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Anxiety and Depressive Symptoms During Pregnancy, Perceived Control and Posttraumatic Stress Symptoms After Childbirth: A Review Article

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Abstract

Psychological birth trauma and childbirth-related posttraumatic stress disorder (CB-PTSD) affect a substantial number of mothers worldwide annually, representing a significant burden of disease. This review synthesizes current evidence on the relationships between antenatal anxiety and depressive symptoms, perceived control during childbirth, and postpartum posttraumatic stress symptoms. A growing body of longitudinal research indicates that antenatal mood disorders serve as significant risk factors for CB-PTSD, with perceived control during labor and delivery functioning as a key mediating and moderating variable. Evidence from systematic reviews demonstrates that brief trauma-focused psychological therapies delivered in the early postpartum period show moderate to large effects in reducing CB-PTSD symptoms. Furthermore, multi-component antenatal interventions, including cognitive behavioral therapy and psychoeducation, may be effective in preventing psychological birth trauma, particularly among women with histories of traumatic life events. This review examines the prevalence, risk factors, and underlying mechanisms linking antenatal psychological distress to postpartum traumatic stress, with particular emphasis on the protective role of perceived control. Clinical implications and recommendations for screening and intervention are discussed.

Keywords: childbirth-related posttraumatic stress disorder, antenatal anxiety, perinatal depression, perceived control, traumatic birth, prevention

1. Introduction

Childbirth is typically regarded as a positive life event; however, for a substantial minority of women, it constitutes a traumatic experience that can precipitate posttraumatic stress disorder (PTSD). Psychological birth trauma and childbirth-related PTSD affect millions of mothers globally each year, with additional impacts on fathers and co-parents[1]. Prevalence estimates indicate that negative or traumatic birth experiences affect as many as 50% of women, while clinically significant CB-PTSD develops in approximately 4-6% of community samples, with substantially higher rates in high-risk populations[2].

The recognition of CB-PTSD as a distinct clinical entity has grown considerably over the past two decades. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) acknowledges childbirth as a potential criterion A traumatic event, particularly in cases involving perceived or

actual threat of serious injury or death to mother or infant, emergency obstetric interventions, or experiences of powerlessness and dissociation[3]. Importantly, research consistently demonstrates that the subjective experience of birth—including perceptions of control, support, and dignity—is a more powerful predictor of subsequent PTSD symptoms than objective obstetric severity[4].

Understanding the antecedents of CB-PTSD is essential for developing effective prevention strategies. Among the most well-established risk factors are antenatal anxiety and depressive symptoms, which have been identified as significant predictors of postpartum traumatic stress responses[5]. The concept of perceived control—the belief that one can influence events and outcomes during labor and delivery—has emerged as a critical protective factor that may explain, at least in part, why some women with antenatal distress develop CB-PTSD while others do not[6].

This review aims to: (1) synthesize current evidence on the relationship between antenatal anxiety and depressive symptoms and postpartum posttraumatic stress symptoms; (2) examine the role of perceived control as a mediator and moderator of this relationship; (3) evaluate the effectiveness of antenatal and intrapartum interventions designed to prevent CB-PTSD; and (4) provide clinical recommendations for screening and intervention.

2. Methods

This narrative review synthesizes evidence from systematic reviews, meta-analyses, and primary research studies identified through searches of MEDLINE, PsycINFO, Embase, CINAHL, and the Cochrane Library. Priority was given to studies published between 2018 and 2025, with inclusion of landmark older studies where relevant. Search terms included combinations of: "posttraumatic stress disorder," "childbirth," "perinatal," "pregnancy," "anxiety," "depression," "perceived control," and "prevention.

3. Prevalence and Clinical Significance of Childbirth-Related PTSD

3.1. Global Burden

The global burden of CB-PTSD is substantial. Recent epidemiological estimates indicate that approximately 6.6 million mothers develop CB-PTSD annually, representing a significant public health concern with economic implications extending into billions of dollars globally[7]. Prevalence rates vary considerably based on sample characteristics and assessment methods. A comprehensive meta-analysis reported that approximately 4% of women in community samples meet full diagnostic criteria for CB-PTSD, with an additional 18-20% experiencing subthreshold symptoms[2].

3.2. High-Risk Populations

Substantially higher prevalence rates are observed in high-risk populations. Women who experience preterm birth, stillbirth, preeclampsia, or severe maternal morbidity have CB-PTSD rates ranging from 15-40%[8]. Similarly, women with histories of interpersonal violence, childhood maltreatment, or prior traumatic experiences are at markedly elevated risk. Research has demonstrated that women reporting four or more adverse childhood experiences were almost four times more likely to endorse perinatal trauma compared to those without such histories[9]. The severity of perinatal PTSD symptoms was significantly higher among women exposed to childhood abuse[9].

3.3. Consequences of Untreated CB-PTSD

Untreated CB-PTSD has profound and enduring consequences extending beyond the affected mother. Research demonstrates associations with impaired mother-infant bonding, reduced breastfeeding duration and exclusivity, disrupted maternal sensitivity, and adverse child developmental outcomes including emotional and behavioral problems[10]. Furthermore, CB-PTSD frequently co-occurs with postpartum depression and anxiety, creating complex comorbidity patterns that complicate treatment and worsen prognoses[5].

4. Antenatal Risk Factors: Anxiety and Depressive Symptoms

4.1. Evidence from Longitudinal Studies

A robust body of longitudinal evidence establishes antenatal anxiety and depressive symptoms as significant independent risk factors for CB-PTSD. A seminal longitudinal mediation analysis demonstrated that anxiety and depressive symptoms during pregnancy directly predict posttraumatic stress symptoms after childbirth, with perceived control serving as a significant mediator of this relationship[6]. This finding has been replicated across diverse cultural and clinical settings, including recent studies in Asian populations[11].

A recent longitudinal study of 359 women in their third trimester found that pregnancy-related PTSD symptoms during the antenatal period were the strongest predictor of both short-term (4-6 weeks postpartum) and long-term (14-18 weeks postpartum) PTSD symptoms, with odds ratios of 1.04 and 1.09 respectively[11]. Notably, this study also identified prenatal resilience as a paradoxical risk factor—suggesting that women with high resilience may nonetheless develop postpartum PTSD when exposed to significant traumatic stressors[11].

4.2. Mechanisms and Pathways

Several mechanisms explain the link between antenatal distress and postpartum PTSD. First, women with elevated anxiety and depressive symptoms during pregnancy may enter labor with heightened arousal and negative cognitive appraisals, predisposing them to perceive birth events as more threatening and less controllable[6]. Second, antenatal mood disorders may be associated with altered stress physiology, including dysregulated hypothalamic-pituitary-adrenal axis functioning, which amplifies peritraumatic distress and dissociation during childbirth[12]. Third, pre-existing psychological vulnerability may increase the likelihood of developing post-event rumination and maladaptive coping strategies that maintain and exacerbate traumatic stress symptoms[5].

4.3. Fear of Childbirth as a Specific Risk Factor

Fear of childbirth (tokophobia) represents a specific manifestation of antenatal distress that warrants particular attention. Women with severe fear of childbirth are at significantly elevated risk for both emergency cesarean section and subsequent CB-PTSD[13]. Research has found that trait anxiety and fear of childbirth interact with unplanned delivery modes to enhance CB-PTSD risk[13]. This suggests that the combination of antenatal psychological vulnerability and obstetric interventions that reduce perceived control may be particularly pathogenic.

5. The Protective Role of Perceived Control

5.1. Defining Perceived Control in the Childbirth Context

Perceived control during childbirth refers to a woman's belief that she can influence the processes, events, and outcomes of labor and delivery. This multidimensional construct encompasses control over pain management, decision-making, body positioning, medical interventions, and the overall birth environment[6]. Perceived control is distinct from actual control; women may feel highly controlled even in the absence of objective obstetric complications, and conversely, may feel a sense of mastery despite significant medical interventions[14].

5.2. Evidence for Mediating and Moderating Effects

The longitudinal mediation analysis by Brandão et al. provided foundational evidence that perceived control mediates the relationship between antenatal anxiety/depression and postpartum PTSD symptoms[6]. In this model, antenatal distress erodes women's sense of personal control during labor, which in turn predicts greater traumatic stress responses. This mediation pathway has important clinical implications: interventions that enhance perceived control may interrupt the chain of risk linking antenatal mood disorders to CB-PTSD.

Supporting evidence comes from studies of birth planning interventions. A systematic review of antenatal interventions for childbirth trauma found that birth plans were associated with increased positive childbirth experience, childbirth control, mastery, participation, self-efficacy, and reduced PTSD symptoms[15]. These effects were most pronounced when birth plans were developed collaboratively between women and maternity care providers and when they included contingency planning for unexpected obstetric events[15].

5.3. Intrapartum Factors Influencing Perceived Control

Several intrapartum factors influence perceived control, many of which are modifiable through healthcare system interventions. Continuous intrapartum supportive care—including one-to-one midwifery support, presence of doulas, and continuity of carer models—has been associated with enhanced perceived control and reduced CB-PTSD risk[14]. Conversely, experiences of disrespectful care, lack of information provision, exclusion from decision-making, and perceived coercion regarding interventions significantly reduce perceived control and increase PTSD risk, independent of objective birth outcomes[14].

6. Prevention and Intervention Strategies

6.1. Primary Prevention: Antenatal Interventions

Primary prevention aims to prevent traumatic childbirth experiences and CB-PTSD from occurring by reducing or eliminating risk factors before labor begins[16]. Evidence for primary prevention remains limited but growing. A systematic review identified only three trials evaluating primary prevention during pregnancy, with insufficient empirical evidence to draw firm conclusions[16].

However, promising approaches have been identified. A mixed-methods systematic review found that multi-component interventions delivered in the antenatal period—including psychological and psycho-educational interventions, cognitive behavioral therapy, antenatal education, and continuous intrapartum supportive care—may be effective in preventing or reducing psychological trauma post-childbirth, particularly for women with histories of traumatic life events[15]. The most effective interventions combined antenatal preparation with enhanced intrapartum support, suggesting that multi-component approaches are superior to single-element interventions[15].

6.2. Secondary Prevention: Early Postpartum Intervention

Secondary prevention identifies women who have had a traumatic childbirth experience and intervenes to prevent the development of full-syndrome PTSD[16]. This approach has received the strongest empirical support. A meta-analysis of randomized secondary prevention trials found moderate effects in reducing CB-PTSD symptoms compared to usual treatment (standardized mean difference, -0.67; 95% confidence interval, -0.92 to -0.42) [16].

Single-session therapy delivered within 96 hours of birth was helpful (standardized mean difference, -0.55). Brief, structured, trauma-focused therapies and semi-structured, midwife-led, dialogue-based psychological counseling showed the largest effects (standardized mean differences of -0.95 and -0.91, respectively) [16]. These findings suggest that the immediate postpartum period represents a critical window for intervention, during which brief psychological support can buffer the development of chronic PTSD.

6.3. Nonpharmacologic Treatments

A comprehensive systematic review evaluated nonpharmacologic treatments for perinatal mental health conditions, identifying 103 randomized controlled trials[1]. For perinatal depressive disorders, cognitive behavioral therapy (CBT) was probably more effective than treatment as usual to reduce both depressive symptoms (moderate strength of evidence) and anxiety symptoms (moderate strength of evidence)[1]. Interpersonal therapy (IPT) was probably more effective than treatment as usual for depressive symptoms[1].

However, evidence specifically for CB-PTSD was more limited. For PTSD, only four RCTs were identified, with heterogeneity in interventions and insufficient reporting of key outcome data precluding firm conclusions[1]. This evidence gap highlights the need for further research on nonpharmacologic treatments specifically targeting CB-PTSD.

6.4. Trauma-Informed Care

Trauma-informed care represents a system-level approach that recognizes the prevalence and impact of trauma and integrates this knowledge into all aspects of service delivery[17]. In maternity care, trauma-informed approaches include routine screening for trauma history, avoiding re-traumatization through respectful care practices, providing clear communication and informed consent for procedures, and offering choice and control where possible[17].

Researchers argue that awareness of maternal exposure to childhood adversity is critical to providing trauma-informed care in the perinatal setting, and routine screening for adverse childhood experiences in pregnancy adds clinical value[9]. Implementation of trauma-informed care principles may reduce CB-PTSD risk without requiring specialized mental health resources, making this approach scalable across diverse healthcare settings[18].

7. Clinical and Research Implications

7.1. Screening Recommendations

Current evidence supports routine screening for CB-PTSD risk factors during pregnancy. Experts recommend screening for antenatal depression, anxiety, fear of childbirth, history of trauma or sexual abuse, and poor health or pregnancy complications[7]. However, they acknowledge gaps in evidence regarding how, when, and whom to screen, and CB-PTSD remains largely unrecognized in routine maternity services[7].

The high prevalence of short-term (32.7%) and long-term (19.9%) postpartum PTSD identified in recent longitudinal research underscores the need for systematic screening and intervention[11]. Pragmatic screening approaches could include brief self-report measures administered at antenatal booking appointments and again in the early postpartum period.

7.2. Integration with Existing Services

Integration of CB-PTSD prevention and treatment into existing perinatal mental health pathways is essential for sustainability. The strongest evidence supports CBT and IPT for perinatal depressive disorders[1], and these same therapeutic approaches may be adapted for CB-PTSD. However, specialized trauma-focused therapies, including eye movement desensitization and reprocessing, have shown promise and warrant further evaluation[18].

7.3. Future Research Directions

Several research priorities emerge from this review. First, large-scale randomized controlled trials of primary prevention interventions delivered during pregnancy are urgently needed, as current evidence is insufficient[16]. Second, research should evaluate the comparative effectiveness of different nonpharmacologic treatments specifically for CB-PTSD, as existing evidence is limited[1]. Third, studies should include diverse populations, including women from low- and middle-income countries, same-sex couples, and single parents by choice, as most research has focused on white, middle-class, heterosexual samples[18]. Fourth, integration of diagnostic and biological measures can inform treatment mechanisms and optimize intervention targeting[12].

8. Conclusion

Anxiety and depressive symptoms during pregnancy represent significant, modifiable risk factors for posttraumatic stress symptoms after childbirth. Perceived control during labor and delivery mediates this relationship, suggesting that interventions enhancing women's sense of control may interrupt the pathway from antenatal distress to CB-PTSD. Evidence supports the effectiveness of brief trauma-focused psychological therapies delivered early in the postpartum period for secondary prevention, while evidence for primary prevention during pregnancy remains limited but promising.

The substantial global burden of CB-PTSD—affecting millions of families annually—demands urgent policy and practice responses. Implementation of routine risk factor screening, trauma-informed care principles, and evidence-based psychological interventions within maternity services could alleviate considerable suffering in affected families. Future research should prioritize the development and evaluation of primary prevention interventions, inclusion of diverse populations, and integration of biological measures to optimize prevention and treatment strategies.

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