**Proposed Title:** Adverse Experiences among Mothers with Opioid Use Disorder: Implications for Caregiving Behavior and Mother-Infant Bonding

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**Background:** The prevalence of opioid use disorder (**OUD**) among pregnant individuals in the United States has increased nearly 500% in the past 15 years (Haight, 2018). Women with OUD are estimated to be up to 11 times more likely to have experienced childhood maltreatment than individuals without a substance use disorder (Conroy et al., 2009), and mothers with OUD face compounding stressors including intimate partner violence and homelessness (Alexander, 2013). Chronic stress and the responsibility of caring for a vulnerable infant may place mothers with OUD at risk for less attuned caregiving and compromised mother-infant bonding during the postpartum “fourth trimester,” a unique sensitive period for mothers and infants (Tully et al., 2017). Attuned caregiving during the fourth trimester is essential for the development of the mother-infant attachment relationship and has significant implications for infant physiological, cognitive, and socioemotional development (Schore, 2021).

**Hypotheses:** In this longitudinal investigation, we seek to evaluate the influence of adverse experiences on mother-infant bonding during the fourth trimester among mothers with OUD and their infants and matched control dyads. We hypothesize that mothers in the OUD group (*n*=50) will report higher levels of childhood adversity, more stressful life events during pregnancy, and compromised infant caregiving compared with control group mothers (*n*=25). Further, we hypothesize that maternal adversity will indirectly influence the formation of the mother-infant bond during the fourth trimester through the quality of infant caregiving (Figure 1).

**Method:** For this pre-registered investigation,participants will be drawn from an ongoing study of mother-infant dyads followed from late pregnancy through postpartum month five. We have enrolled *n*=34 mother-infant dyads and have identified an additional *n*=13 pregnant individuals who will enroll at 36 weeks gestation. We will enroll a total sample of *n*=75 dyads by January 2022, which will allow for data analysis and interpretation of results prior to the conference. The currently enrolled participants are 29.2 years old on average and are ethnically and socioeconomically diverse (68.9% non-white, 90% receive public assistance). Participants complete the Adverse Childhood Experiences Scale (Felitti et al., 1998) and the Stressful Life Events Scale (Newton et al., 1979) at 36 weeks gestation and report on infant caregiving (e.g., skin-to-skin contact, interaction with infant; Gartstein & Rothbart, 2003) at four weeks postpartum. Mother-infant bonding is assessed at eight weeks postpartum using the Postpartum Bonding Questionnaire (Brockington et al., 2006).

**Data Analytic Plan:** We will conduct analyses in the R Statistical Program (R Core Team, 2021) and make scripts publicly available on Github.com. ANCOVA design will allow for the assessment of group differences while controlling for key covariates (e.g., maternal depression/anxiety; Osman et al., 2012). Conditional process analysis (i.e., mediation models) will test the indirect contribution of maternal adversity to mother-infant bonding via infant caregiving behavior.

**Implications:** This work has important implications for understanding bonding and attachment among at-risk infants, and, ultimately, has potential to identify targets that support positive infant development, such as reducing stress among mothers with OUD and remediating the consequences of *in utero* opioid exposure through high-quality postnatal caregiving.

**Figure 1.** Conceptual Model of the Proposed Study

4 weeks postpartum

Infant Caregiving Behavior

Preconception, pregnancy

Maternal Adverse Experiences

Mother-Infant Bonding

8 weeks postpartum