

Operationalizing Trauma-Informed Principles in Postpartum Cohort Research: Development and Implementation of a Data Collection Framework

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Short Report

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Abstract

Purpose

This article addresses the gap in trauma-informed data collection within perinatal research.

Methods

We developed a trauma-informed data collection framework within an urban postpartum cohort study.

Results

The framework operationalizes psychological safety, addresses power imbalances, and supports participant autonomy during data collection.

Conclusion

By utilizing clinical insights, this Framework provides a systematic approach to sensitive data collection. It is designed to support the safety of both research participants and personnel while optimizing overall data quality.

Clinical trial number: not applicable

ARTICLE HIGHLIGHTS

Advances trauma-informed methods for quantitative data collection with vulnerable populations.

Translates broad trauma-informed principles into highly structured, concrete data collection practices.

Flexible, participant-centered procedures can reduce participant distress and actively support research engagement.

Provides a practical framework to operationalize trauma-informed theory in maternal health research.

Introduction

Despite allocating substantially higher resources to healthcare, the United States continues to demonstrate an elevated maternal mortality rate that significantly exceeds that of comparable high-income nations (Declercq and Thoma 2023; Gunja et al. 2024). The escalating maternal mortality crisis has resulted in unprecedented federal investment and funding for maternal health research. In response, the National Institutes of Health (NIH) launched the IMPROVE Initiative, funding over \$142 million in research to reduce preventable maternal deaths and optimize perinatal healthcare (Black Maternal Health Caucus 2026).

Conducting clinical maternal health research requires a heightened sense of sensitivity and safety, as the perinatal period can reactivate and exacerbate psychological distress and symptoms among women with histories of trauma, including physical and sexual abuse. The risk is pervasive, with up to 35% of pregnant women reporting a have a history of childhood abuse or neglect, with these rates escalating dramatically among disadvantaged and marginalized populations (Garon-Bissonnette et al. 2022). Perinatal mental health challenges also represent a highly prevalent and deeply sensitive reality for many women, necessitating compassionate, non-stigmatizing research protocols. When research protocols fail to account for the impact of such sensitive topics, they risk compounding existing vulnerabilities, such as exacerbation of mental health and trauma responses and an elevated risk for intimate partner violence, which can trigger reactions that compromise both participant safety and data integrity (Jefferson et al. 2021).

A trauma-informed research paradigm fundamentally improves methodological integrity across the entire research lifecycle, from recruitment, data validity and the prevention of attrition (Edelman 2023). Implementing a trauma-informed research paradigm is vital for perinatal women from marginalized populations, who remain systematically underrepresented in clinical and public health research. Maternal mortality differentially impacts communities based on race, socioeconomic status, and geography (Gunja et al. 2024), thus, it is critical that researchers consider a history of trauma when implementing clinical research. Further, a trauma-responsive methodology may also extend protection to the research team, who are frequently vulnerable to secondary traumatic stress and vicarious trauma when collecting sensitive and emotionally taxing perinatal disclosures, information, and histories (Williamson et al. 2020).

While trauma-informed care is a well-established best practice in clinical maternal health, an implementation gap persists within trauma-informed perinatal empirical research methodologies. The scant literature that does exist predominantly focuses on qualitative methodologies, leaving limited operational guidance for applying trauma-informed principles to quantitative data collection (Jefferson et al. 2021). To address this gap, this article describes the development and implementation of a novel trauma-informed data collection framework for maternal health research, details its core ethical and operational strategies, provides a case study of an NIH-funded postpartum study, and discusses its implications for participant safety and data integrity.

METHODS

Cohort Study Overview

A University, funded by an NIH-funded Maternal Health Research Center of Excellence, is conducting a clinical study (Glassgow 2026; Glassgow et al. 2026). This prospective five-year clinical study utilizes an explanatory sequential mixed-methods design and will enroll 200 urban postpartum women receiving care in a large urban city. Many of the postpartum women have chronic environmental stressors, such as poverty, violence, and high cumulative trauma. The aim of the study is to examine and map how socio-

ecological stress is biologically embedded in urban postpartum women through multi-omics profiling and spatial mediation modeling. During data collection, the research team administers a 133-question survey (e.g., measures mental health, adversity/trauma, and health) and collects biological samples (i.e., blood and urine).

Development of the XXX Trauma-Informed Data Collection Framework

Trauma-informed care principles are increasingly embedded across healthcare and research settings. The Substance Abuse and Mental Health Services Administration (SAMHSA) framework identifies six key principles of a trauma-informed approach: safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice, and choice; and cultural, historical, and gender responsiveness (Substance Abuse and Mental Health Services Administration 2014). Similarly, Edelman (2023) proposed the Trauma and Resilience Informed Research Principles and Practice (TRIRPP) framework, which emphasizes inclusive study design, participant autonomy, minimization of research-related distress, and collaborative approaches to knowledge generation. Together, these models provided the conceptual foundation for the XXX Framework.

Building upon these established frameworks, the research team adapted trauma-informed principles to the specific context of postpartum mental health research. Attention was given to creating psychologically safe research environments, fostering trust and transparency throughout study participation, supporting participant autonomy, reducing power differentials between researchers and participants, and promoting reflexive research practices. The resulting XXX Framework guided the development and implementation of specific trauma-informed data collection procedures described in Table 1.

The research team developed the XXX Trauma-Informed Data Collection Framework to translate established trauma-informed principles into concrete interviewer behaviors and quantitative research procedures. Framework development was informed by trauma-informed care literature and the team's clinical experience in perinatal mental health. In collaboration with perinatal social workers (Glassgow et al. 2023), the research team conducted mock interviews to test survey administration, refine protocol guidelines, and practice empathetic, nonjudgmental responses to sensitive disclosures. Beyond procedural execution, the training emphasized continuous researcher reflexivity, encouraging data collectors to examine personal positionality and emotional triggers. Structured peer debriefing and ongoing supervision is embedded throughout data collection to support protocol fidelity across interviewers and reduce the risk of secondary traumatic stress among team members.

RESULTS

The XXX Trauma-Informed Data Collection Framework comprises six core principles: Safety, Trustworthiness and Transparency, Collaboration and Mutuality, Empowerment, Voice and Choice (Table 1). For each principle, the Framework defines key research objectives and applications in perinatal mental health to foster psychological safety, address power imbalances, and support participant

autonomy. Table 2 operationalizes these principles into concrete interviewer behaviors, implementation strategies, and intended outcomes. Key practices include curating sensory-friendly interview spaces (e.g., soft lighting, sensory tools), employing active listening and neutral communication, distinguishing participant fatigue from emotional distress during check-ins, offering participant-centered flexibility (e.g., childcare support, nonjudgmental rescheduling), and reinforcing ongoing consent with explicit opt-out mechanics. Collectively, these operational strategies are intended to minimize the risk of retraumatization, reduce participant anxiety, build trust, and support data integrity.

DISCUSSION

While trauma-informed principles are increasingly recognized as important within healthcare and research settings, existing frameworks often focus on broad conceptual guidance rather than the practical implementation of trauma-informed approaches during study procedures. The XXX Trauma-Informed Data Collection Framework fills this gap by translating foundational principles such as safety, trustworthiness, collaboration, and empowerment into specific interviewer behaviors and research procedures that can be consistently applied in postpartum research settings. By providing explicit examples of operationalization, this Framework offers a practical approach for integrating trauma-informed principles into data collection activities.

When perinatal women participate in research that lacks a trauma-informed paradigm, they can face psychological, physical, and systemic risks. Notably, insensitive protocols can trigger retraumatization, psychological distress, such as experiencing strong emotions of panic, shame, and anguish, and medical anxiety during a window of profound biological vulnerability. Maternal health research is often conducted in clinical settings, such as exam rooms, clinics, and hospitals. The research space itself can trigger women with histories of birth trauma or medical complications, while simultaneously inducing feelings of institutional objectification (Sperlich et al. 2017). Furthermore, insensitive or non-confidential data collection can escalate risks of partner retaliation (i.e., intimate partner violence), heighten fears of surveillance or involvement with child protective services, and ultimately drive vulnerable women to entirely disengage from essential healthcare (Jefferson et al. 2021).

This article has several limitations. First, the Framework was developed and implemented within a single postpartum cohort study at one urban academic institution, which may limit its generalizability to other maternal health research settings and populations. Second, this article describes the development and implementation of the framework but does not formally evaluate its effectiveness on participant outcomes, data quality, recruitment, or retention.

In summary, the XXX Trauma-Informed Data Collection Framework bridges the gap between trauma-informed theory and quantitative research implementation by establishing a reproducible set of practices tailored to postpartum mental health research. Grounded in clinical expertise, this Framework offers researchers a structured approach to conducting sensitive data collection with the goal of supporting participant well-being, protecting research staff, and promoting data integrity. Although

developed within an urban postpartum cohort, this Framework is adaptable to broader research contexts involving trauma exposure or vulnerable populations. Future research should formally evaluate its impact on study retention, data quality, and both participant and interviewer outcomes across diverse research settings.

Table 1
Guiding Principles of the XXX Trauma-Informed Data Collection Framework.

Trauma-Informed Principle	Framework Definition in Research Context	Key Research Objectives	Perinatal Mental Health Research Application
Safety	Create conditions that promote participants' physical, emotional, and psychological well-being throughout the research process.	Anticipate and minimize distress; foster a sense of security during participation.	Recognizes that discussions of pregnancy, childbirth, mental health, loss, or trauma may evoke emotional responses requiring supportive and responsive research practices.
Trustworthiness & Transparency	Ensure research processes, expectations, risks, and participant rights are communicated openly and consistently.	Build trust between researchers and participants; reduce uncertainty and perceived power imbalances.	Supports engagement among participants who may have experienced invalidation, stigma, or difficult healthcare encounters during the perinatal period.
Collaboration & Mutuality	Position participants as active contributors rather than passive subjects, emphasizing shared decision-making where possible.	Foster respectful, participant-centered interactions; acknowledge participants' expertise in their own experiences.	Aligns with person-centered approaches commonly used in perinatal care and mental health services.
Empowerment, Voice, & Choice	Promote participant autonomy and support individuals' ability to make informed decisions about engagement.	Maximize participant agency, control, and comfort throughout study participation.	Particularly important in perinatal populations whose experiences may involve medical, social, or systemic loss of control.
Reflexivity	Encourage ongoing awareness of how researchers' assumptions, professional identities, experiences, and power may influence the research process.	Promote ethical engagement, reduce bias, and improve responsiveness to participant needs.	Clinical expertise in perinatal mental health informs participant support while reflexive practices help maintain rigor and minimize unintended influence on data collection.

Table 2
Operationalization of the XXX Trauma-Informed Data Collection Framework.

Trauma-Informed Principle	Data Collection Practice	Operationalization	Intended Impact
Physical & Psychological Safety	Curated environment	Use of soft lighting, comfortable seating, sensory tools (fidget items), and refreshments to create a welcoming space	Intended to reduce anxiety, increase sense of safety, support participant engagement—especially important for postpartum participants and those with trauma histories
	Neutral, non-assumptive demeanor	Awareness of facial expressions and tone; maintaining neutrality and avoiding assumptions during sensitive disclosures	Aims to reduce participant discomfort or shame; minimizes risk of reinforcing stigma or bias
	Check-in process during data collection	Interviewers monitor participant fatigue vs distress (e.g., dissociation) and adjust pacing or pause as needed	May reduce emotional overwhelm; supports participant well-being during sensitive questioning
	Distinguishing fatigue vs triggers	Interviewers trained to recognize emotional vs physical cues and respond appropriately	Supports trauma awareness and may reduce misinterpretation of participant responses
Trustworthiness & Transparency	Active listening & validation	Interviewers listen attentively, validate responses, and avoid dismissive or judgmental reactions	Aims to build trust, affirms participant experiences, and reduces perceived power imbalances
	Transparent withdrawal process	Clear explanation during consent that participants can withdraw and have identifiable data removed within a defined timeframe	Support trust and informed decision-making; may reduce fear of loss of control over data
	Interviewer reflexivity	Awareness of own reactions, biases, and positionality during interactions	Helps minimize the influence of bias on research interactions; promotes equitable engagement
Collaboration & Mutuality	Ongoing consent reminders	Reinforcing voluntary participation throughout the visit, not just at initial consent	Moves consent from a one-time event to an ongoing process, aligning with trauma-informed principles

Trauma-Informed Principle	Data Collection Practice	Operationalization	Intended Impact
	Flexible pacing of interview	Slowing down, pausing, or adapting flow based on participant needs	Aims to reduce burden and allows participants to engage at their comfort level
Empowerment, Voice, & Choice	Participant-centered flexibility & accessibility	Flexible scheduling based on participant availability; nonjudgmental approach to tardiness/rescheduling; allowing participants to bring children; offering optional support for childcare during visits	Aims to reduce structural barriers to participation, increase accessibility for postpartum participants, reinforce autonomy, and promote equitable engagement
	Opt-out mechanics (skip questions)	Participants are repeatedly reminded they may skip any question at any time	Reinforces participant control, and is intended to reduce coercion, and retraumatization risk

Declarations

Author Contribution

A.E.G: Conceptualization, Funding acquisition, Methodology, Writing-original draft, Writing-review & editing
A. A. G. G.: Conceptualization, Project administration, Writing-original draft, Methodology, Writing-review & editing
R.C.: Funding acquisition, Writing-review & editing
M. K.: Writing-original draft, Writing-review & editing
C. F.: Conceptualization, Project administration, Writing-original draft, Methodology, Writing-review & editing

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