Longitudinal Associations between Parental Reflective Functioning, Parenting Behavior, and Infant Affect among a Sample of Racially and Economically Diverse Mothers

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Introduction
Reflective functioning refers to the capacity to understand one's own and others' mental states and to draw accurate conclusions about the knowledge, feelings, and thoughts of others. It has been suggested that reflective functioning plays an important role in the development of affect regulation (Fonagy et al., 2002). Additionally, recent research has shown that parents with higher levels of parental reflective functioning, or the ability to understand and reflect on their child's mental states, are more likely to engage in more sensitive and less negative parenting behaviors during observed interactions with their infants (Grienenberger et al., 2008; Rosenblum et al., 2008; Stacks et al., 2014). However, few studies have examined the relationship between parental reflective functioning and parenting behavior in relation to the affective expression and emotional development of young children.

AIM OF THE PRESENT STUDY:
The present study seeks to examine relationships between prenatal parental reflectivity, observed negative and positive parenting behaviors, and infant affect during the child's first year of life among a diverse sample of mothers.

Method
Participants
- Age: Mean = 26 yrs; Range = 18-42; SD = 5.7
- Monthly Family Income: Median = $1500
- 73% received services from WIC and 76% had public health insurance
- Education: Some college = 57%, High school or less = 20%, College or graduate degree = 13%
- Family status: Single parents = 64%, First-time mothers = 50%.

Procedures
A community sample of pregnant women (N=120) was recruited for a prospective longitudinal study on parenting. Mothers were interviewed during the third trimester of pregnancy (T1), and at 3 months (T2), 1-2, and 3-years postpartum (T3, T4, and T5, respectively). The current study utilized data from the first and third waves of data collection.

Measures
- Maternal age and education served as covariates and were assessed at T1 using a demographics questionnaire.
- Socioeconomic Status also served as a covariate and was assessed using a ratio of income to needs.
- The Working Model of the Child Interview (Zeanah, benoit, & Barton, 1999) was used at T1 to assess parents' mental representations of their children and the parent-child relationship. The Parenting Reflectivity Scale (Rosenblum et al., 2008) was used to measure parental RF from the transcribed interviews on a 1-5 scale, with 1 = low or no reflectivity and 5 = characteristically high reflectivity. Coding was completed by a team of trained coders (ICCs ranged from .81-.87).

Method, continued
- Observed Maternal Behavior and Affect: were coded on videos of mother-child play interactions at T3 by a trained team of coders. Mothers were rated on a 1-5 scale on several traits, which formed positive and negative parenting composites via an exploratory factor analysis.
- Positive parenting consists of the following:
  - Engagement: the mother's connectedness or involvement with the infant (ICCs ranged from .79-.87)
  - Enthusiasm: the intensity of mother's excitement and interest during play (ICCs ranged from .81-.86)
  - Warmth: mother's expressions of affection toward infant (ICCs ranged from .76-.88)
  - Absence of Flat Affect: the presence of maternal affective expression (ICCs ranged from .89-.91)
- Negative parenting consists of the following:
  - Anxiety: mother's expressions of tension or anxiety during play (ICCs ranged from .82-.93)
  - Interference: the degree to which the mother is interfering with the child's goals or directing play (ICCs ranged from .87-.93)
  - Frightening: atypical or odd behaviors by the mother that may confuse or frighten the infant (ICCs ranged from .84-.89)
  - Covert Hostility: mother's expressions of indirect hostility toward the infant (ICCs ranged from .88-.93)
  - Absence of Sensitivity: the mother's inability to perceive and accurately interpret and respond to the infant's signals (ICCs ranged from .87-.93)
- Infant Affective Expression: was also coded from videos of mother-infant play interactions by a trained, reliable team of coders (different from maternal behavior coders) at T3. Infants received codes on a 1-5 scale based on their levels of emotional expression for both frequency and intensity of positive (ICCs = .95) and negative infant affect (ICCs ranged from .92-.97).

Results
- Observed Maternal Behavior and Affect were coded on videos of mother-child play interactions at T3 by a trained team of coders. Mothers were rated on a 1-5 scale on their levels of several traits, which formed positive and negative parenting composites via an exploratory factor analysis.
- Positive parenting consists of the following:
  - Engagement-the mother's connectedness or involvement with the infant (ICCs ranged from .79-.87)
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  - Absence of Flat Affect- the presence of maternal affective expression (ICCs ranged from .89-.91)
- Negative parenting consists of the following:
  - Anxiety- mother's expressions of tension or anxiety during play (ICCs ranged from .82-.93)
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Results, continued
Additional analyses showed that a direct effect between prenatal reflectivity and negative infant affect was not significant. Negative parenting behavior mediated the relationship between prenatal parental reflectivity and negative infant affective expression, after controlling for maternal age, education, and socioeconomic status (CI = .110 -.305; see Figure 3).

Discussion
- The results of the present study suggest that the ways in which parents think about their own mental states, as well as the future mental states of their children, before the child is born may have important implications on their caregiving behavior and their child's emotional expression 1-year postpartum. However, while we hypothesize parenting behavior is impacting infant affect, it may be that a parent's behavior toward their child is a reaction to the infant's affective expression.
- These results expand upon prior research indicating the importance of prenatal reflectivity for the parent-child relationship and child outcomes and may also be the first such study to show a relationship with prenatal reflectivity.
- Additionally, the results of the present study provide support for the use of home-based interventions that focus on increasing parents' reflective capacity such as Minding the Baby (Slade et al., 2005), The Circle of Security (Marvin et al., 2002), and Mom Power (Muzik et al., 2015), which focus specifically of improving the quality of parent-infant relationships by increasing a mother's ability to think about the mental states of her infant.
- Early intervention appears to be particularly important as the ways in which a mother thinks about her child's mental states before birth may have profound impacts on the manner in which the parent engages in both positive and negative parenting behaviors toward that child, and ultimately, the child's expressions of positive and negative affect.
- Given the number of mothers in the sample who participated in health insurance, interventions aimed at improving parenting reflectivity should be covered by public insurance agencies such as Medicaid to ensure that low-income mothers have access to these important services.