**PIAD Project**

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**Title:** Maternal emotion regulation and child socioemotional development: How maternal dysregulation at pregnancy moderates the impact of COVID-19 experiences on infants from 15 to 36 months

**Research Question:** How do prenatal scores from the full form Difficulties in Emotion Regulation Scale (DERS) moderate the relationship between the mother’s prenatal COVID-19 Experiences Questionnaire scores and the trajectory of children’s scores on the Brief Infant-Toddler Social and Emotional Assessment (BITSEA) at 15, 24, and 36-month periods?

**Background**

1. **Susceptibility to Prenatal Stress during Infant Development**

* DOHaD and fetal programming theories suggest that infant development is highly susceptible to environmental factors during the fetal period which can affect infant neurology and increase the risk for negative health impacts later on in life (Barker, 2007; Laifer et al., 2025; O’Donnell & Meaney, 2017).
  + E.g., maternal experiences with childhood trauma have been associated with infant outcomes, such as increased attention scores among female newborns (Kaliush et al., 2023).
* Prenatal psychosocial stress while reporting positive for COVID-19 has also been associated with lower infant attention at 6 month follow up, with later links to socioemotional and neurodevelopment at 12 months postpartum (Werchan et al., 2024).
* Khoury et al. (2024) found that higher levels of maternal prenatal distress during COVID-19 were indirectly associated with greater infant socioemotional issues, particularly externalizing problems measured 15 months postpartum. This indirect association was established via elevated maternal distress at 6 weeks and 15 months postpartum.

1. **Maternal emotion dysregulation and impacts on infant development**

* Evidence that maternal prenatal psychological inflexibility was a unique contributor to increased negative infant affective expression at 6 and 12 month postpartum, as well as increased socioemotional difficulties at 2 years postpartum (Laifer et al., 2025).
* Maternal DERS scores during pregnancy predicted an increase in everyday maternal stress 7 months postpartum, with increased postnatal stress predictive of a decrease in toddler expressive vocabulary (Wright et al., 2025).
  + Suggests that emotional dysregulation measured via DERS is a stable factor impacting postnatal environmental stress.

1. **Child socioemotional dysregulation and longitudinal measurement**

* Maternal pregnancy specific anxiety has shown to be a significant predictor of increased issues in infant self-regulation at 3 and 6 month periods (Schwarze et al., 2024).
* However, Mustonen et al. (2024) finding that higher maternal hair cortisol levels were actually associated with improved socioemotional development via the BITSEA.
  + This highlights the nuisance of these factors and the importance of looking at moderating factors on stress and child dysregulation, such as maternal levels of emotion dysregulation during the prenatal period.
* Li et al.’s (2024) mediation analysis on how home environment mediates the effect of prenatal stress on child socioemotional outcomes found that prenatal stress significantly affected social emotional development indirectly via home environment at 12 months postpartum.
  + Supports link between COVID-19 stress and postpartum socioemotional development but limited to one time point and does not consider how maternal capacity for emotion regulation may moderate the affect of stress during COVID-19 on the longitudinal trajectory of infant development.

**References**

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