Maternal Stress and Distress Tolerance as Predictors of Infant Sleep Quality

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Background

- Correlation between infant sleep quality and maternal sleep quality
- Low maternal sleep quality associated with negative mood states, parenting stress, and poor daytime functioning (Meltzer & Mindell, 2007)
- Negative relationship between amount of sleep experienced by infant and stress levels of mothers at 4 months, but not at 12 months – sleep patterns still being established (Becker et al., 1991)
- Lower average sleep times/sleep efficiency for infants with mothers who have a high risk of depression compared to those with a low risk of depression (Armitage et al., 2009; Bat-Pitault, 2017)
- Positive relationship between infant sleep problems and maternal anxiety between birth & 30 months (O'Connor et al., 2007; Petzoldt et al., 2016)

Methods

Participants
- Recruited by the Brain and Early Experience (BEE) Study
- Comprised of 40 of mother-infant dyads from the Chapel Hill area
- 35% of mothers have Master's degree or higher

Maternal Stress

Cohen Perceived Stress Scale
- Measured prenatally
- 10-item self-report questionnaire
- Scores range from 0 (low stress) to 4 (high stress)

Parental Stress Index – Short Form
- Measured at 6-month time point
- 36-item self-report questionnaire
- Scores range from 0 (low stress) to 4 (high stress)

Maternal Distress Tolerance

Three Facet Mindfulness Questionnaire
- Measured prenatally
- 15-item self-report questionnaire
- Scores range from 0 (low mindfulness) to 4 (high mindfulness)

Distress Tolerance Scale
- Measured at 6-month time point
- 15-item self-report questionnaire
- Scores range from 1 (low distress tolerance) to 5 (high distress tolerance)

Infant Sleep

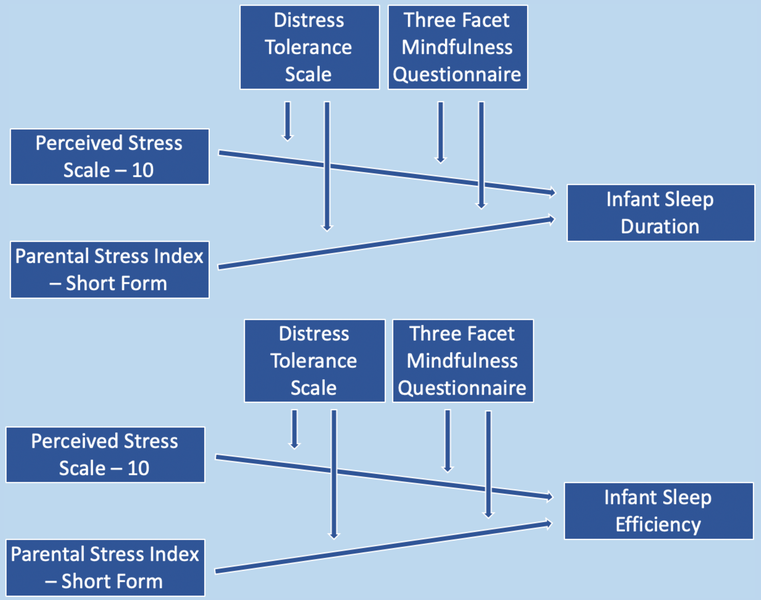
Actigraphy – Actiwatch 2
- Measured at 6-month visit
- Worn on infant's ankle for 6 days and 7 nights
- Sleep quality determined based on total sleep duration as well as sleep efficiency

Hypotheses

1. **Higher levels of maternal stress, measured prenatally, will correlate with lower levels of infant sleep quality at 6 months.**
2. **The relationship between high maternal stress levels and low infant sleep quality will be less pronounced when the mother has high levels of distress tolerance.**

Figures

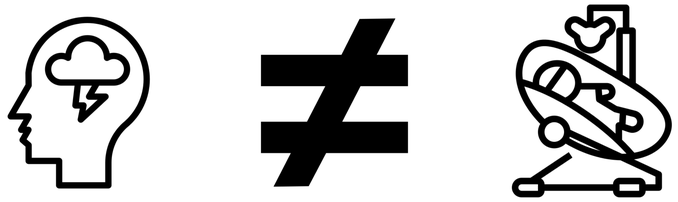
Analyses



Actigraphy Chart Example

Results

- Maternal stress is **not associated** with infant sleep quality.
- Furthermore, maternal distress tolerance **does not** moderate this relationship.
- Non-significant results found at all time points.



Discussion

- Hypotheses were not supported
- **Strengths:** examination of variables at multiple time points, as well as use of biofeedback sleep data (as opposed to self-report sleep measures)
- **Limitations:** restriction of range, low power, potential self-report bias
- **Future research** could examine similar research questions using biofeedback stress measures (e.g. cortisol levels) to minimize self-report bias; could examine infant sleep quality in relation to other maternal health factors (e.g. sleep, cardiovascular health); could examine infant sleep at other time points
- Does not mean that measures to alleviate stress and/or improve infant sleep quality are unimportant

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