Mother-Child Interactions and Associations with Infant BMI and Relative Food Reinforcement

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BACKGROUND

- In 2016, there were an estimated 41 million overweight children under the age of five (World Health Organization, n.d.). Previous research has shown that the quality of the maternal-child relationship is associated with childhood weight status (Kong et al., 2019).
- The Food Reinforcement Ratio (FRR) is a paradigm used to determine how hard someone is willing to work for food versus a nonfood alternative reinforcer (Kong et al., 2016).

PURPOSE

- The purpose of this study was to examine associations between maternal-child interactions during periods of feeding and free play and the infant’s BMI. The study also examined associations between the maternal-child relationship and the infant’s willingness to work for food through the FRR.

METHODS

- A secondary data analysis of an ongoing intervention from the University at Buffalo Division of Behavioral Medicine Infant Laboratory was completed. All participants included in analyses were mother-infant dyads with infants between the ages of 9-15 months.
- Collected data included the calculated food reinforcement ratio, obtained infant BMI, and observations of the maternal-child relationship.
- Infant height and weight were measured by trained staff members.
- FRR was obtained through the use of a paradigm in which infants would press a mouse button to earn either food or music rewards.
- The quality of the maternal-child relationship was assessed by behavioral observations during feeding and free play tasks. Interactions were coded by staff using a collection of 5-point scales.
- Data analysis included descriptive statistics and linear regression to evaluate infant FRR, infant BMI, and observations of the maternal-child relationship. Data was analyzed using SPSS and significance was set at p < .05.

RESULTS

- The retrospective chart review consisted of 123 mother-infant dyads
- Results revealed that the infant population had a mean age of 12.01 months (SD = 1.86) and 51% were female.
- Of the total infant sample, the majority was considered to be normal weight (n = 87, 70.73%).
- The maternal population had a mean age of 32.44 years (SD = 4.31).
- Analysis of the food reinforcement ratio revealed that the average schedule achieved for food was 5.15, and the average schedule achieved for the music alternative was 3.77.
- Multiple linear regression did not reveal any statistically significant association between maternal warmth and negative affect with FRR (F(2, 120) = .242, p = .785, R² = .004).
- A second linear regression revealed no statistically significant association between maternal warmth and negative affect with the infant’s BMI (F(3,119) = .494, p = .687, R² = .012).

DISCUSSION

- Obesity during early childhood is a growing national public health concern.
- Given the negative health consequences associated with obesity, it is imperative to identify modifiable risk factors which may be associated with the development of obesity during infancy.
- This study did not find any significant associations between the quality of the maternal-child relationship and either infant FRR or infant BMI.
- These results highlight the importance of further investigation into risk factors which may be associated with infant obesity in the hopes of creating targeted interventions.

REFERENCES