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REVIEW ARTICLE

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Trauma-Informed Care for Perinatal Psychological Trauma: Application Progress and Public Health Strategies

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Abstract

Perinatal psychological trauma has emerged as a critical public health concern with profound implications for maternal and child health as well as intergenerational trauma transmission. Trauma-Informed Care (TIC), operating as a universal prevention-oriented healthcare management framework, shows significant promise in restoring a sense of safety, mitigating perinatal post-traumatic stress disorder (PTSD), and advancing health equity. This narrative review synthesizes current research progress on the multidimensional characteristics and population-level burden of perinatal trauma, analyzes the core concepts and implementation frameworks of TIC, summarizes validated screening and assessment instruments, and thoroughly examines practical bottlenecks—including primary healthcare workforce shortages, socio-cultural stigma, and cross-sectoral referral fragmentation—along with corresponding coping strategies. Ultimately, this review aims to clarify the conceptual boundaries and theoretical foundations of TIC, providing an evidence-based framework to accelerate the translation of TIC principles from micro-level clinical operations into standardized, integrated public health systems.

Keywords Trauma-Informed Care; Perinatal Period; Psychological Trauma; Maternal and Child Health

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1. Introduction

The perinatal period—pregnancy, childbirth, and the 12 months postpartum—represents a unique stage marked by the most profound physiological and psychological transformations in a woman's life course, serving as a critical public health window that determines maternal and child health outcomes. During this window, the maternal population not only experiences dramatic fluctuations in hormone levels and physiological stress but also confronts compounding psychosocial stressors, including pregnancy-related distress, labor pain, and parenting role transitions. These overlapping factors significantly elevate the risk of psychological trauma, frequently precipitating adverse mental health outcomes such as perinatal post-traumatic stress disorder (PTSD) [1]. Perinatal psychological trauma impairs not only maternal physical and psychological well-being and social functioning, but it may also impede early childhood development by disrupting mother-infant bonding and interaction, thereby imposing a substantial disease burden on maternal and child health.

Trauma-Informed Care (TIC), a systemic healthcare management framework and a preventive intervention paradigm, emphasizes a deep understanding of, and responsiveness to, trauma epidemiology and its wide-ranging consequences. TIC advocates for establishing physically, psychologically, and emotionally safe organizational environments across the healthcare continuum, aiming to improve population health outcomes and advance health equity by rebuilding a sense of control, self-efficacy, and empowerment among affected populations [2]. Embedding TIC principles into the perinatal maternal and child healthcare system encourages service providers to evaluate maternal trauma experiences through the lens of a "three-tiered prevention" model. By implementing multidimensional universal precautions and targeted interventions spanning behavioral, psychological, and social support, TIC strengthens maternal psychological resilience and reduces the incidence of perinatal PTSD [3], demonstrating critical public health value in disrupting the intergenerational transmission of psychological trauma.

However, research on the application of TIC in perinatal populations remains in its infancy. Population-tailored screening and assessment tools, theoretical frameworks, and public health intervention pathways have yet to be systematically synthesized, and standardized clinical guidelines tailored to China's primary maternal and child healthcare system remain lacking. Therefore, this narrative review aims to systematically synthesize the multidimensional features of perinatal psychological trauma and map out TIC's theoretical frameworks, assessment instruments, current intervention practices, and implementation strategies. Ultimately, this review seeks to provide evidence-based guidance for maternal and child health professionals, public health policymakers, and clinical care teams, accelerating the translation and integration of TIC principles from micro-level clinical operations into macro-level maternal and child health service systems.

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2. Methods

2.1 Study Design

This study was conducted as a narrative review rather than a systematic review or meta-analysis. This approach was considered appropriate given the broad conceptual scope of the topic and the substantial heterogeneity in organizational settings, intervention modalities, study designs, and outcome measures. Unlike systematic reviews, this review did not involve exhaustive literature retrieval, independent dual screening, or formal risk-of-bias assessment.

2.2 Literature Search Strategy

This narrative review searched PubMed, Web of Science, and Scopus databases for peer-reviewed articles published between January 2000 and July 2026. Boolean operators were used to combine search terms from the following three domains: (1) trauma-informed care, including “trauma-informed care”, “trauma-informed practice”, “trauma-informed approach”, or “TIC”; (2) the perinatal context, including “perinatal”, “pregnant women”, “postpartum”, “maternal”, or “childbirth”; and (3) psychological trauma and mental health, including “psychological trauma”, “post-traumatic stress disorder”, “PTSD”, “birth trauma”, or “mental health”. In addition, the reference lists of relevant systematic reviews, clinical guidelines, and key primary studies were manually screened to identify additional relevant literature. Where available, greater emphasis was placed on evidence from large-scale longitudinal studies, randomized controlled trials, validated implementation frameworks, and systematic reviews.

2.3 Inclusion and Exclusion Criteria

Studies were eligible for inclusion if they met the following criteria: (1) they were original research articles, systematic reviews, meta-analyses, or implementation frameworks published in peer-reviewed journals; (2) they focused on women during the perinatal period, defined in this review as pregnancy, intrapartum, or up to 12 months postpartum; (3) they explicitly addressed TIC theoretical models, screening or assessment tools, implementation barriers, or public health interventions related to perinatal psychological trauma; and (4) they were published in English. Studies were excluded if they were conference abstracts without full-text availability, non-peer-reviewed commentaries, or publications unrelated to the objectives of this review.

3. Characteristics of Psychological Trauma in Perinatal Women

Perinatal women face a significantly increased physical and psychological burden due to the accumulation of multiple stressors, including the pressures of pregnancy, the intense pain of childbirth, and the transition to the role of a parent. Studies show that 54% of women view childbirth as a traumatic event [4], and the prevalence of perinatal PTSD ranges from 4.0% to 19.4% [5,6]; this group has thus become a high-risk population for psychological trauma. In terms of trauma sources, trauma exposure among perinatal women is notably diverse. Pre-pregnancy trauma primarily includes Adverse Childhood Experiences (ACEs) [7]and intimate partner violence (IPV) [8]; such past traumas are highly likely to be reactivated during medical care. Trauma during childbirth, meanwhile, is influenced by prenatal risk factors, physiological trauma during labor (such as labor pain and episiotomy), negative care experiences [9,10], and severe stressful events (such as preeclampsia, precipitous labor, and adverse neonatal outcomes) [11]. In addition, macro-level external factors such as natural disasters can also exacerbate the risk of trauma [12].

The core psychological outcomes of the aforementioned multiple traumatic exposures are primarily manifested as postpartum post-traumatic stress disorder (PTSD). Postpartum PTSD is a common yet often overlooked serious psychological disorder following childbirth, characterized by intrusive symptoms, avoidance behaviors, and hyperarousal [13]; its occurrence is closely linked to traumatic experiences during the delivery process. Of particular concern is that the inevitable physical exposure and hands-on procedures involved in perinatal care can easily serve as triggers for survivors of past trauma, thereby inducing avoidance of medical care and secondary trauma, which severely impacts maternal treatment adherence and recovery outcomes [14].

4. Overview and Implementation Framework Model of Trauma-Informed Care

4.1 Overview

Trauma-informed care (TIC) is a systematic service framework grounded in an understanding of trauma. The U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) defines it as a service-delivery approach that, based on an understanding of and responsiveness to the broad impacts of trauma, provides physical, psychological, and emotional safety for both practitioners and survivors and creates opportunities for survivors to rebuild a sense of control and empowerment [15]. This framework establishes six core principles—safety, trustworthiness and transparency, peer support, collaboration, empowerment, and cultural and gender sensitivity [16]. Its central logic lies in systematically embedding a trauma perspective into organizational policy, service processes, and clinical practice, thereby realizing a paradigm shift from “recognizing trauma” toward “systematic responsiveness” and preventing secondary trauma (traumatization) during service delivery. In 2024, China’s National Health Commission, together with multiple other departments, issued the Action Plan for Enhancing Medical Humanistic Care, which emphasizes “the integration of respect, empathy, and trauma-sensitive services” and provides a policy basis for the localized practice of TIC within Chinese healthcare settings [17].

4.2 Implementation Framework Model of Trauma-Informed Care

The establishment of these theoretical principles has laid the practical foundation for TIC, whereas translating the above concepts into clinical contexts in a systematic and operational manner relies on the support of concrete implementation frameworks. The “TIC Pyramid” developed by Raja et al. [18]is among the framework models most widely applied in current clinical practice. This model comprises five levels that ascend successively from therapeutic communication and trust building at the base, through assessment of the health impacts of trauma, interdisciplinary collaboration, and the enhancement of healthcare providers’ own trauma awareness, to systematic trauma-history screening at the apex, thus reflecting a progressive logic that extends from relationship building to systematic intervention. On this basis, the model further classifies TIC interventions into three tiers—universal, targeted, and specialist treatment—which correspond, respectively, to cultivating a safe environment for the entire population, providing early support for high-risk individuals, and delivering professional treatment for patients with severe symptoms. The three tiers are interconnected and dynamically adjusted, and patients may be flexibly referred across tiers as their condition evolves, thereby achieving individualized and continuous trauma care.

5. Screening and Assessment Tools for Perinatal Psychological Trauma

5.1 Antenatal Trauma Assessment Tools

5.1.1 Adverse Childhood Experiences Screening Form (ACES)

Developed by Felitti et al. in 1998[19], the ACES is the most widely used childhood trauma screening instrument worldwide and is primarily designed to assess adverse experiences—including abuse, neglect, and household dysfunction—sustained by pregnant and postpartum women before the age of 18. The questionnaire comprises 10 items covering emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect, together with adverse household environments such as domestic violence, mental illness among relatives, substance abuse, parental divorce, and family incarceration. Each item adopts dichotomous scoring, with 1 point assigned when the experience occurred and 0 when it did not, such that higher scores indicate more severe childhood trauma exposure. The scale has a Cronbach's α coefficient of 0.88 and has demonstrated favorable internal consistency and test–retest reliability; a series of subsequent perinatal studies have confirmed its significant associations with maternal postpartum depression and birth trauma responses [20,21] Its strengths lie in its concise items and rapid administration, which render it suitable for large-scale initial screening in obstetric outpatient settings. Its limitations are that it focuses exclusively on childhood trauma and does not encompass reproduction-related trauma such as miscarriage, infertility treatment, and a history of previous adverse birth, and that, because it relies on individual recall, it is susceptible to recall bias.

5.2 Intrapartum and Postpartum Trauma Assessment Tools

5.2.1 City Birth Trauma Scale (CBTS)

This scale was developed by Ayers et al.in 2018 based on the DSM-5 diagnostic criteria and is specifically designed to assess women's traumatic experiences during childbirth and their postpartum trauma symptoms [22]. The scale comprises 21 items spanning four symptom clusters—re-experiencing, avoidance, negative mood and cognition, and hyperarousal—and employs a four-point scoring method that rates symptom frequency over the preceding week, from "not at all" to "≥5 times," with scores of 0–3 assigned in ascending order and a total score ranging from 0 to 63; higher scores indicate greater symptom severity. Its strengths include its focus on immediate intrapartum trauma, its capacity to accurately identify trauma responses elicited by adverse childbirth experiences, and its good discriminant validity, and the scale has a Cronbach's α coefficient of 0.925. In 2020, Shen et al. translated and culturally revised the scale into Chinese [23]; the Chinese version comprises 29 items across two dimensions, namely birth-related symptoms and general symptoms, with an overall Cronbach's α coefficient of 0.934, demonstrating sound reliability and validity and providing a reliable research instrument for the diagnosis of postpartum post-traumatic stress disorder (PTSD) in China. Nevertheless, the scale contains a relatively large number of items and rating grades, and its scoring is complex; inconsistencies among its internal scoring systems render the scale structure insufficiently stable, such that reliability and validity can be examined only for the symptom-response subscales separately, and the symptom-frequency items and symptom-distress items cannot be subjected to joint reliability and validity testing.

5.2.2 Perinatal PTSD Questionnaire (PPQ)

This questionnaire was developed by DeMier et al. in 1996[24]. It is a 14-item self-report scale designed primarily to assess symptoms related to postpartum PTSD within 1–18 months after delivery. Each item is rated on a 5-point Likert scale, with 0 indicating "not at all" and 4 indicating "often," yielding a total score between 0 and 56, with a total score of ≥19 used as the cutoff criterion. The scale has a Cronbach's α coefficient of 0.9. Zhang et al. translated it into Chinese in 2017 and validated it among 280 mothers at 1–18 months postpartum through online questionnaire administration [25]. The Chinese PPQ retains 14 items rated on a 5-point Likert scale and has a Cronbach's α coefficient of 0.8, demonstrating favorable reliability and validity, and it is suitable for the clinical screening of perinatal PTSD among pregnant and postpartum women in China.

5.3 Comparative Analysis and Clinical Applicability of Perinatal Trauma Assessment Tools

The ACES, CBTS, and PPQ serve complementary purposes in perinatal trauma assessment. The ACES identifies adverse childhood experiences, whereas the CBTS focuses on childbirth-related trauma symptoms and the PPQ assesses postpartum PTSD symptoms. However, their application in clinical practice still faces challenges. On one hand, although the Chinese versions of the CBTS and PPQ have demonstrated reliability and validity in postpartum women [23,25], further research is needed to establish their applicability across diverse perinatal populations and cultural contexts. In collectivist cultures like China, the stigma surrounding psychological trauma and the reluctance to disclose family violence may also affect screening results. On the other hand, there is a notable gap between screening and intervention. Most studies focus on the psychometric properties of these tools, but lack clear clinical pathways for what actions to take after a high score is identified (e.g., referral to psychological services, trauma-specific therapies). Future perinatal trauma-informed care frameworks should integrate screening with individualized assessment and stepped-care interventions to ensure that identified needs are appropriately addressed.

6. Assessment Tools for Trauma-Informed Care Competence of Healthcare Workers

Although patient-centered screening tools can identify trauma experiences and related symptoms, effective implementation of trauma-informed care also depends on healthcare providers' ability to recognize trauma-related responses. This is particularly important in perinatal care, where procedures such as intimate examinations, childbirth interventions, and pain management may trigger past traumatic experiences or intensify feelings of vulnerability and loss of control. Therefore, healthcare providers need appropriate knowledge, attitudes, and practical skills to minimize the risk of retraumatization. Assessing provider competence helps understand how trauma-informed care is implemented in clinical settings and identifies training needs among staff. Thus, this section will focus on the healthcare provider level, discussing tools for assessing competence in trauma-informed care.

6.1 Trauma-Informed Care Competency Scale for Nurses (TICCS-N)

This scale was developed in 2026 by Huang Zhuo-er and colleagues at the Third Xiangya Hospital of Central South University and published in Nurse Education in Practice [26]. It was designed to fill the gap left by the absence of comprehensive instruments for assessing the trauma-informed care (TIC) competence of clinical nurses, and specifically to address the shortcomings of existing tools, namely incomplete psychometric data, low reliability, incomplete dimensional coverage, and the limitations imposed by Western cultural contexts. Grounded in the "4R" assumptions of TIC

proposed by SAMHSA as its theoretical framework, the scale was developed in two stages. In the first stage, nine Chinese and English databases, including CNKI, PubMed, and Embase, were searched (2000–2024) and combined with semi-structured interviews among 20 clinical nurses to systematically distill the core attributes of nurses' TIC competence and establish an initial item pool; subsequently, 16 experts from the fields of psychiatric nursing, mental health, and psychiatric rehabilitation social work (mean years of practice 19.87; 62.5% holding senior professional titles) were invited to conduct two rounds of Delphi correspondence consultation, through which items were screened and revised to form a preliminary version containing 39 items. In the second stage, 600 clinical nurses were recruited from two tertiary Grade A general hospitals in Changsha, Hunan Province. Item analysis was performed on the basis of classical test theory (CTT), and the sample was divided equally using the Solomon random split-sample procedure, with the halves allocated to exploratory factor analysis (EFA, n = 300) and confirmatory factor analysis (CFA, n = 300), respectively; an additional 52 nurses were recruited to evaluate test–retest reliability, and the report followed the STROBE criteria. The final scale retained 33 items organized into four dimensions: Realizing, which focuses on nurses' understanding of the prevalence of trauma, its health impacts, and the potential for recovery; Recognizing, which encompasses identifying trauma signs through multiple methods, screening high-risk populations, and discerning cultural differences in trauma presentation; Responding, which involves constructing a safe care environment, trauma-informed communication, mobilization of social support, and interdisciplinary collaboration; and Resisting Re-traumatization, which includes identifying and eliminating re-traumatization triggers in medical settings, destigmatization advocacy, team culture building, and nurse self-care. Items are rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), with no reverse-scored items, and higher scores indicate stronger TIC competence among nurses. The scale demonstrated favorable reliability and validity. For content validity, the item-level content validity index (I-CVI) ranged from 0.833 to 1.000, and the scale-level content validity index averaged across items (S-CVI/Ave) was 0.965; for construct validity, the EFA extracted four common factors accounting for 64.278% of the cumulative variance, and the second-order CFA model achieved good fit ($\chi^2/df = 1.505$, RMSEA = 0.041, GFI = 0.904, TLI = 0.968, CFI = 0.966); for reliability, the overall scale had a Cronbach's α coefficient of 0.956, with those of the dimensions ranging from 0.883 to 0.938; McDonald's ω was 0.957 for the overall scale and 0.885–0.939 for the dimensions; and the intraclass correlation coefficient (ICC) for test–retest reliability was 0.846 ($P < 0.001$, 95% CI = 0.742–0.911). This instrument is currently the first nurse-specific assessment tool that is grounded in the Chinese cultural context, theoretically framed by the "4R" assumptions, and covers the full range of TIC competence dimensions; it can be used for the baseline assessment of clinical nurses' TIC competence and for evaluating the effects of training interventions. However, its sample was restricted to two hospitals in Changsha, Hunan, and its applicability across regions and cultural populations remains to be further validated.

6.2 Attitudes Related to Trauma-Informed Care Scale (ARTICS)

This scale was developed by Baker et al. in 2016 to assess staff attitudes toward TIC and identify potential barriers to its implementation at the individuals and institutional levels [27]. Subsequent research by Baker et al. in 2021 further examined its application in healthcare and educational settings [28]. The ARTICS has three versions—the ARTICS-45, ARTICS-35, and ARTICS-10—and the appropriate version can be selected based on organizational goals and available resources. The ARTICS-45 contains 45 items across seven dimensions, with a Cronbach's α coefficient of 0.93. the ARTICS-35 contains 35 items across five dimensions, with a Cronbach's α of 0.91, and is suitable for institutions that have not yet introduced the concept of TIC. The ARTICS-10 contains 10 items, with two items drawn from each of five subscales. It has a Cronbach's α of 0.82 and is suited for organizations with limited time. All versions adopt a 7-point Likert scale, with higher total scores indicating more positive attitudes toward trauma-informed care among healthcare workers. The ARTICS was translated into Chinese and culturally adapted by Zhi et al. in 2022[29]. The Chinese version contains 35 items across six dimensions and has demonstrated favorable reliability and validity in its application among psychiatric nurses, with a Cronbach's α coefficient of 0.88. The scale has also been widely used in clinical settings such as emergency care, obstetrics and gynecology, and pediatrics.

6.3 Gap Kalamazoo Communication Skills Assessment Form for Trauma-Informed Care (GKCSAF-TIC)

This instrument was developed by Thang et al. in 2024 to assess healthcare professionals' communication skills in implementing TIC, particularly their ability to communicate with patients and their families [30]. Its dimensions include sensitive recognizing patients' traumatic experiences, responding empathetically to trauma-respecting experiences, avoiding language or behaviors that may retraumatize patients, respecting patients' autonomy and allowing them to disclose their trauma narratives at their own pace, and collaborating with patients and families' toes Tabish safe and trusting relationships. The instrument comprises 26 items rated on a 5-point Likert scale, with higher scores indicating stronger communication competence. The Cronbach's α coefficients of the respective dimensions range from 0.93 to 0.96, demonstrating good internal consistency. Using this instrument can help healthcare professionals identify their strengths and areas for improvement in communication, potentially contributing to better clinician–patient interactions. The assessment results can also provide hospital administrators with targeted feedback to guide ongoing communication skills development. However, this instrument has thus far been validated and applied only in pediatrics and has not yet been validated in the obstetric field.

6.4 Trauma-Informed Care Provider Assessment Tool (TIC-PAT)

This tool was developed by Hanson et al. in 2024 specifically to assess the overall competence of primary care providers in implementing TIC in clinical settings [31]. The scale contains 10 items presented in a 5-point Likert response format, with higher scores indicating greater competence in providing trauma-informed care. Based on the TIC Pyramid model [18], the 10 items of the TIC-PAT correspond to the five core levels of that model, covering patient-centered communication and care, awareness of the health impacts of trauma, interprofessional collaboration mechanisms, providers' awareness of their own traumatic experiences and stress responses, and trauma-related screening practices. The tool demonstrates good internal consistency, with a Cronbach's α coefficient of 0.85. The TIC-PAT provides a standardized assessment instrument to support TIC practice in primary care and may contribute to improving the quality of patient-provider interactions and enhancing providers' understanding of the health effects of trauma. Nevertheless, the tool has thus far been validated only in primary care settings, and its applicability to other healthcare settings requires further investigation.

6.5 Comparative Analysis and Clinical Applicability of the Competency Assessment Tools for Trauma-Informed Care of Healthcare Personnel

While the tools discussed above (TICCS-N, ARTICS, GKCSAF-TIC, and TIC-PAT) provide complementary assessments of healthcare workers' trauma-informed care (TIC) competence, their applicability to perinatal settings requires further investigation. First, perinatal-specific validation is lacking: the GKCSAF-TIC has been used in pediatric settings, the TIC-PAT has been validated in primary care, and the TICCS-N was evaluated among nurses in two hospitals in Changsha, China. Although the ARTICS has been used in obstetrics and gynecology, it primarily assesses general attitudes toward TIC rather than perinatal-specific clinical skills. Second,

cross-cultural adaptation needs further testing, especially in Chinese obstetric settings where cultural norms around trauma disclosure differ. Finally, there is a gap between screening and intervention: current tools identify competence deficits but lack clear guidelines for subsequent targeted training or psychological referrals. Future research should further examine the measurement properties and applicability of these instruments in perinatal healthcare settings and explore how assessment findings can inform targeted training and improve clinical practice, particularly in trauma-sensitive communication, respect for patient autonomy, and the prevention of retraumatization.

7. Application of Trauma-Informed Care in Perinatal Trauma

7.1 Implementing Trauma-Informed Care During the Antenatal Period to Foster Trust and Improve Infant Health Outcomes.

Adverse childhood experiences (ACEs), sexual violence, and intimate partner violence (IPV) constitute the principal sources of prior trauma. During pregnancy, a history of trauma frequently leads pregnant women to display strong resistance to and avoidance of antenatal examinations, thereby delaying the identification of high-risk pregnancies. Previous studies have indicated that due to the high prevalence of traumatic experiences and the common reality that patients may be reluctant to disclose such experiences [32]. Trauma-informed care should be implemented as a “universal preventive measure” for all pregnant women, to avoid damaging the trust between nurses and patients due to improper inquiries or reliance on disclosures. Racine et al. conducted a retrospective file review to compare the maternal and infant health outcomes before and after the implementation of trauma-informed care in a low-risk prenatal clinic in Canada [33]. The study included 601 pregnant women and incorporated the trauma-informed principles into prenatal care, including screening for adverse childhood experiences and related mental health support. The results showed that after the implementation of TIC, the adverse birth outcomes of infants improved. However, this study was a non-randomized retrospective design, and the subjects were from a low-risk prenatal clinic. Therefore, these findings should be interpreted with caution.

7.2 Implementing Trauma-Informed Care During the Intrapartum Period to Facilitate Individualized Care and Reduce the Risk of Re-traumatization

Physiological trauma (labor pain and episiotomy), stressful events (fear of anesthesia, and precipitous labor), and adverse maternal–neonatal outcomes (neonatal birth defects, and neonatal death), together with frequent invasive procedures, all may increase the risk of secondary trauma for the mother. To address the aforementioned risks, Marr et al. established a trauma-informed multidisciplinary clinic where obstetricians and reproductive psychiatrists jointly assessed maternal needs and collaboratively developed individualized birth plans with patients [34]. Specific measures included respecting women’s birthing preferences, optimizing pain management, enhancing communication and shared decision-making, and modifying the care environment. This approach provides practical guidance for integrating trauma-informed care between prenatal assessment and childbirth support. Moreover, healthcare providers ‘capacity for trauma-informed care is a crucial foundation for implementing the aforementioned measures. LeMarbe et al. conducted a single-group pre-posttest study involving 17 obstetric nurses who received training in trauma-informed pain management [35]. The results showed significant improvements in nurses’ knowledge (P=0.043) and skills (P=0.011) after training. However, the study had a small sample size and primarily evaluated outcomes at the provider level, making it insufficient to determine the impact of training on maternal birth outcomes. Overall, existing research provides preliminary guidance for the clinical implementation of trauma-informed care during childbirth, but most studies are limited by small sample sizes and non-randomized designs, leaving the effects on women’s birthing experiences and risk of retraumatization requiring further validation through high-quality research.

7.3 Implementing Trauma-Informed Care During the Postpartum Period to Promote Mother–Infant Attachment and Psychological Recovery

The postpartum period is a critical stage for maternal physiological recovery and adaptation to the maternal role. Previous traumatic experiences may not only exacerbate postpartum psychological distress but also undermine emotional bonding between mothers and their infants. Trauma-informed care emphasizes the integration of psychological support and intervention in the mother-infant relationship. A randomized controlled study involving 122 postpartum women showed that by integrating trauma awareness and attachment-oriented concepts into the mom Power program, through 10 multi-family group activities and 3 individual sessions, emotional regulation, parenting guidance, and social support were provided [36]. The results showed that among the 53 women who completed the 3-month follow-up, the proportion of those in the intervention group meeting the criteria for possible depression was lower than that in the control group (26% vs. 55%), suggesting that this intervention has a positive effect in improving depression among high-risk mothers. Furthermore, Rosenblum et al. conducted a randomized controlled trial involving 75 high-risk mothers [37]. The results showed that the intervention model incorporating the principle of trauma awareness could improve the attachment-related psychological representations and parenting reflection abilities of the mothers. Overall, the existing studies suggest that comprehensive interventions incorporating trauma awareness concepts have potential value in improving the mental health of high-risk mothers and related outcomes of parent-child relationships. However, the sample sizes of these studies are relatively small, and they mainly target specific high-risk groups. The long-term effects and generalizability of these interventions remain to be determined.

8. Barriers and Challenges to the Implementation of Trauma-Informed Perinatal Interventions in the Public Health System

8.1 Health service providers and resource allocation

The inadequate trauma-informed professional preparedness of frontline maternal and child health (MCH) personnel and clinical perinatal healthcare staff constitutes the foremost barrier. Most public health nurses and midwives have not received systematic trauma-informed care (TIC) training and lack proficiency in core skills such as trauma recognition and nonjudgmental communication, making it difficult for them to translate theory into population-level health practice [38]. Meanwhile, MCH clinics in China are universally characterized by heavy caseloads and strained health human resources; the limited time available for service delivery is insufficient to support trauma screening and individualized visits, and healthcare workers, preoccupied for the most part with routine monitoring of basic physiological indicators, lack the energy required to deliver psychological trauma prevention interventions [39]. Furthermore, as frontline service providers, sustained exposure to the traumatic experiences of pregnant and postpartum women renders staff susceptible to vicarious trauma and occupational burnout, and such occupational health risks further erode the willingness and capacity of the healthcare workforce to provide high-quality psychological care [40].

8.2 Target populations and the sociocultural environment

Under the influence of social prejudice and stigma, most perinatal women conceal their adverse childhood experiences (ACEs) or birth trauma, fearing that they will be labeled or subjected to excessive intervention, or even dreading the involvement of social welfare agencies; this substantially increases the difficulty of population-level epidemiological trauma screening [41]. Against the backdrop of traditional childbearing norms such as the expectation that "a mother should be strong," social pressures compel parturient to suppress negative experiences, with the result that the true population-level incidence of psychological trauma is seriously underestimated [42]. Even in routine public health screening, underreporting and perfunctory responses are common, compromising the accuracy of data used for population-level interventions. In addition, some pregnant and postpartum women have limited health literacy and insufficient awareness of the harms of psychological trauma, prioritizing physical health while neglecting psychological well-being; they consequently fail to make full use of available maternal psychological support resources, which undermines both compliance with and the effectiveness of grassroots public health interventions [43].

8.3 The health service system and cross-sector collaboration

Sociocultural backgrounds profoundly shape populations' health perceptions and decision-making. Within the Chinese family structure, family-based decision-making occupies a dominant position in perinatal care, which to some extent clashes with the TIC principle emphasizing women's autonomous decision-making and poses a challenge to the development of localized care models [44]. At the macro level, society lacks widespread health education and public awareness initiatives addressing perinatal psychological trauma, and an inclusive supportive environment has yet to take shape [45]. More critically, fragmentation exists in the cross-sector collaboration mechanisms of the existing MCH network. Research indicates that even after primary healthcare settings identify perinatal women at risk for psychological trauma, they may still face challenges such as insufficient specialized mental health resources, incomplete referral pathways, and poor interprofessional collaboration, which hinder these women from receiving timely and continuous mental health services [46]. This state of "screening without intervention" not only runs counter to the ethical principles of public health but may also precipitate medical trauma and erode public trust in the healthcare system.

9. Strategies and Recommendations for Building a Trauma-Informed Perinatal System from a Public Health Perspective

9.1 Embedding TIC in the national MCH policy framework and systematically building workforce competence

Trauma-informed care calls for a fundamental transformation of organizational culture and systemic paradigms—from focusing on "what is wrong with this person" to exploring "what this person has experienced" [47]. Public health policymakers in China should draw on this philosophy, integrating TIC into national and local Maternal Healthcare Work Standards so that it becomes a key indicator for evaluating the quality of maternal and child public health services. In terms of workforce development, dedicated TIC modules should be incorporated into higher education in public health and nursing and into the continuing medical education system [48]. Scenario-based simulation and comparable methods should be employed not only to strengthen the trauma screening and public health intervention competence of frontline healthcare workers but also, from the standpoint of occupational health protection, to establish and improve psychological support and self-care mechanisms for MCH personnel, thereby alleviating vicarious trauma and safeguarding both the stability of the public health workforce and the sustainability of interventions [49].

9.2 Implementing the Universal Precautions strategy and developing humanistic care pathways adapted to the local sociocultural context

Given that trauma-informed perinatal intervention in China remains at an early stage, there is an urgent need to develop standardized population-level screening and preventive intervention pathways grounded in national conditions. Public health practice can comprehensively draw on the principle of Universal Precautions as a primary prevention strategy, implementing privacy protection, informed consent, and ongoing empowerment for all women without distinction in routine MCH care [18], so as to reduce population-level risk of medical trauma. Studies have shown that respecting women's right to choose not only enhances their sense of safety but also significantly improves compliance with health interventions at the population level [50]. Where invasive medical procedures are concerned, restoring control to pregnant and postpartum women is the central public health measure for preventing secondary trauma [51]. Going forward, public health and nursing researchers should take full account of Chinese family ethics and regional cultural differences and, jointly with health administrative authorities and psychological intervention specialists, formulate clinical and community public health practice pathways characterized by high accessibility and equity.

9.3 Integrating community health resources to build a "screening–intervention–referral" multidisciplinary service network across the life course

Specialist nursing alone cannot meet the population's extensive mental health needs. China should build on the National Basic Public Health Service Program to establish a coordinated multidisciplinary network spanning the full life course from preconception through pregnancy to the postpartum period. Drawing on advanced international experience [14], disciplinary and institutional silos should be dismantled to form a coordinated partnership comprising MCH physicians, public health nurses, psychiatrists, and community social workers. Within this network, obstetric departments are responsible for ensuring physical safety; public health and community nurses lead population-level trauma screening and basic psychological counseling; and psychiatric specialty services provide referral-based treatment for moderate-to-severe trauma. In addition, TIC assessment should be formally incorporated into routine community postpartum visits, and dedicated health records should be established for high-risk groups. Meanwhile, the strengths of Digital Public Health should be fully exploited: mobile health platforms can enable dynamic monitoring of population psychological status, health education, and remote triage, ultimately shaping an integrated "hospital–community–family" closed-loop health management system that interrupts the intergenerational transmission of trauma at the systemic level and enhances the quality of China's birth population.

10. Conclusion

As a systematic framework for care practice, trauma-informed care offers a new perspective for improving the psychological outcomes of perinatal women and preventing iatrogenic trauma. A growing body of international work has already developed TIC-based perinatal programs and established trauma screening and support services for women; nevertheless, the uptake of perinatal TIC remains uneven across the world, with evidence concentrated largely in high-income countries, whereas numerous low- and middle-income settings remain at an early developmental stage, and locally adapted screening and intervention protocols—formulated with reference to international and national expert guidelines and consensus statements—

are still needed to extend support to a broader population of perinatal women. Although the integration of TIC into obstetric practice continues to encounter challenges, including inadequate provider awareness, limited social support, and unequal resource allocation, these can be addressed through three mutually reinforcing pathways: scaling up TIC training across the maternal and child health workforce, rigorously implementing the Universal Precautions principle as a primary prevention strategy, and constructing interdisciplinary continuous-care networks that link screening, intervention, and referral across the preconception, antenatal, intrapartum, and postpartum continuum. From a public health and preventive medicine perspective, these efforts should proceed through global collaboration that harmonizes measurement standards, accumulates cross-cultural evidence across diverse health systems, and supports culturally adapted, resource-appropriate implementation in low- and middle-income countries. By recognizing psychological safety and freedom from avoidable trauma as foundational conditions of maternal health, healthcare systems, communities, and policymakers worldwide can work together to reduce the global burden of perinatal psychological trauma and its intergenerational consequences, advance equity in maternal mental health, and safeguard the health and development of women, children, and families across the life course.

CRediT authorship contribution statement

Yating Liu: Writing – original draft, Methodology, Formal analysis. Jiabei Lu: Writing – review & editing, Conceptualization. Yuexian Tao: Writing – review & editing, Methodology, Conceptualization.

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Declaration of competing interest

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