

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



Jacqueline M. Szabat, MPAS¹, Curtis A. Phillippi, MPAS¹, Andrew P. Tantalo, MPAS¹,
Renee Andreeff, Ed.D., PA-C, DFAAPA¹, Bethany Dunn, PA-C, DC¹ and Kai Ling Kong, Ph.D., M.S.^{2,3,4}

¹ Physician Assistant Department, D'Youville College, Buffalo, NY, USA

² Baby Health Behavior Lab, Division of Health Services and Outcomes Research, Children's Mercy Research Institute, Children's Mercy Hospital, Kansas City, MO, USA

³ Department of Pediatrics, University of Missouri- Kansas City, Kansas City, MO, USA

⁴ Department of Pediatrics, University of Kansas Medical Center, Kansas City, KS, USA

D'YOUVILLE

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 vs. a nonfood alternative reinforcer (Kong et al., 2016).

PURPOSE

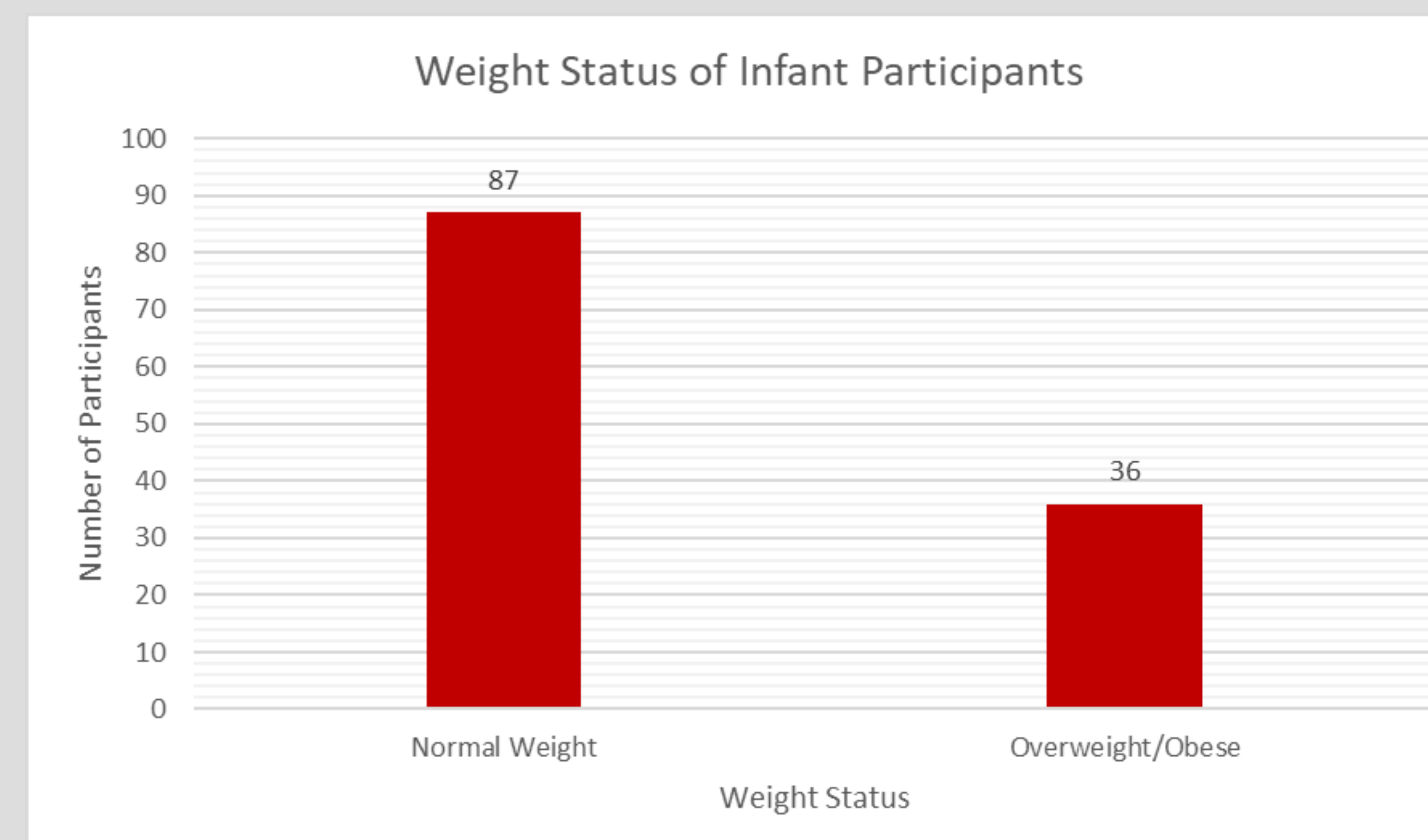
- The purpose of this study was to examine associations between maternal-child interactions during periods of feeding and free play and the infant's BMI. The study also examined associations between the maternal-child relationship and the infant's willingness to work for food through the FRR.

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 ($F(2, 120) = .242, p = .785, R^2 = .004$).
- A second linear regression revealed no statistically significant association between maternal warmth and negative affect with the infant's BMI ($F(3, 119) = .494, p = .687, R^2 = .012$).

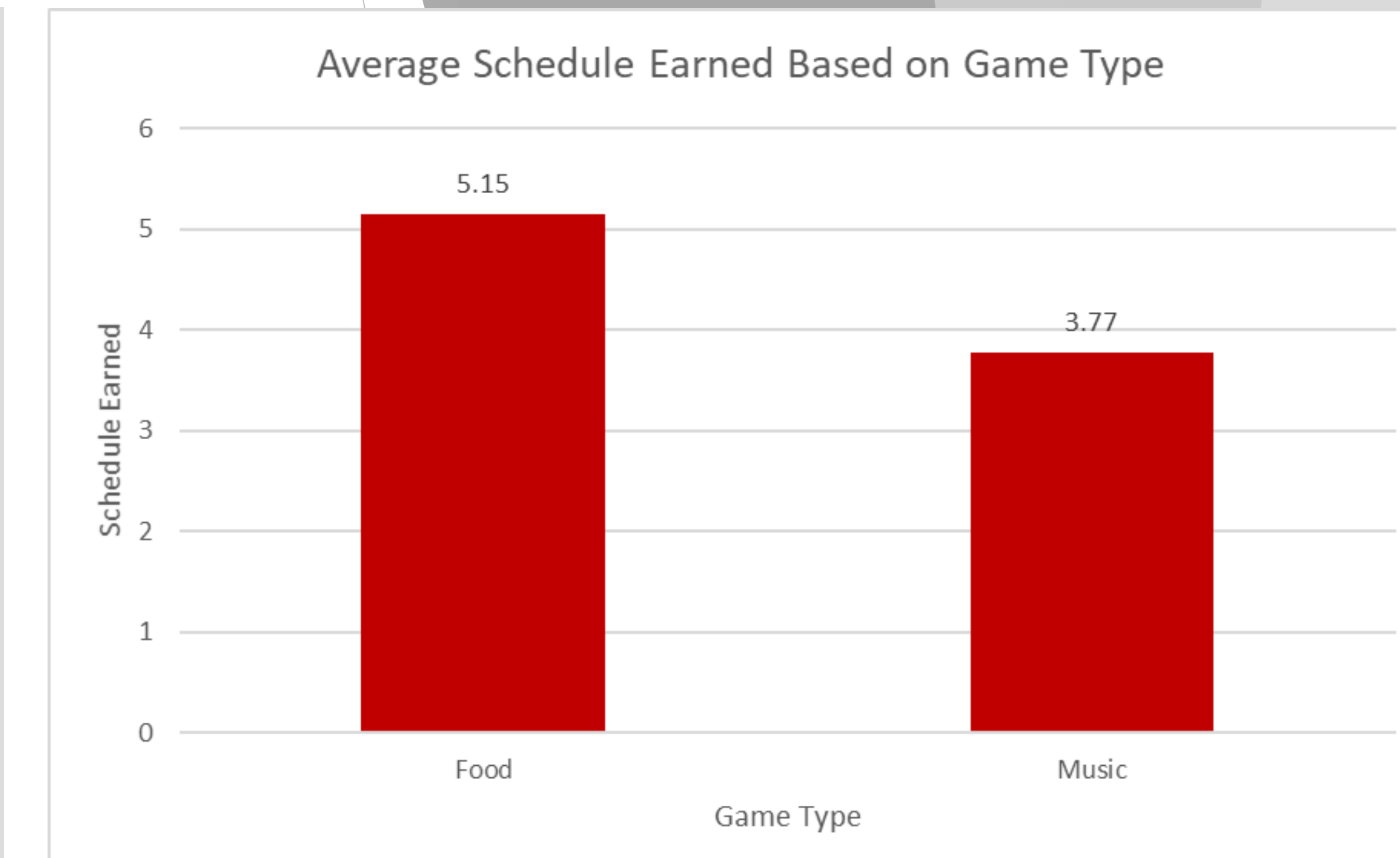


Quality of the Maternal-Child Relationship and Infant FRR on Infant BMI

	B	Std. Error	Beta	t	Sig	Lower Bound	Upper Bound
Infant FRR	.800	.657	.111	1.22	.226	-.502	2.10
Maternal Warmth	-.006	.145	-.004	-.039	.969	-.293	.281
Maternal Negative Affect	.016	.186	.009	.086	.932	-.353	.385

Quality of the Maternal-Child Relationship on Infant FRR

	B	Std. Error	Beta	t	Sig	Lower Bound	Upper Bound
Maternal Warmth	-.002	.020	-.010	-.093	.926	-.042	.038
Maternal Negative Affect	-.014	.026	-.058	-.555	.580	-.065	.037



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

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