JOURNAL OF SOCIAL, BEHAVIORAL, & HEALTH SCIENCES

Journal of Social, Behavioral, & Health Sciences
2025, Volume 19, Pages 1–13
https://doi.org/10.5590/JSBHS.2025.19.1743

Original Research

WALDEN UNIVERSITY

Predictors of Parental Behavior and Child Weight Status

Fidelia Senayah, PhD
Walden University, Minneapolis, MN, United States
https://orcid.org/0000-0001-9641-7406

Heba M. Athar, MD
Walden University, Minneapolis, MN, United States
https://orcid.org/0000-0002-0669-7334

Allison G. Litton, DrPH
Walden University, Minneapolis, MN, United States
https://orcid.org/0000-0002-1447-4923

Contact: *fasenayah@gmail.com*

Abstract

Childhood obesity is a major health issue globally. The prevalence rate remains high in Ohio, with associated complications among affected children and adolescents. The current study examined the association among obesity risk knowledge, risk perception, feeding behavior, and child weight outcome while controlling for race, gender, income, and education. We collected quantitative data through an online survey of parents in Northwest Ohio (n = 71) using the obesity risk knowledge scale and factors from the Child Feeding Questionnaire. We analyzed data using multiple linear regression. The primary outcome measures were feeding behavior and child weight status. Parental obesity risk knowledge, risk perception, or concern about child weight was significantly associated with feeding behavior [F (6, 64) = 4.459, p < .001] and child weight outcome [F (6, 64) = 3.351, p = .006]. Risk perception significantly predicted parental feeding behavior of pressure to eat and food restriction, while the association among parental obesity risk knowledge, risk perception, and child weight status was modified by parental gender. The findings of the study suggest that parents' perceptions or concerns about their child's weight and their gender have a greater influence on their feeding intentions, behavior, and child weight than knowledge of obesity risk. Thus, interventions for childhood obesity could focus on addressing the parents' risk perception and gender-tailored education to improve their feeding intentions, feeding behavior, and weight outcomes in children.

Keywords: *childhood obesity, obesity knowledge, feeding behavior, risk perception*

Date Submitted: July 11, 2025 | **Date Published:** October 13, 2025

Recommended Citation

Senayah, F., Athar, H. M., & Litton, A. G. (2025). Predictors of parental behavior and child weight status. *Journal of Social, Behavioral, & Health Sciences, 19,* 1–13. https://doi.org/10.5590/JSBHS.2025.19.1743

Introduction

Childhood obesity poses a challenge to public health globally, and the prevalence rate continues to increase worldwide (González-Álvarez et al., 2020). In the United States, nearly 1 in 5 children are obese, and data indicate that the obesity prevalence rate among children aged 6 to 11 years was 20.7% between 2017 and 2020 (Centers for Disease Control and Prevention, 2024). The global prevalence rate of childhood obesity is over 18%, which the World Health Organization predicted will further increase by 2030 (World Health Organization, 2025). In Ohio, the childhood obesity rate from 2020 to 2021 was approximately 16.2% among children aged 10 to 17 years and 12.5% among children aged 2 to 4 years (Robert Wood Johnson Foundation, 2021).

The role of parents in preventing and managing childhood obesity cannot be overemphasized, as is shown in the literature (Hagerman et al., 2022; Kovai et al., 2025; Loth et al., 2021). Family environment, parental obesity risk knowledge, risk perception or concern about their child's weight, and beliefs have all been linked to how parents seek information about obesity from their health providers and their food-related practices (Hagerman et al., 2022; Kovai et al., 2025). While many factors influence parental feeding behavior and child weight outcomes, studies that link obesity risk knowledge or risk perception to these outcomes are limited, especially in Ohio, where no previous study was found. Due to the state's socioeconomic, cultural, healthcare, and demographic landscape that could potentially influence parental knowledge, perception, and behavior, one cannot assume the national pattern applies.

"Risk perception" in the context of this study refers to parental concern about their child's weight (Hagerman et al., 2022). "Obesity risk knowledge" is the awareness of the health risks associated with obesity (Styk et al., 2022). Studies have found that children of parents who had limited obesity risk knowledge had a higher obesity risk compared to children whose parents had a better understanding of obesity and the associated health risks (O'Brien et al., 2022; Straughan & Xu, 2022). The current study sampled parents from different demographics to examine whether parental obesity risk knowledge and risk perception predicted their feeding behavior and child weight status while adjusting for sociodemographic factors.

Literature Review

The World Health Organization (2025) has described obesity as a multifactorial disease, attributing the condition to several factors, including psychosocial, genetic, and structural. The influence of parental risk perception, concern, and attitudes related to feeding practices and weight outcomes in children has been demonstrated in the literature. For example, research findings by Ayine et al. (2020) indicated that perceived child weight ($\beta = 0.312$, $p < .001$), concern about child weight ($\beta = 0.320$, $p < .001$), and pressure to eat ($\beta = -0.224$, $p = .005$) were significantly related to child weight outcomes. In their study, Loth et al. (2021) reported similar findings that compared the association between parental concern about child weight and feeding practices. The researchers observed a significant association between parental concern about child weight and feeding behavior factors of pressure to eat ($p = .02$), food restriction ($p < .001$), and food monitoring ($p = .04$). In contrast to the study by Ayine et al. (2020) and Loth et al. (2021), which found significant association between parental concern about child weight and feeding behavior, Kutbi and Mosli (2024) found no association between parental concern about child weight and their feeding practices. Rather, they found a significant association between parental concern and children's desire to eat ($\beta = 0.14$, $p = .03$) and their food responsiveness ($\beta = 0.16$, $p = .02$). While the study by Kutbi and Mosli (2024) focused on parents of children aged less than 5 years, Ayine et al. (2020) studied elementary school–aged children aged 6 to 10 years, and Loth et al. (2021) studied elementary school–aged children aged 5 to 7 years, which could account for some of the variations in study outcomes.

Studies have also indicated that incorporating children's genetic and environmental obesity risk factors into parental obesity risk knowledge has the potential to improve their risk perception and child weight outcomes. In an experimental study in Minneapolis, Hagerman et al. (2022) found that parents' obesity risk perception for their child improved with the inclusion of genetic risk factors ($\beta = 0.36$, $p < .001$) and environmental risk factors ($\beta = 0.22$, $p = .004$) into obesity risk education. Persky et al. (2021) reported similar findings on the significance of the inclusion of these factors in obesity risk education and noted that combining genetic and family environmental risk factors in obesity education improved risk perception. While the findings by Hagerman et al. (2022) and Persky et al. (2021) showed significant results only with the inclusion of genetic and environmental factors to the obesity risk education information, another experimental study conducted by Renales et al. (2021) showed that providing parents with obesity-related education alone without the inclusion of genetic or environmental factors improved parental obesity perception by 76.7%. Renales et al. (2021) reported a significant improvement in parental perception of improving their child's food portion sizes ($t_{(29)} = -2.13$, $p < .05$) and limiting high-calorie food ($t_{(29)} = -2.09$, $p < .05$). These findings further support how parental obesity risk knowledge, perception, and continuous education are essential to improving outcomes in children.

Purpose of the Study

The purpose of our study was to examine (a) the relationship among parental obesity risk knowledge, risk perception, and feeding behavior among parents who have children aged 6 to 11 years in Northwest Ohio and (b) the relationship among parental obesity risk knowledge, risk perception, and their child's weight status among parents of children aged 6 to 11 years in Northwest Ohio. The study aimed to provide a detailed understanding of the association among obesity risk knowledge, risk perception, and parents' feeding behavior and child weight outcomes based on the Health Belief Model (HBM) (Rosenstock, 1974). Thus, the research questions (RQs) for the study are:

> RQ 1: What is the relationship among parental obesity risk knowledge, risk perception/risk of obesity, and feeding behavior while controlling for race/ethnicity, gender, income, and education?
>
> RQ 2: What is the relationship among parental obesity risk knowledge, risk perception/risk of obesity, and child's weight status while controlling for race/ethnicity, gender, income, and education?

We hypothesized that parental obesity risk knowledge and risk perception would be associated with (a) parental feeding behavior and (b) child weight status while controlling for gender, race, income, and education. We tested these hypotheses using multiple linear regression.

Conceptual Framework

To understand how knowledge and perception predicted health behavior, we used the HBM (Rosenstock, 1974) as the conceptual framework for this study. According to HBM, an individual's beliefs about health and health conditions influence their health-related behavior (Rosenstock, 1974). Constructs of the HBM model—which are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action—have informed many behavior interventions and education in cancer screening, weight management, environmental and genetic education, and physical activity, among others, and have been targeted in studies related to obesity risk knowledge and risk perception to understand health beliefs and behavior change intentions (Abbas et al., 2023; Hagerman et al., 2022; Kebede et al., 2023; Khodaveisi et al., 2021; Saghafi-Asl et al., 2020; Woods & Nies, 2021). Two constructs of HBM aligned with this study: perceived susceptibility and perceived severity. "Perceived susceptibility," also known as risk perception, refers to the beliefs about the likelihood of getting a disease or condition, while "perceived severity" refers to

the beliefs about the seriousness of contracting an illness or condition, including consequences (Ghorbani-Dehbalaei et al., 2021). This study used perceived severity as related to obesity risk knowledge (Woods & Nies, 2021) to understand how obesity risk knowledge influences parental feeding behavior and their child's weight and perceived susceptibility as related to obesity risk perception. Our intent was to further understand parental concern about their child's risk for obesity and how that informed their feeding behavior and child weight outcome (Hagerman et al., 2022; Woods & Nies, 2021).

Methods

Participants and Recruitment

The study employed a quantitative cross-sectional design approach and a convenience sampling method, which involved sharing digital survey flyers online in Northwest Ohio parent groups on social media, particularly platforms that offered after-school programs and parent educational information. The flyer contained a summary of the study and a link through which parents accessed the survey questionnaire on Google Forms. Participants were parents and guardians with children aged 6 to 11 years who were residents of Northwest Ohio (n = 71). The sample size was estimated using G*Power version 3.1.9 statistical software (Faul et al., 2009) to estimate the minimum required sample size (n = 68) based on an a priori power multiple linear regression analysis for a fixed model with R^2 increase by selecting an appropriate effect size (f^2 = .15), power (1-β = .80), and level of significance (α = .05). Each participant received a $10 digital gift card after submitting the survey online delivered through Tango cards as a thank-you gift for completing the survey. All responses were anonymous; no personal identifiable information was collected during the study. The Walden University Institutional Review Board reviewed and approved the study, including the flyer and survey questionnaires (Approval number 06-04-24-1056666). Participants indicated consent for the study by agreeing to a consent statement on the first page of the Google Form, which provided a summary of the study. Once participants agreed to the consent statement by clicking yes, they were directed to the next page of the Google Form to begin the survey. Those who declined the consent statement were automatically directed to the exit page of the Google Form.

Measures

Parents completed survey questionnaires online from the Obesity Risk Knowledge (ORK-10) scale (Swift et al., 2006) and items from the Child Feeding Questionnaire (CFQ) (Birch et al., 2001) for child feeding behavior and risk perception. They also provided information on their child's weight, height, age, and sex, which we used in estimating body mass index (BMI) Z-score. The ORK-10 was developed through an extensive pilot study that involved several items on obesity-related health risk and their psychometric properties among a large pool of non-obesity experts (n = 230) and obesity experts (n = 200). The scale was validated by Swift et al. (2006). The Cronbach's alpha for the scale's internal reliability was 0.83. Our study had a Cronbach's alpha of 0.72. The scale had 10 statements, which included: "A person with a beer-belly shaped stomach has an increased risk of getting diabetes," and "It is better for a person's health to have fat around the hips and thighs than around the stomach and waist" with response options of "true," "false," and "I don't know," and a total score of 10.

We assessed risk perception and feeding behavior using factors from the validated CFQ instrument (Birch et al., 2001) on concern about child weight, food restriction, pressure to eat, and food monitoring. The CFQ instrument was developed to assess parents' concerns and perceptions about childhood obesity through a confirmatory factor analysis model that measured parental beliefs, attitudes, child feeding practices, and obesity risk (n = 394) and was validated by Birch et al. (2001). The Cronbach's alpha for scale internal reliability was 0.75 (concern about child weight), 0.73 (food restriction), 0.70 (pressure to eat), and 0.92 (food monitoring). The Cronbach's alpha for our study was 0.92 (concern about child weight), 0.90 (food

restriction), 0.88 (pressure to eat), and 0.88 (food monitoring). Feeding behavior included questions from three factors: (1) food restriction ("I have to be sure that my child does not eat too many sweets (candy, ice cream, cake or pastries)" and "I have to be sure that my child does not eat too many high-fat foods," with response options ranging from "1 = disagree" to "5 = agree"); (2) pressure to eat ("My child should always eat all of the food on her plate" and "If my child says 'I'm not hungry,' I try to get her to eat anyway," with response options ranging from "1 = disagree" to "5 = agree"); and (3) monitoring ("How much do you keep track of the snack food (potato chips, Doritos, cheese puffs) that your child eats?" and "How much do you keep track of the high-fat foods that your child eats?" with response options ranging from "1 = never" to "5 = always"). Risk perception included one CFQ factor for concern about child weight ("How concerned are you about your child eating too much when you are not around her?" and "How concerned are you about your child having to diet to maintain a desirable weight?" with response options ranging from "1 = unconcerned" to "5 = concerned"). We calculated child weight status as a BMI Z-score using the information on the child's age, height, weight, and sex. Other demographic information collected included parent race/ethnicity, gender, education level, and annual household income.

Data Analysis

A total of 71 participants completed the survey. Only one datum was missing for each of the categories of questions. We address this by imputation with constant value (Kosova et al., 2024). We conducted descriptive statistics and multiple linear regression analysis on the variables using IBM SPSS 29.0 statistical software.

Results

Descriptive Statistics

Tables 1 and 2 show the descriptive statistics of sociodemographic variables and independent and dependent variables. The study population consisted of 65.3% (n = 47) White or European Americans, 29.2% (n = 21) Black or African Americans, 2.8% (n = 2) Americans who identified as Hispanic, and 1.4% (n = 1) Americans who identified as "other." The gender distribution was 51.4% (n = 37) female and 47.2% (n = 34) male. Most participants were undergraduates (55.6%, n = 40) with a college degree, while 26.4% (n = 19) had a high school diploma and 16.7% (n = 12) had a postgraduate degree. In terms of income, most participants reported an annual household income between $50,000 and $74,999 (62.5%, n = 45). The sociodemographic responses were self-reported. Approximately 43.1% of participants' children were of a healthy weight (n = 31), 27.8% were obese (n = 20), 19.4% were underweight (n = 14), and 8.3% were overweight (n = 6). The mean total score of ORK-10 was 6.01 (SD = 1.33). The mean total score risk perception (concern about child weight) was 3.59 (SD = 1.31). The mean total score for the combined feeding behavior variable was 3.47 (SD = .86). The mean total scores for the three individual feeding behavior factors were as follows: food restriction (M = 3.53, SD = .98), pressure to eat (M = 3.36, SD = 1.11) and food monitoring (M = 3.43, SD = 1.01). The mean BMI Z-score was -.004 (SD = 2.16).

Table 1. *Descriptive Statistics for Sociodemographic Factors (*n = *71)*

Variables	*n*	%
Annual household income in dollars		
$0 to $24,900	2	2.8
$25,000 to $49,999	6	8.3
$50,000 to $74,999	45	62.5
$75,000 to $99,999	10	13.9
$100,000 to $124,999	7	9.7

$150,000 and above	1	1.4
Education level		
High school	19	26.4
Undergraduate	40	55.6
Graduate	12	16.7
Race/ethnicity[a]		
White	47	65.3
Black or African American	21	29.2
Hispanic	2	2.8
Other	1	1.4
Gender		
Male	34	47.2
Female	37	51.4
Child weight category based on BMI percentile		
Underweight	14	19.4
Normal weight	31	43.1
Overweight	6	8.3
Obese	20	27.8

Note: BMI = body mass index.

[a] Parents and guardians self-reported their race/ethnicity. "Other" represents any race/ethnicity not indicated.

Table 2. *Descriptive Statistics for Independent and Dependent Variables (*n = *71)*

Variables	*M (SD)*
Obesity risk knowledge total score	6.01 (1.33)
Concern about child weight/risk perception mean score	3.59 (1.31)
Feeding behavior combined score	3.47 (.86)
Food restriction mean score	3.53 (.98)
Pressure to eat mean score	3.36 (1.11)
Food monitoring mean score	3.43 (1.01)
Child weight calculated as BMI Z-score	-.004 (2.16)

Association Among Obesity Risk Knowledge, Risk Perception, and Feeding Behavior

The first RQ examined the association among obesity risk knowledge, risk perception, and feeding behavior. The results of the multiple linear regression are presented in Table 3 to Table 5. The association between obesity risk knowledge, risk perception, and feeding behavior while controlling for gender, race, education, and income was statistically significant [F (6, 64) = 4.459, p < .001, R^2 = .295], with a large effect size (Cohen's f = 0.65). A regression analysis of the three factors, as shown in Table 5, that comprised the feeding behavior variable showed a statistical significance between the predictor variables (obesity risk knowledge and risk perception) and food restriction factor [F (6, 64) = 4.406, p < .001, R^2 = .29] with a large effect size (Cohen's f = 0.64). The pressure to eat factor was also statistically significant [F (6, 64) = 4.00, p =.002, R^2 = .27], and the effect size for this factor was also strong (Cohen's f = 0.61). This association was modified by parental level of education. However, the third factor, food monitoring, was not statistically significant. Parental concern about child weight or risk perception was found to be associated with food restriction and

pressure to eat practices or behavior, while their obesity risk knowledge did not have any association with feeding practices. Parent gender, race/ethnicity, income level, and education were not found to modify the association among obesity risk knowledge, risk perception, and feeding behavior.

Table 3. *ANOVA Summary for Feeding Behavior Combined Score*

Model		*SS*	*df*	*MS*	*F*	*p*
1	Regression	15.461	6	2.577	4.459	< .001[a]
	Residual	36.984	64	.578		
	Total	52.445	70			

Note: Dependent variable: Feeding behavior combined score. ANOVA = analysis of variance.

[a] Predictors: Level of education, annual household income in dollars, obesity risk knowledge total score, race, concern about child weight/risk perception mean score, gender

Table 4. *Multiple Linear Regression Model Predicting Parental Feeding Behavior*

Variables	B	*SE*	β	*p*
ORK-10 total score	-.110	.078	-.170	.161
Concern about child weight/risk perception mean score	.300	.083	.458	< .001
Race	.224	.163	.161	.174
Gender	.179	.226	.104	.430
Annual household income in dollars	-.025	.099	-.027	.804
Level of education	-.216	.168	-.164	.204

Note: Dependent variable: Feeding behavior combined score. Predictors: Level of education, annual household income in dollars, obesity risk knowledge total score, race, concern about child weight/risk perception mean score, and gender. ORK-10 = Obesity Risk Knowledge.

Table 5. *Multiple Linear Regression Model of Factor-by-Factor Analysis of Feeding Behavior*

	Food restriction			Pressure to eat			Food monitoring		
Variables	B	*SE*	β	B	*SE*	β	B	*SE*	β
ORK-10 total score	-.080	.088	-.109	-.137	.102	-.164	-.152	.099	-.200
Concern about child weight/risk perception mean score	.350	.094	.470*	.289	.109	.340**	.185	.106	.239
Race	.244	.185	.154	.166	.214	.092	.252	.208	.154
Gender	.104	.256	.053	.106	.296	.048	.489	.288	.242
Annual household income in dollars	-.036	.113	-.035	.112	.130	-.096	-.177	.127	-.166
Level of education	-.233	.191	-.156	-.493	.220	-.290**	.197	.214	.128

Note: ORK-10 = Obesity Risk Knowledge.

*$p < .01$, **$p < .05$

Association Among Obesity Risk Knowledge, Risk Perception, and Child Weight Status

The second RQ examined the association among obesity risk knowledge, risk perception, and child's weight status (calculated as BMI Z-score) while controlling for gender, race/ethnicity, education, and income. The results are presented in Table 6 and Table 7. The association was statistically significant [F (6, 64) = 3.351, p = .006, R^2 = .23], with a large effect size(Cohen's f = 0.56). The association among obesity risk knowledge, risk perception, and child's weight status was modified by parent gender (β = .340, p = .02). At the same time, race/ethnicity, income, and education level were not significant.

Table 6. *ANOVA Summary for Child Weight Status*

Model		*SS*	*df*	*MS*	*F*	*p*
1	Regression	78.564	6	13.094	3.351	.006[a]
	Residual	250.045	64	3.907		
	Total	328.609	70			

Note: Dependent variable: Child weight is calculated as the BMI Z-score. Predictors: Level of education, annual household income in dollars, ORK-10 total score, race, concern about child weight/risk perception mean score, and gender. ANOVA = analysis of variance; BMI = body mass index; ORK-10 = Obesity Risk Knowledge.

Table 7. *Multiple Linear Regression Model Predicting Child Weight Status*

Variables	B	SE	β	*p*
ORK-10 total score	-.261	.202	-.161	.200
Concern about child weight/risk perception mean score	.120	.216	.073	.581
Race	.353	.424	.101	.409
Gender	1.465	.587	.340	.015
Annual household income in dollars	-.360	.258	-.158	.169
Level of education	.846	.437	.257	.058

Note: Dependent variable: Child weight is calculated as the BMI Z-score.

Discussion

This study examined the association among parental obesity risk knowledge, risk perception or concern about child weight and parental feeding behavior, and child's weight status using the CFQ and ORK-10 instruments. Two constructs of HBM—perceived severity as related to obesity risk knowledge and perceived susceptibility as related to risk perception or concern about child weight—underlined this study. The study participants were primarily undergraduates (55.6%), middle income (76.4%), and White (65.3%), with females constituting approximately 51.4%. Black or African Americans constituted 29.2% of the study population, with 2.8% identifying as Hispanic. The findings showed a significant association among obesity risk knowledge, risk perception, feeding behavior, and child's weight status measured as BMI Z-score. Overall, risk perception or parental concern about their child's weight strongly predicted parental feeding behavior, and gender was found to modify the association between obesity risk knowledge, risk perception, and BMI Z-score. The findings were consistent with other studies that reported a strong association between risk perception and feeding intentions or behavior (Hagerman et al., 2022; Loth et al., 2021; Persky et al., 2021). Specifically, higher parental risk perception or concern about their child's weight was associated with increased or healthier feeding intentions and improved parental feeding behavior.

The association among obesity risk knowledge, risk perception, and concern about child weight was stronger for pressure to eat and food restriction practices, while food monitoring did not have any association with the predictor variables, which is consistent with the literature (Kutbi & Mosli, 2024). The study showed gender as a modifying factor for the association among obesity risk knowledge, risk perception, and child weight, while none of the predictor variables contributed to the model's significance. This finding was not consistent with other literature, which reported an association between risk perception as a predictor of BMI Z-score and an association between obesity risk knowledge and BMI Z-score (Ayine et al., 2020; Woods & Nies, 2021). However, gender as a predictor of child weight is noted in the literature (Hossain et al., 2019). Gender has been shown in the current study to modify the association among obesity risk knowledge, risk perception, and child weight status. Thus, the influence of obesity risk knowledge and risk perception on a child's weight outcome differed based on whether the parent was male or female.

Understanding the factors that influence feeding behavior and child weight outcomes means health professionals can tailor their interventions to the needs of individuals, families, and communities. Through interactions with parents and guardians of elementary school–aged children, public health practitioners and healthcare providers can identify individuals with concerns about their child's weight and engage or advise them based on available data from the study's findings, enhancing their knowledge on the health risks associated with poor feeding practices. With this understanding, parents' perception of obesity will be positively improved, and they are more likely to engage in healthy feeding practices to improve their child's weight outcomes. Also, providing evidence-based research findings at the institutional level, including key local departments of health in Northwest Ohio, pediatric clinics and hospitals, and nonprofit organizations involved in nutrition education, could help create policies that will address obesity risk perceptions, inform patient education at the clinical level, and enhance community-focused group and school-parent engagement and education to improve overall childhood obesity outcomes in the region.

Limitations and Directions for Future Research

We acknowledge our study had some limitations. The data for estimating child weight status (BMI Z-score) were collected through parental self-report on the survey questionnaire. Because the children's height and weight information was provided by parents rather than an actual measurement, there was a tendency for underreporting or overreporting those factors, which could have influenced the findings of that outcome variable in this study. Another limitation was the cross-sectional design we employed. Thus, one cannot conclude that the predictor variables (obesity risk knowledge and risk perception) were the actual cause of the outcome (feeding behavior and child weight status). The study's cross-sectional nature also implies the findings cannot be generalized to the population outside the sampling area. Most of the study participants were White, middle income, and mostly undergraduates. Thus, the findings cannot be generalized to other demographic populations. Future studies should balance the demographic representation of the study population, such as including participants from the Hispanic and Black or African American populations, who were underrepresented in this study. The significance of such a study with increased Hispanic and Black or African American participants is that it will help explore gaps in obesity risk knowledge and perception for a more tailored obesity educational intervention to improve feeding behavior and childhood obesity outcomes. We recommend that future researchers obtain data on child weight and height by direct measurement or from available medical records for a more accurate estimation of BMI to reduce bias and enhance the reliability and validity of findings. We also recommend that future studies include the other HBM constructs to understand how these may influence feeding behavior and child weight outcomes. In addition, conducting longitudinal studies to examine the predictor and outcome variables over time would help provide stronger evidence of the association among the variables in this study.

Conclusion

The current study examined the association among obesity risk knowledge, risk perception, feeding behavior, and child weight outcome, measured using the BMI Z-score. The findings show a strong association between parental risk perception or concern about their child's weight and feeding behavior, particularly their pressure to eat and food restriction practices. The association among obesity risk knowledge, risk perception, and pressure to eat practice was modified by parental level of education. The study also found that gender modified the association among obesity risk knowledge, risk perception, and child weight status. Obesity risk knowledge did not contribute to any of the model's significance. The findings from the study raise the need for childhood obesity education and intervention programs that target risk perception or individuals' perceived susceptibility, which could influence feeding behavior, including food restriction, and how much pressure parents employ to ensure their children eat healthy diets. This study adds to existing knowledge on childhood obesity and creates new insights into other strong predictors of feeding behavior among parents of elementary school–aged children in Northwest Ohio. The evidence-based findings provide data that could influence policy decisions at the institutional level, including integrating obesity risk perception education at the primary care level.

References

Abbas, N., Rouaiheb, H., Saliba, J., & El-Bikai, R. (2023). Childhood obesity: Facts and parental perceptions. *World Academy of Sciences Journal*, *5*(6), Article 38. https://doi.org/10.3892/wasj.2023.215

Ayine, P., Selvaraju, V., Venkatapoorna, C. M., & Geetha, T. (2020). Parental feeding practices in relation to maternal education and childhood obesity. *Nutrients*, *12*(4), Article 1033. https://doi.org/10.3390/nu12041033

Birch, L. L., Fisher, J. O., Grimm-Thomas, K., Markey, C. N., Sawyer, R., & Johnson, S. L. (2001). Confirmatory factor analysis of the Child Feeding Questionnaire: A measure of parental attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite*, *36*(3), 201–210. https://doi.org/10.1006/appe.2001.0398

Centers for Disease Control and Prevention. (2024, April 2). *Obesity: Childhood obesity facts*. https://www.cdc.gov/obesity/childhood-obesity-facts/childhood-obesity-facts.html#cdc_data_surveillance_section_1-many-u-s-children-have-obesity

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Ghorbani-Dehbalaei, M., Loripoor, M., & Nasirzadeh, M. (2021). The role of health beliefs and health literacy in women's health promoting behaviours based on the health belief model: A descriptive study. *BMC Women's Health*, *21*, Article 421. https://doi.org/10.1186/s12905-021-01564-2

González-Álvarez, M. A., Lázaro-Alquézar, A., & Simón-Fernández, M. B. (2020). Global trends in child obesity: Are figures converging? *International Journal of Environmental Research and Public Health*, *17*(24), Article 9252. https://doi.org/10.3390/ijerph17249252

Hagerman, C. J., Ferrer, R. A., & Persky, S. (2022). How beliefs about weight malleability and risk perceptions for obesity influence parents' information seeking and feeding. *Journal of Health Psychology*, *27*(12), 2714–2728. https://doi.org/10.1177/13591053211061412

Hossain, M. S., Siddiqee, M. H., Ferdous, S., Faruki, M., Jahan, R., Shahik, S. M., Raheem, E., & Okely, A. D. (2019). Is childhood overweight/obesity perceived as a health problem by mothers of preschool aged children in Bangladesh? A community level cross-sectional study. *International Journal of Environmental Research and Public Health*, *16*(2), Article 202. https://doi.org/10.3390/ijerph16020202

Kebede, N., Mohammed, Y., Kasaye, M. D., & Zewdie, A. (2023). Application of health belief model to assess predictors of weight management behaviour intention among civil servants in Ethiopia: A mixed method study. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, *16*, 3339–3352. https://doi.org/10.2147/DMSO.S431146

Khodaveisi, M., Azizpour, B., Jadidi, A., & Mohammadi, Y. (2021). Education based on the health belief model to improve the level of physical activity. *Physical Activity and Nutrition*, *25*(4), 17–23. https://doi.org/10.20463/pan.2021.0022

Kosova, R., Naço, A., Hajrulla, S., & Kosova, A. M. (2024). Addressing missing data in surveys and implementing imputation methods with SPSS. *International Journal of Advanced Natural Sciences and Engineering Researches*, *8*(2), 40–50. https://as-proceeding.com/index.php/ijanser/article/view/1695

Kovai, V., Chong, S., Jalaludin, B., Tang, J., Camilleri, M., Thomas, M., Fox, F., & Williams, M. (2025). Parental perceptions of child weight status and the interplay of socio-demographic factors and children's BMI in South-Western Sydney: The growing healthy kids survey, Australia. *Preventive Medicine Reports*, *54*, Article 103097. https://doi.org/10.1016/j.pmedr.2025.103097.

Kutbi, H. A., & Mosli, R. H. (2024). Maternal concern and perception about child overweight risk, maternal feeding practices, and child eating behaviors: A cross-sectional study. *PLoS ONE*, *19*(6), Article e0302557. https://doi.org/10.1371/journal.pone.0302557

Loth, K. A., Mohamed, N., Trofholz, A., Tate, A., & Berge, J. M. (2021). Associations between parental perception of- and concern about-child weight and use of specific food-related parenting practices. *Appetite*, *160*, Article 105068. https://doi.org/10.1016/j.appet.2020.105068

O'Brien, K., Agostino, J., Ciszek, K., & Douglas, K. A. (2022). Parents' perceptions of their child's weight among children in their first year of primary school: A mixed-methods analysis of an Australian cross-sectional (complete enumeration) study. *International Journal of Obes*ity, *46*, 992–1001. https://doi.org/10.1038/s41366-022-01068-5

Persky, S., Yaremych, H. E., Goldring, M. R., Ferrer, R. A., Rose, M. K., & Hollister, B. M. (2021). Investigating the efficacy of genetic, environmental, and multifactorial risk information when communicating obesity risk to parents of young children. *Annals of Behavioral Medicine*, *55*(8), 720–733. https://doi.org/10.1093/abm/kaaa103

Renales, F., Whitted, K., & Lennen, N. (2021). Assessing parental perceptions on childhood obesity: An educational intervention. *Pediatric Nursing*, *47*(1), 23–29.

Robert Wood Johnson Foundation. (2021, October 31). *Explore state data: Ohio*. https://stateofchildhoodobesity.org/state-data/?state=oh

Rosenstock, I. M. (1974). The health belief model and preventive health behavior. *Health Education Monographs*, *2*(4), 354–386. https://doi.org/10.1177/109019817400200405

Saghafi-Asl, M., Aliasgharzadeh, S., & Asghari-Jafarabadi, M. (2020). Factors influencing weight management behavior among college students: An application of the health belief model. *PloS One*, *15*(2), Article e0228058. https://doi.org/10.1371/journal.pone.0228058

Straughan, P. T., & Xu, C. (2022). Parents' knowledge, attitudes, and practices of childhood obesity in Singapore. *SAGE Open*, *12*(4). https://doi.org/10.1177/21582440221144436

Styk, W., Wojtowicz, E., & Zmorzynski, S. (2022). Reliable knowledge about obesity risk, rather than personality, is associated with positive beliefs towards obese people: Investigating attitudes and beliefs about obesity, and validating the Polish versions of ATOP, BAOP, and ORK-10 Scales. *International Journal of Environmental Research and Public Health*, *19*(22), Article 14977. https://doi.org/10.3390/ijerph192214977

Swift, J. A., Glazebrook, C., & Macdonald, I. (2006). Validation of a brief, reliable scale to measure knowledge about the health risks associated with obesity. *International Journal of Obesity*, *30*(4), 661–668. https://doi.org/10.1038/sj.ijo.0803165

Woods, T., & Nies, M. A. (2021). Health belief model factors as predictors of parental misclassification of the weight of the preschool child. *PloS One*, *16*(9), Article e0252981. https://doi.org/10.1371/journal.pone.0252981

World Health Organization. (2025, May 7). *Obesity and overweight*. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

The *Journal of Social, Behavioral, & Health Sciences* (*JSBHS)*, cosponsored by the College of Social and Behavioral Health, College of Allied Health, and College of Health Sciences and Public Policy, is a peer-reviewed, online, interdisciplinary journal focusing on theoretically based research that addresses contemporary national and international issues. *JSBHS* articles include peer-reviewed research reports, brief reports, comprehensive literature reviews, book reviews, and student research.