Prenatal Trauma History in Parents and Parent-Infant Sleep in the Early Postpartum

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A signature outcome of post-traumatic stress disorder is sleep disruption (American Psychological Association, 2013), which can include insomnia, elevated wake bouts, and fragmented sleep during the night (Roche, 2022). It is unclear, however, whether trauma symptomatology, which is expected to impact parents' own sleep, impacts infant sleep, and if it does, what pathways account for it. There appears to be good reason to examine such relations, in light of ongoing work (e.g., Horwitz et al, 2023, and in our SIESTA lab) that parent and child sleep are closely intertwined.

The present study examined longitudinal associations between parental history of trauma, assessed prenatally, and infant sleep quality during the first three months postpartum. This study was part of a larger federally funded project (R01HD088566) that tested the efficacy of a transition-to-parenthood intervention designed to promote coparenting in infant-parent sleep contexts and, in turn, infant development. Analyses took into account quality of parent sleep, parent depressive symptoms, and household chaos, each of which are associated with trauma (Noll, 2016), as potential mediators. Trauma history in each parent was assessed during the 3rd trimester of pregnancy with the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013). Also assessed prenatally were parents' depressive symptoms (Beck Depression Inventory; Beck et al., 1961) and household chaos, using the Descriptive In-Home Survey of Chaos-Observer ReporteD (Whitesell et al., 2015). Infant and parent sleep were assessed across seven consecutive days at 1 and 3 months postpartum with Spectrum Plus actiwatches (Philips/Respironics, Murrysville, PA) and with the 24-Hour Sleep Patterns Interview (Meltzer et al., 2007).

Analyses revealed that mothers' and fathers' trauma symptoms predicted infant sleep problems (from examination of mean and variability of bedtimes, fall asleep times, and overall nighttime sleep minutes) but via different pathways. The impact of mothers' trauma on infant sleep was straightforward: Mothers' trauma appeared to disrupt mothers' own sleep and, in turn, infant sleep, and these paths were mediated by mothers' own depressive symptom levels and by household chaos. By contrast, whereas fathers' trauma also predicted infant sleep, the pathways toward that was primarily through linkages between fathers' trauma and **mothers'** well-being and sleep. For example, fathers' trauma history predicted mothers' (but not fathers') depressive symptoms, which in turn predicted mothers' sleep disruptions and, in turn, infant sleep disruptions. There were no instances of mothers' trauma history indirectly predicting infant sleep via fathers' sleep or fathers' depressive symptom levels. Interestingly, fathers' trauma only appeared to impact their own sleep via its impact on household chaos.

Reasons for the differential patterns of influence between mothers and fathers are complex, but one reason may be that trauma symptoms in men may be more difficult to cope with by their partners, and more negatively impactful, than trauma symptoms in women. Men suffering from trauma may be more likely to externalize, to engage in antisocial behavior, substance abuse, and self-destructive tendencies (Murphy et al., 2020). By contrast, women suffering from trauma may be more likely to internalize, to ruminate, and to mentally revisit the traumatic event (King et al., 2013; Ziotnick et al., 2001).

The role of trauma as a determinant of the quality of transition to parenthood is poorly understood and warrants closer scrutiny. In addition to the differential paths of influence of mother vs. father trauma history on infant sleep, the present study suggests that parents' trauma history may be an important moderator of interventions designed to promote parenting and family health.