Maternal and Infant RSA and SCR Responses to the Still-Face Paradigm

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Background

- The Still-Face Paradigm is a validated task intended to elicit distress from infants (Tronick et al., 1978).
- Although infants exhibit a physiological response to this task (Conradt & Ablow, 2010), less is known about mothers' physiological responses during the Still-Face.
- Concordant physiological responses would indicate that each episode of the task is similarly distressing for both mothers and infants.
- In contrast, discordant maternal and infant physiological responses would indicate that mothers and infants experience repeated mismatched physiological states, encouraging the infant's emerging self-regulation.

Aim of the Present Study

- Assess whether maternal and infant physiological responses were concordant or discordant across all episodes of the Still-Face Paradigm.

Methods

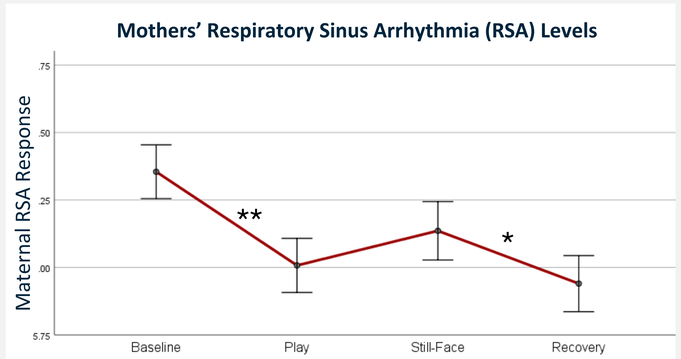
Participants (*N* = 99 mother-infant dyads)

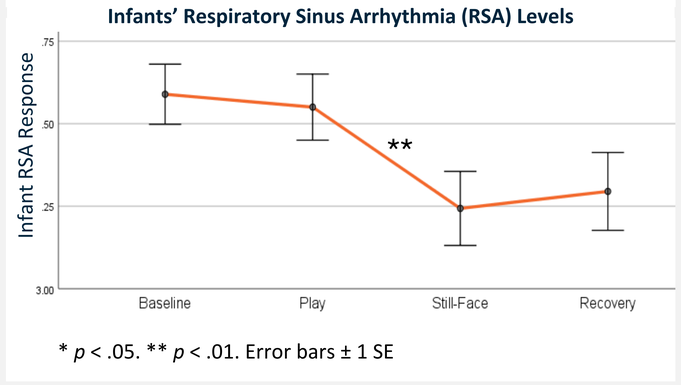
- Average maternal age was 30 years (*SD* = 5 years).
- Infants were age seven months.
- 48% of mothers were White/non-Hispanic, 30% were Hispanic, and 22% were a different non-White race or ethnicity.
- Median family income was $50,000 - $79,999.

Measures

- Respiratory sinus arrhythmia (RSA) levels and skin conductance responses (SCR) were measured using MindWare Technologies' software during a 2-minute video and the 3 episodes of the Still-Face Paradigm.

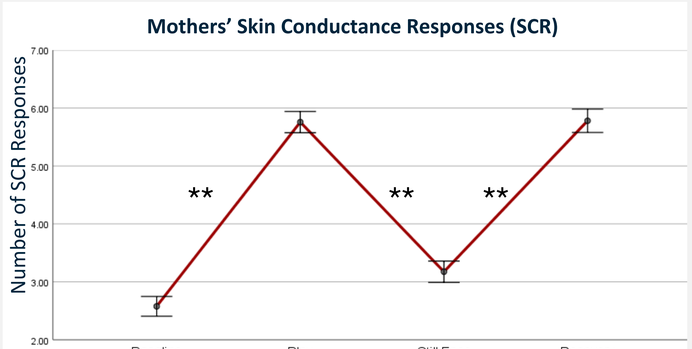
Results

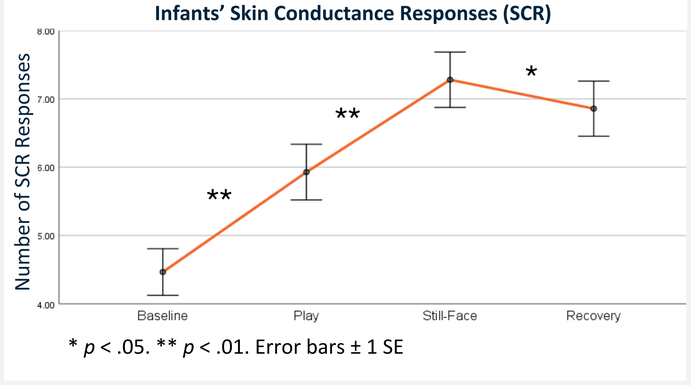




* $p < .05$. ** $p < .01$. Error bars ± 1 SE

- Mothers' RSA levels decreased during play and recovery episodes.
- In contrast, infants' RSA levels decreased during the still-face episode.





* $p < .05$. ** $p < .01$. Error bars ± 1 SE

- Mothers' SCRs increased during the play and recovery episodes.
- In contrast, infants' SCRs increased during the play and still-face episodes and then decreased during the recovery episode.

Conclusion

- Overall, mothers and infants exhibited discordant patterns of parasympathetic and sympathetic nervous system activation during the Still-Face Paradigm.
- This pattern of results supports a mutual regulation model of development.

Future Directions

- Future studies should use multilevel modeling to assess physiological reactivity across the task within dyads.
- Additional analyses are needed to assess whether dyadic patterns of physiological regulation vary for dyads who exhibit more or less behavioral attunement during the Still-Face Paradigm.