

# Examining the Relation between Income and Healthy Family Behaviors affecting Pediatric Obesity Risk

Elizabeth B. Ruzicka B.A., Amy J. Fahrenkamp, M.A., Katherine E. Darling, B.A.,  
Emily L. Ferrell, & Amy F. Sato Ph.D.

## Background

- Health promoting family behaviors include healthy eating behaviors (e.g., minimal sweetened beverages), physical activity, and family mealtime routines and decreased use of these healthy behaviors is associated with risk for obesity.
- Youth from low-income households are at a disproportionately higher risk for obesity, which may be related to use of fewer health promoting family behaviors.
- The goal of this study was to examine the relationship between income and healthy family behaviors to reduce pediatric obesity health disparities.

## Hypotheses

- After controlling for parent BMI and child BMI percentile, lower family income will predict use of fewer health promoting family behaviors.
- Low income families will engage in fewer health promoting family behaviors than non-low income families.



For correspondence, please contact  
Elizabeth B. Ruzicka (ebollin1@kent.edu)

Table 1. Regression Results of Family Income Predicting Health Promoting Family Behaviors (N=62)

Step and Predictor Variable	B	SE B	Beta (β)	R <sup>2</sup>	ΔR <sup>2</sup>
<b>Step 1:</b>					
Parent BMI	-.01	.01	-.21	<b>.10*</b>	
Child BMI Percentile	.00	.00	-.18		
<b>Step 2:</b>					
Parent BMI	-.01	.01	-.08	<b>.18*</b>	<b>.08*</b>
Child BMI Percentile	.00	.00	-.12		
Family Income	.00	.00	<b>.33*</b>		

Table 2. Correlations between Parent BMI, Child BMI Percentile, Family Income, and Family Health Behaviors (N=62)

Variable	1	2	3	4
1. Parent BMI	--			
2. Child BMI Percentile	<b>.24*</b>	--		
3. Healthy Family Behaviors	<b>-.26*</b>	-.23	--	
4. Family Income	<b>-.46**</b>	<b>-.28*</b>	<b>.40**</b>	--

Note. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Methods

### Participants and Procedure:

- Parents (N=67; 95% female; 85% white) of adolescents (12-17) completed measures assessing family health behaviors and income (M=84,676, SD=52,076; 30% low income) as a part of a larger study examining risks for adolescent obesity.
- Mean parent BMI = 29.24, SD=7.48; 66% overweight or obese
- Mean adolescent BMI percentile for age-and-gender = 63.95, SD=28.1; 33% overweight or obese

### Measures:

#### Family Health Behavior Scale

- 27-item Family Health Behavior Scale (FHBS; Moreno et al., 2011;  $\alpha=.79$ ) measuring the use of health promoting behaviors within the family. Lower scores indicating use of fewer family health behaviors

#### Income

- Parent Reported Annual Household Income

#### Parent BMI

- Objective Height (stadiometer) and weight (digital scale) were measured and used to calculate BMI (kg/m<sup>2</sup>)

#### Adolescent BMI Percentile

- Objective Height (stadiometer) and weight (digital scale) were measured and used to calculate BMI percentile based on age-and-gender (Centers for Disease Control and Prevention, 2000).

## Results

- Hierarchical linear regression analysis suggested that, after controlling for parent BMI and child BMI percentile, lower family income was associated with lower levels of health promoting family behaviors,  $F\Delta(1,58) = 5.82, p < .05$ .
- Lower income was related to higher parent BMI ( $r=-.46, p < .01$ ) and higher adolescent BMI percentile for age and gender. ( $r=-.28, p < .05$ ).

## Discussion

- After accounting for parental BMI and child BMI percentile, lower family income is associated with parental report of fewer healthy family behaviors. Low income families engage in fewer healthy family behaviors, which may contribute to their risk for obesity.
- These findings may be explained, in part, by low-income families having less time to prepare healthy meals, limited safe space to exercise, and less resources for healthy eating.
- As previous family-based interventions show improvements in pediatric health behaviors, future research is needed to determine whether targeted health behaviors with the family as a whole may minimize obesity risk in low-income adolescents.