care. Health care providers could also explore innovative care models that include family-centered or group-based interventions to engage the wider support system. Continuity of care throughout the pregnancy and beyond is essential for effective trauma recovery, highlighting the need for healthcare systems to prioritise long-term, consistent support for women with BT/CB-PTSD.

Consideration of women's mental health history might be important when considering the length and duration of intervention, and also respecting women's choices about their care. Overall, the weight of the evidence strongly indicated intervening as early as possible, using structured evidence-based techniques (can be trauma-focused or non-trauma focused) and delivered face-to-face, at least initially. If intervening later, weeks to months after the birth, the evidence from the qualitative studies indicated that trauma-focused (talking about and processing the birth) was an important part of intervention as reported by women. Whether the intervention is trauma-focused or not initially may be influenced by the women's preference and choice, her mental health history, service and training constraints (i.e., EMDR is time and cost-intensive), and accessibility to continuity of care (i.e., EMDR requires less sessions than TF-CBT).

Limitations and future directions

This scoping review followed a detailed framework capturing all relevant literature during 2000–2023. Yet, it is reasonable to think the exclusion criteria of women having a higher risk for BT/PTSD (mental health history, previous traumatic birth, current traumatic birth experience, baby in intensive care) may have influenced the findings. To strengthen the evidence base, future research must include longitudinal studies that explore the long-term effects of various interventions on maternal mental health, parenting and subsequent pregnancies. These studies are essential to understanding the sustained impact of intervention on women's mental health and well-being beyond the immediate postpartum period, providing valuable insights for more effective strategies.

There is a clear need for more research on how BT/CB-PTSD manifests across diverse cultural contexts and how interventions can be tailored to meet the varying cultural and socioeconomic needs of women. Integrating community health workers into trauma intervention programs could significantly enhance accessibility, cultural sensitivity, and further increasing engagement and effectiveness in communities where healthcare access is limited. Such evaluation research would not only enhance the accessibility and effectiveness of interventions but also ensure that they are respectful and attuned to the values and practices of different communities.

Innovative intervention methods should be explored to expand the scope of trauma care. For example, group-based therapies, mindfulness practices, or family-inclusive care models (Van der Meulen et al., 2023) could address not only the mother but also her support system. These creative approaches may offer holistic solutions that integrate familial or social dynamics, which could help promote long-term health for both the mother and her family. Future research should integrate women with lived experience to deepen our understanding of the lived experiences of women with BT/CB-PTSD, ensuring women's voices are central in shaping healthcare interventions and better aligned with their needs and preferences. Future interventions must also ensure cultural and linguistic appropriateness to meet the needs of diverse populations. Addressing these disparities is crucial in ensuring that interventions are accessible, equitable, and effective for all women, particularly those from disadvantaged or underrepresented communities.

Conclusions

The aim of this review was to map the current literature on health practices for BT/CB-PTSD, identify key elements important for effective health practices, and highlight gaps in maternity care. The evidence demonstrates intervening early – at least 1 session by a clinician (midwife/ psychologist/ counsellor) within first 72 h of birth – will have immediate and short-term benefits in reducing BT/CB-PTSD symptoms. The intervention can be either trauma-focused or non-trauma-focused. When intervening later, weeks to months after the birth, the evidence supports a trauma-focused, structured, multi-session, approach to symptom reduction. Though small, evidence that digital approaches have the potential to be beneficial was noted. This may or may not indicate a potential role of integration of digital mental health into birth trauma care; however, without further research around feasibility, acceptable, sustainability, and scalability, one needs to remain cautious.

Statement of significance

Problem or issue

Though interventions exist to manage or reduce the effects of birth trauma (BT) and childbirth related posttraumatic stress disorder (CB-PTSD), there is no consensus on an effective healthcare intervention.

What is already known

Evidence on the “what” (trauma-focused or non-trauma-focused, “when” (within 72 h of birth, or weeks to months later), and “how” (face-to-face or online) of effective BT-informed health care practices is mixed.

What this papers adds

This paper identifies the effective elements of healthcare interventions for BT/CB-PTSD, focusing on the "what," "when," and "how" of best practices for intervention, providing clarity on the most effective approaches.

CRediT authorship contribution statement

Julie Jomeen: Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Frances Guy:** Supervision, Resources, Funding acquisition, Conceptualization. **Julia Marsden:** Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis. **Marilyn Clarke:** Validation, Conceptualization. **Jennifer Darby:** Validation, Funding acquisition, Conceptualization. **Angeline Landry:** Validation, Funding acquisition, Conceptualization. **Elaine Jefford:** Writing – review & editing, Writing – original draft, Validation, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

The authors have no conflict of interest to declare.

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