Alissa Fox

Co-Morbid Ripple Effect: Systems Approach to Childbirth PTSD and Postpartum Depression

Background

Self-harm is responsible for 20% of maternal deaths in the United States, a statistic that is rising and strongly associated with mental health concerns (CDC, 2022). The co-occurrence of childbirth-related PTSD (CB PTSD) and major depressive disorder (MDD) significantly elevates the risk of suicidality among affected individuals (Flory & Yehuda, 2015). Untreated perinatal mental health disorders carry substantial financial costs, estimated at $14 billion nationally in 2017 (Donegan et al., 2025). While perinatal depression is well recognized (Beck, 2025), the clinical complexity of co-occurring disorders like PPD and CB PTSD is less widely understood and may require more nuanced approaches beyond current screening practices. Co-occurrence can be explained by symptom overlap or the possibility of a distinct trauma-related phenotype, supported by unique biological markers (Flory & Yehuda, 2015; Pariante & Miller, 2001; Yehuda, 2009).

Purpose

This framework combines Beck's Ever-Widening Ripple Effect (Beck, 2015) with a multilevel nested systems approach (Humphrey & LeBreton, 2019) to explain co-morbid factors of postpartum depression and CB PTSD. It offers researchers a map for integrating complexity and multilevel concepts to improve hypothesis creation and contextualizing research.

Description

The model is a figure which depicts a stone disrupting the patterns of the water as birth trauma disrupts individual patterns of functioning, producing concentric ripples that manifest as PTSD symptoms: diminished self-confidence, breastfeeding challenges, reduced trust in healthcare, and relational strain. A boulder is used to represent the presence of postpartum depression occurring alongside trauma. When trauma ripples interact with the depression boulder, they reflect and refract, altering the patterns and changing the form of the trauma response. I postulate just as each stone effects the pattern of ripples in the once still water, each mental health challenge adds complexity to the patterns of functioning. The model explicitly includes partner, infant, and provider influences, acknowledging bidirectional impacts within the infant–mother dyad and family unit.

Logic

By delineating feedback loops at the individual, dyadic/family, provider, organizational, and policy levels, the model systematically connects underlying mechanisms to guide research toward practical, actionable solutions. Social norms influence dyadic and family unity interactions, provider practices are contextualized within organizational structures and national policies, and temporal dimensions are emphasized to accurately represent the progression and variation of symptoms over time.

Conclusion

The integrative model provides a framework to investigate the complexity trauma-driven morbidity. Identifying multilevel targets (dyad, provider, organization, and policy) allows for focused contextual research and offers a theory-driven scaffold that elevate how contextual forces moderate outcomes. This framework supports hypothesis generation, informs methodology and guides trauma-informed, family-centered, and systems-aware research agendas to aid in supporting a mother's ability to cope with disruptions in functional patterning.