



RESEARCH ARTICLE

PARENTAL FEEDING STYLE ON EATING BEHAVIOR OF CHILDREN LIVING IN RURAL AREAS OF CHANG ZHI CITY

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ARTICLE INFO

Article History:

Received 14th December, 2023
Received in revised form
20th January, 2024
Accepted 24th February, 2024
Published online 30th March, 2024

Key words:

Parental Feeding style, Eating Behavior,
Eating Habits.

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ABSTRACT

Childhood nutrition and eating behaviors have become increasingly significant topics of concern due to their profound impact on long-term health and well-being. In the context of this concern, this study delved into the influence of parental feeding style on the eating behaviors of children residing in the rural areas of Changzhi City, situated in the Shanxi Province of China, exploring the dynamic interplay between parental practices and children's dietary habits to shed light on a crucial aspect of childhood nutrition. This correlation research study investigated the relationship between parental feeding style and children's eating behaviors using a correlational research design and involving a sample of 200 parents. The study specifically sought to explore potential associations between various parental feeding styles and specific eating behaviors exhibited by children. Data was collected through structured surveys administered to parents of children aged 3–12 years. The survey assessed parental feeding styles and their correlation with children's eating behaviors, including lack of appetite, picky eating, poor eating habits, parents' inappropriate expectations, fear of eating, and potential illness. The results of the analysis indicate that there is no significant correlation between parental feeding style and children's eating behaviors for all categories studied. The Pearson's χ^2 values for lack of appetite (0.50, $p = 0.92$), picky eating (0.72, $p = 0.88$), poor eating habits (2.08, $p = 0.57$), parents' inappropriate expectations (0.76, $p = 0.86$), fear of eating (0.95, $p = 0.81$), and potential illness (1.91, $p = 0.65$) all yielded p -values that are not statistically significant. These findings suggest that in this sample of 200 parents, there is no strong evidence to support a significant relationship between parental feeding style and the identified eating behaviors in children. The results emphasize the need for further research to explore additional factors that may contribute to children's eating behaviors, beyond the scope of parental feeding style.

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Citation: Hou Mei Mei. 2024. "Parental Feeding Style on Eating Behavior of Children Living in Rural Areas of Chang Zhi City". International Journal of Current Research, 16, (03), 27415-27422.

INTRODUCTION

In the agricultural heartlands of Changzhi City, where subsistence farming dictates the cadence of daily life, a representative case study emerged—a child's dietary regimen, reflective of the broader rural community, is a microcosm of the intersection between entrenched dietary customs and the realities of economic constraint. This dichotomy yields a nutritional schema starkly divergent from the diverse alimentary landscape accessible to urban dwellers. The saga of Changzhi's youngest residents intersects with macroscopic public health concerns, influencing not only individual growth curves but also larger educational and economic indices. Nutritional insufficiencies resonate throughout the community, materializing in overtaxed healthcare facilities and the countenances of parents confronting the complexities of child nutrition against a backdrop of scarcity.

This investigation wanted to dissect the intricate matrix of sociocultural, economic, and environmental determinants influencing pediatric dietary practices in rural contexts. This inquiry transcended traditional nutritional studies by using a multifaceted lens that encompassed behavioral economics, cultural anthropology, and developmental nutrition. The research traversed an analytical path less frequented, examining the symbiosis of traditional rural dietary mores with contemporary nutritional imperatives. This innovative angle is predicated on the hypothesis that parental feeding behaviors, when informed by anachronistic practices, may impede the adoption of evidence-based nutritional strategies, thereby perpetuating cycles of malnutrition.

Background of the study: The family environment, particularly parental feeding styles, plays a crucial role in shaping children's eating behaviors and their health outcomes. The COVID-19 pandemic has notably affected family dynamics,

altering routines and exacerbating health inequalities. Some families adapted healthily by leveraging resilience, while others, facing economic and social instability, struggled to maintain positive dietary behaviors in their children. The literature identifies the significance of various family members in influencing children's diets, with grandparents and fathers playing crucial roles. Interventions aimed at improving child nutrition need to focus not only on mothers but on the entire family unit. The methodologies used in dietary assessment and intervention studies have been critiqued, with calls for greater alignment between objectives and assessment tools to ensure interventions effectively target and measure the desired outcomes.

Contextual sensitivity during mealtimes has been highlighted as fluctuating, affected by both the setting and children's behaviors. Children's mealtime experiences, whether perceived as fussy or otherwise, are not solely dependent on parental control but also on the children's own responses to food, which are influenced by a variety of sensory and emotional factors. The broader societal context, including cultural norms and socioeconomic status, plays a pivotal role. Cultural competency in nutritional guidance is essential, as dietary practices and beliefs vary significantly across communities. Additionally, economic constraints and the marketing environment, such as the promotion of unhealthy food options, present challenges to maintaining healthy eating habits.

Collectively, the body of literature suggests that addressing children's nutritional challenges and preventing childhood obesity require multifaceted strategies. These strategies must consider not only the direct influence of parental feeding styles but also the broader ecological system, including cultural, economic, and societal factors. The ultimate goal is to support families in creating a conducive environment that fosters healthy eating behaviors in children.

Statement of the problem: The purpose of the study was to determine the influence of parental feeding styles on children's eating behavior. Specifically, it sought to answer the following questions:

- What is the profile of the respondents in terms of:
 - parent's age
 - parent's sex
 - parent's educational attainment
 - parent's occupation
 - child's academic grade
 - child's sex
- What are the respondents' parental feeding styles?
- Is there a significant difference in the parental feeding style when grouped according to the demographic profile?
- What is the eating behavior of the respondents' children?
- Is there a significant difference in the children's eating behavior when grouped according to the demographic profile?
- Is there a significant relationship between parental feeding style and children's eating behavior?

Significance of the study: The significance of this study is in its potential to shed light on a crucial and often understudied aspect of child development and well-being. In particular, the findings of this study can offer valuable insights to the following:

Nursing Service: The study's findings can be used to operationalize a new standard of pediatric care by developing assessment tools for nurses to evaluate parental feeding styles effectively. This will lead to the implementation of a nutritional protocol, complete with decision-making guidelines, enabling personalized counseling for families. The objective of this new standard would be to reduce pediatric malnutrition in rural areas by at least 15% within five years, leveraging the nursing workforce as pivotal agents in ongoing monitoring and evaluation efforts.

Nursing Education: The study's findings can enrich the curriculum with practical insights. By elucidating the link between parental feeding styles and children's eating behavior, the research equips future nurses with valuable knowledge. Integrating these findings into education prepares nurses to offer informed advice, ensuring optimal pediatric care.

Nursing Research: The study holds significance for nursing research by exploring a vital area with potential to advance the field's understanding of it. Investigating the connection between parental feeding styles and children's eating behavior contributes to the body of nursing knowledge. This research can guide future studies and interventions, fostering evidence-based practices in pediatric care.

Scope and delimitation: Several limitations are acknowledged in this study. First, the study's scope was confined to rural areas within Changzhi City, potentially limiting the generalizability of the investigation's findings to broader contexts. Second, due to linguistic barriers and literacy challenges among some parents, a surrogate survey method was adopted, possibly introducing minor inaccuracies in responses. Additionally, the study's timeframe was restricted to a two-month period, which might not fully capture seasonal variations or long-term dietary trends. Furthermore, while efforts were made to include diverse participants, exclusion criteria such as severe physical or mental illness might have inadvertently excluded some important cases. Lastly, the study did not address potential cultural or socioeconomic factors that might influence parental feeding styles and children's eating behavior.

Theoretical framework: This study used Nola Pender's Health Promotion Model (HPM) as the theoretical underpinning to explore complex dynamics between parental feeding styles and the resultant eating behaviors of children within the rural context of Chang Zhi City. The HPM, which operates on the premise that health is not merely the absence of disease but a proactive pursuit of well-being, offers a robust framework for analyzing how personal and behavioral factors contribute to health outcomes. In this model, individual characteristics and experiences encompassing biological, psychological, and sociocultural dimensions are considered to influence the behaviors of parents in the domain of child-feeding practices. The study assessed these characteristics, which include knowledge about nutrition, prior experiences with food, and

access to nutritional resources, as they pertain to the rural lifestyles of Chang Zhi residents. Behavior-specific cognitions and effect play a central role in Pender's model. The study explored parents' beliefs about the importance of nutrition in child development, their perceived efficacy in influencing their children's eating habits, and their attitudes towards different foods and dietary practices. It also considered the perceived barriers to and benefits of adopting healthy feeding practices within the constraints of a rural economy. The behavioral outcome, which is the crux of the HPM, was a key focus of the study. It sought to observe and measure the extent to which parents in Chang Zhi adopt health-promoting feeding styles that are characterized by diversity, balance, and nutritional adequacy. The expected result is a series of evidence-based, actionable strategies aimed at improving children's nutrition through enhanced parental guidance and support. Pender's HPM facilitates the development of interventions that are not only preventative but also educational, empowering parents with the knowledge and skills necessary to make informed decisions about their children's diets. Such interventions, derived from the theoretical framework, may include structured educational sessions, community-based support groups, and individualized counseling, all designed to resonate with the cultural and socio-economic realities of rural Chang Zhi City.

METHODOLOGY

The research methodology and methods show how the researcher carried out the study as presented in the chapter.

Research locale: The research was conducted within the precincts of Dianshang Town, situated in Huguan County, Changzi City, China. The focus was centered on Xiao Long Feng and Dian Shang Center kindergartens. These educational institutions have been active since 2002 and have played a significant role in shaping the educational landscape of the region.

Sample and sampling technique: The study utilized purposive sampling to select participants from Dianshang Town, Huguan County. Specifically, parents of children in preschool classes from two kindergartens within Dianshang Town were chosen as the research subjects. The following inclusion and exclusion criteria were considered:

Inclusion Criteria: Families must be residents of Dianshang Town or surrounding rural areas to ensure the study reflects the local context.

- Children within a specific age range, such as 2–6 years, as this period is critical for establishing eating behaviors.
- At least one primary caregiver (parent or legal guardian) must be willing to participate in the study and provide information about their feeding styles.
- There must be a willingness to provide informed consent and to comply with the study requirements throughout the study period.

Exclusion Criteria

- Children with medical conditions or developmental disorders that significantly affect eating behavior, such as

metabolic diseases, gastrointestinal disorders, or Autism Spectrum Disorders.

- Families currently adhering to medically prescribed special diets that would influence normal eating patterns.
- Families who have not lived in the rural area for a sufficient period, such as less than one year, may not provide an accurate reflection of local feeding styles.
- Children under the care of institutions or individuals other than parents or legal guardians, unless the study aims to include these groups.

The final sample consisted of 185 parents of kindergarten children based on the moderate effect size computation as exhibited in the literature. The determination of the sample size followed a meticulous calculation based on specified parameters: $\alpha = 0.05$; $\beta = 0.20$; $r = 0.20$.

Data gathering procedure: The study followed a well-defined data collection methodology, which was systematically organized and rigorously executed to ensure the reliability and accuracy of the data gathered throughout the research:

Phase 1: Preparatory Work and Ethical Clearance

The research commenced with the formulation of a robust study protocol, including the development of research instruments and the determination of study variables. The protocol underwent a rigorous ethical review by the Far Eastern University Ethics Review Committee. Only upon receipt of the committee's approval could the study advance.

Phase 2: Rigorous Participant Screening

Potential participants were identified through a meticulous screening process. The selection adhered to specific inclusion and exclusion criteria, focusing on kindergarten children from Dianshang Town, Huguan County, Changzhi City.

Phase 3: Informed Consent and Participant Education

In this critical phase, the researcher engaged with potential participants and their guardians to explain the study's purpose, procedures, and potential risks and benefits. This dialogue took place in person, supplemented by informational pamphlets and telephone follow-ups.

Phase 4: Systematic Data Collection

Data was collected via structured questionnaires administered to parents and kindergarten children. The Caregiver's Feeding Style Questionnaire (CFSQ) was used to characterize parental feeding styles, while the Identification and Management of Feeding Difficulties (IMFeD) assessed children's eating behaviors. The data collection was conducted in a controlled setting, ensuring privacy and minimizing distractions.

Phase 5: Data Verification and Analysis

Collected data underwent a verification process to confirm its accuracy and readiness for analysis. Statistical analyses were then performed by a team of qualified statisticians using state-of-the-art statistical software.

Phase 6: Post-Data Collection Follow-up

Upon completing the data analysis, follow-up sessions were held with participants. These sessions served to communicate findings and to provide an opportunity for the participants to give feedback on the research process. This feedback was used to refine future research methodologies and to inform the dissemination of results to relevant stakeholders.

Statistical analysis: The researcher employed the Statistical Package for the Social Sciences (SPSS) software for data analysis, ensuring the accuracy and efficiency of the analytical process. The following statistical test was used according to the research problem:

Research Problem	Statistical Technique
Problem 1	Frequency and Percentage
Problem 2	Frequency and Percentage
Problem 3	Chi-Square Test for Independence
Problem 4	Frequency and Percentage
Problem 5	Chi-Square Test for Independence
Problem 6	Pearson Chi-Square

RESULTS

This chapter contains the descriptive statistics of the respondents, summary of their profile, and inferential statistics results.

Profile of the Respondents

Table 1. Demographic Profile of the Respondents (n = 200)

Profile	Frequency	Percentage (%)
Sex		
Male	68	34.00
Female	132	66.00
Age		
25–30 years old	24	12.00
31–35 years old	82	42.00
36–40 years old	64	32.00
Over 40 years old	30	15.00
Highest Educational Attainment		
Illiterate/Semi-illiterate	78	39.00
Primary School	60	30.00
Middle School	54	27.00
High School	6	3.00
College	2	1.00
Child's Academic Grade		
Primary Class (n = 60)	60	30.00
Middle Class (n = 76)	76	38.00
Top Class (n = 64)	64	32.00
Child's Sex		
Male	100	50.00
Female	100	50.00

Table 1 presents a comprehensive overview of the demographic characteristics of the respondents, who were divided by sex, with 68 individuals (34.00%) being male and 132 individuals (66.00%) female. This segmentation provides a gender distribution that is pivotal for analyzing potential variations in responses based on sex. The age distribution of the respondents is further detailed. Among the age groups considered, 24 individuals (12.00%) fell within the 25–30-year-old range, 82 individuals (42.00%) were 31–35 years old, 64 individuals (32.00%) were 36–40 years old, and 30 individuals (15.00%) were above 40 years old. This breakdown showcases the diverse age composition of the sample.

The educational background of the study's respondents is carefully detailed, revealing a significant proportion with limited formal education. Specifically, 78 individuals, representing 39.00% of the sample, were identified as having little to no formal education, classed as illiterate or semi-illiterate. This group is followed by 60 individuals (30.00%) who completed primary education, 54 individuals (27.00%) who reached middle school level, 6 individuals (3.00%) who completed high school, and 2 individuals (1.00%) who obtained a college degree. This distribution provides an insightful perspective on the varied educational levels of the participants involved in the study. The academic grade of the participants' children is elucidated. Among the respondents, 60 participants (30.00%) had children in the primary class, 76 participants (38.00%) had children in the middle class, and 64 participants (32.00%) had children in the top class. This categorization sheds light on the distribution of respondents based on their children's academic levels. Lastly, the sex of the participants' children is highlighted. The data shows an equal distribution, with 100 children (50.00%) being male and 100 children (50.00%) being female. This parity underscores the balanced representation of both sexes within the sample. The demographic profile of the study participants and the contextual factors in the rural area of Changzhi hold several implications for understanding the dynamics of parental feeding styles and their impact on children's eating behavior.

Parental Feeding Style

Table 2. Parental Feeding Style

Category	Frequency	Percentage (%)
Authoritarian	84	37.80
Authoritative	18	8.10
Indulgent	66	29.70
Uninvolved	32	14.40

Table 2 illustrates the distribution of parental feeding styles among the participants in the study. The CFSQ evaluates the levels of parental “demands” and “responses” concerning their children's feeding behaviors (Shloim & Edelson, 2015). Feeding styles are classified into four distinct types: authoritative (high demand, high response), authoritarian (high demand, low response), permissive (low demand, high response), and neglectful (low demand, low response). In this context, “demand” refers to the extent of parental control and expectations related to children's dietary choices, while “response” pertains to parents' reactions and acceptance of their child's nutritional needs during feeding (Shloim & Edelson, 2015). The outcomes of this study reveal that among the four feeding styles, the autocratic feeding style obtained the highest scores, thus emerging as the predominant approach to feeding practices. Research consistently indicates that the authoritative feeding style has a positive impact on children's overall development, whereas authoritarian, permissive, and neglectful feeding styles have been linked to adverse effects on children's growth (Sally, 2004; Birch, 2001). Consequently, it is evident that differences exist between findings from domestic and international research endeavors. The outcomes from domestic studies echo those from other economically challenged areas, indicating similarities in feeding practices in rural settings like Changzhi City. According to Milano, Chatoor, and Kerzner (2019), early detection and appropriate management of feeding disorders are crucial, and parental feeding styles are a key factor in this similarity.

Authoritarian feeding practices, which are the most prevalent in the table, have been associated with mealtime behavior problems and greater parental stress, especially in children with specific health conditions like cystic fibrosis as reported by Maliszewski et al. (2023). This could indicate that the high frequency of authoritarian feeding styles may be contributing to increased stress and potentially to behavioral problems at mealtimes. Haines et al. (2019) and Vollmer (2019) both highlight the positive impacts of authoritative and positive parental feeding on children's eating habits. However, the table indicates that authoritative parents are less common at only 8.10%, which suggests that there may be a missed opportunity for promoting healthier eating behaviors among children. Vollmer's research also suggests that indulgent or authoritarian styles may lead to a less healthy preference in children, which is concerning given that these two categories make up a significant percentage (67.5%) of the parental feeding styles reported. The indulgent feeding style, which is relatively high at 29.70%, has been linked by Hughes et al. (2021) to increased BMI in children, further indicating potential health risks associated with this style. Kininmonth et al. (2023) also suggest that parents may adapt their feeding style based on their child's appetitive traits, which could explain the variability in feeding styles observed. The uninvolved feeding style is less common than the others but still represents a significant proportion at 14.40%. Given that Baxter et al. (2022) call for more research in the context of household food insecurity and disadvantage, this uninvolved style may be of particular interest in such contexts.

Difference in Parental Feeding Styles

Table 3. Difference in Parental Feeding Style based on Demographic Profile

Category	χ^2 Value	<i>p</i> -Value	Decision/Interpretation
Sex	0.12	0.94	Not Significant/Accept H_0
Age	5.81	0.06	Not Significant/Accept H_0
Highest Educational Attainment	4.99	0.08	Not Significant/Accept H_0
Child's Academic Grade	1.27	0.53	Not Significant/Accept H_0
Child's sex	1.09	0.58	Not Significant/Accept H_0

Table 3 presents a statistical analysis that compares parental feeding styles across various demographic categories. The table is structured into four columns: Category, χ^2 Value (Chi-square Value), *p*-value, and Decision/Interpretation. From the data presented, it is interpreted that there is no statistically significant difference in parental feeding styles when comparing the sex of the parent, the age of the parent, the highest educational attainment of the parent, the academic grade of the child, and the sex of the child. In other words, the variations in parental feeding styles are not influenced by these demographic factors within the sample population studied. Interpreting these findings in light of the referenced literature highlights several implications. Milano et al. (2019) underscore the need for early identification and tailored management of feeding disorders, a process not evidently influenced by the demographic factors studied here. Maliszewski et al. (2023) report that authoritarian parents face greater challenges in managing children's diets under stress, suggesting that the absence of demographic influence on feeding style may mean that such stressors and resultant mealtime behavior problems could be widespread, not isolated

to specific groups. Haines et al. (2019) emphasize the nurturing aspects of healthy eating, which involve inclusive, pleasure-associated feeding practices. Since no demographic differences were found, these nurturing practices may need to be promoted universally among all parents, regardless of their background. Vollmer (2019), Penilla et al. (2021), and Al-buobayd et al. (2023) highlight the influence of parental feeding styles on children's food preferences and intake, suggesting that interventions to promote healthy preferences should not discriminate based on demographic factors. Hughes et al. (2021) and Kininmonth et al. (2023) link specific parental feeding styles to child health outcomes, such as BMI and appetite responsiveness, indicating that irrespective of demographics, a focus on modifying feeding styles could benefit all children. Almaatani et al. (2022) suggest that parental stress affects feeding styles, so addressing stress in parents might need a broad, non-discriminatory approach. In conclusion, the universal application of the findings across demographic categories aligns with the literature's call for broad, inclusive interventions in feeding practices to support healthy dietary behaviors in children.

Children's Eating Behavior

Table 4. Children's Eating Behavior

Category	Frequency	Percentage (%)
Lack of Appetite	90	45.00
Picky Eating	152	76.00
Poor Eating Habits	134	67.00
Parents Inappropriate Expectations	74	37.00
Fear of Eating	26	13.00
Potential Illness	10	5.00

Table 4 provides an overview of the various categories of children's eating behavior, presented in terms of frequency and corresponding percentages. "Picky Eating" being the most frequent challenge at 76% may reflect the complex relationship between caregiver behaviors and childhood weight outcomes. Yuan et al. (2021) found a correlation between caregivers' concerns about weight and children's responsiveness to food. This suggests that picky eating could be related to caregivers' feeding styles and expectations, possibly influenced by their concerns about children's weight. "Poor Eating Habits" is also prevalent at 67%. The literature review indicates that familial and environmental factors heavily influence these habits. Tan et al. (2019) and Mobley et al. (2022) discussed the role of grandparents and fathers, respectively, in influencing children's eating habits. This suggests that the broader family environment, not just parents, contributes to poor eating habits in children. "Parents' Inappropriate Expectations," noted in 37% of cases, directly ties to the findings of Rodgers et al. (2023), who discussed how external stressors like the COVID-19 pandemic can lead parents to adopt nonresponsive feeding practices. This category might also connect to Hevesi et al. (2024), who shed light on the challenges faced by food-insecure households, where inappropriate expectations might arise from a disparity between parents' desires to provide nutritious food and the reality of their financial means. "Lack of Appetite" and "Fear of Eating" are less frequent but still significant, with 45% and 13%, respectively. These could relate to the study by Ares et al. (2020), which discussed disruptions to children's daily routines and eating behaviors due to pandemic-related social distancing measures, potentially leading to increased stress and anxiety around eating.

“Potential Illness” at 5% might indicate that while health concerns are a factor in children's eating behavior, they are not as prominent as behavioral issues. However, it is essential to address these concerns, with Nowicka et al. (2022) highlighting the pandemic's impact on families with children with overweight or obesity issues.

Difference in Children's Eating Behavior

Table 5. Difference in Children's Eating Behavior Based on Demographic Profile

Category	χ^2 Value	p-Value	Decision/Interpretation
Sex	1.10	0.57	Not Significant/Accept H_0
Age	1.82	0.40	Not Significant/Accept H_0
Highest Educational Attainment	3.14	0.21	Not Significant/Accept H_0
Child's Academic Grade	2.59	0.27	Not Significant/Accept H_0
Child's sex	1.75	0.42	Not Significant/Accept H_0

Table 5 provides a statistical examination of the relationship between various demographic factors and children's eating behavior. In light of the extensive literature review on the various influences on children's eating behaviors, these findings from table 5 do not stand in opposition to the research but rather suggest that the demographic factors examined may not capture the complexities of eating behaviors. The literature underscores a broad range of influences—from psychological aspects of caregivers to socioeconomic and cultural contexts—that shape children's dietary patterns in more profound ways than demographic variables might suggest. For instance, Yuan et al. (2021) and Rodgers et al. (2023) elucidate the role of caregiver perceptions and mental states in influencing a child's approach to food—aspects that are not confined to demographic categories like age or sex. Hevesi et al. (2024) and Peles et al. (2021) point to the significant impact of socioeconomic status and cultural beliefs on food choices and availability, which extend beyond simple demographic distinctions. Moreover, Quinn et al. (2021) emphasize the importance of family dynamics and the involvement of various caregivers in feeding, which again may not be directly linked to the child's demographic details. The literature also highlights that interventions to mitigate eating behavior should be multilayered and culturally sensitive. Tan et al. (2019) and Mobley et al. (2022) indicate the positive influence of educating caregivers and involving them in dietary interventions, which is a factor that demographic variables alone may not fully address. Therefore, while the statistical analysis in table 5 reveals no significant demographic differences in children's eating behavior, the literature suggests that these challenges are deeply embedded in a complex interplay of social, economic, familial, and cultural factors.

Relationship between Parental Feeding Style and Children's Eating behaviour

Table 6. Relationship Between Parental Feeding Style and Children's Eating behavior

Children Eating Behavior	Pearson χ^2	p-Value
Lack of Appetite	0.50	0.92
Picky Eating	0.72	0.88
Poor Eating Habits	2.08	0.57
Parents Inappropriate Expectations	0.76	0.86
Fear of Eating	0.95	0.81
Potential Illness	1.91	0.65

Table 6 provides a comprehensive overview of the relationship between parental feeding style and various dimensions of children's eating behavior. Through the lens of HPM, these findings can be interpreted to suggest that parental feeding styles might not be the primary or sole influencers of children's eating behaviors. The HPM emphasizes the role of individual characteristics and experiences, personal beliefs about health, and perceived self-efficacy in health-promoting behaviors. Given that none of the chi-square results indicated a significant association, it might be inferred that other factors, as suggested by the HPM, such as children's personal biological makeup, psychological factors, and prior related behaviors could be more influential in shaping eating behaviors. The HPM also considers the importance of perceived barriers to action, interpersonal influences, and situational factors in adopting health-promoting behaviors. The lack of significant findings in this analysis may point to the complexity of eating behaviors and the potential that barriers outside of parental control, such as social norms or access to healthy food options, could have a more substantial impact. Moreover, since eating behaviors are often established early in life and can be resistant to change, the role of intrinsic motivation and self-initiated regulation of behavior might be areas to explore further in the context of promoting healthy eating habits in children. In conclusion, while parental feeding styles are important, the results seen in table 6 suggest that they do not significantly correlate with the eating behavior assessed. Interventions to improve children's eating behaviors might be more effective if they incorporate broader aspects of the HPM, such as enhancing individual competencies, addressing perceived barriers to healthy eating, and strengthening the children's belief in their ability to control and positively influence their eating behaviors.

REFERENCES

- Al-buobayd, A. A., Al-Otaibi, H. H., & Farag, H. A. S. (2023). Association of maternal feeding style with fruit and vegetable consumption in Saudi preschoolers: A nationwide cross-sectional study. *Nutrients*, *15*(22), 4735. <https://doi.org/10.3390/nu15224735>.
- Almaatani, D., Zurbau, A., Khoshnevisan, F., Bandsma, R., Khan, T. A., Sievenpiper, J. L., & Van Den Heuvel, M. (2022). The association between parents' stress and parental feeding practices and feeding styles: Systematic review and meta-analysis of observational studies. *Maternal and Child Nutrition*. <https://doi.org/10.1111/mcn.13448>.
- Ares, G., Bove, I., Vidal, L., Brunet, G., Fuletti, D., Arroyo, Á., & Blanc, M. V. (2020). The experience of social distancing for families with children and adolescents during the coronavirus (COVID-19) pandemic in Uruguay: Difficulties and opportunities. *Children and Youth Services Review*, *119*, 105906. <https://doi.org/10.1016/j.chilyouth.2020.105906>.
- Bahorski, J., Childs, G., Loan, L. A., Azuero, A., Allison, D., Morrison, S., Chandler-Laney, P. C., Hodges, E. A., & Rice, M. (2019). Self-efficacy, infant feeding practices, and infant weight gain: An integrative review. *Journal of Child Health Care*, *23*(3), 446–462. <https://doi.org/10.1177/1367493518788466>.
- Baxter, K. A., Nambiar, S., So, T. H. J., Gallegos, D., & Byrne, R. (2022). Parental feeding practices in families experiencing food insecurity: A scoping review. *International Journal of Environmental Research and*

- Public Health*, 19(9), [Article 5604]. <https://doi.org/10.3390/ijerph19095604>
- Bellows, L. L., Lou, Y., Nelson, R., Reyes, L. I., Brown, R. C., Mena, N. Z., & Boles, R. E. (2022). A Narrative Review of Dietary Assessment Tools for Preschool-Aged Children in the Home Environment. *Nutrients*, 14(22), 4793. <https://doi.org/10.3390/nu14224793>
- Bentley, M. E., & Nulty, A. K. (2020). When does it all begin: What, when, and how young children are fed. *Nestle Nutrition Institute Workshop Series*. <https://doi.org/10.1159/000503353>
- Cummings, J. R., Lipsky, L. M., Faith, M. S., & Nansel, T. R. (2024). Associations of appetitive traits and parental feeding style with diet quality during early childhood. *Journal of the Academy of Nutrition and Dietetics*. <https://doi.org/10.1016/j.jand.2024.02.004>
- Dastgerdzad, H., Dombrowski, R. D., Bode, B., Knoff, K. A. G., Kulik, N., Mallare, J., Kaur, R., & Dillaway, H. (2023). Community solutions to increase the healthfulness of grocery stores: perspectives of immigrant parents. *International Journal of Environmental Research and Public Health*, 20(15), 6536. <https://doi.org/10.3390/ijerph20156536>
- Eow, S. Y., Gan, W. Y., Lim, P. Y., Awang, H., & Shariff, Z. M. (2021). Parental feeding practices and child-related factors are associated with overweight and obesity in children and adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 51(10), 3506–3520. <https://doi.org/10.1007/s10803-021-05247-7>
- Ercan, N., & Tel Adıgüzel, K. (2021). Effect of Early Childhood Cow's Milk Elimination Diet on Eating Behaviors, Nutrition, and Growth Status at age 2–6 years. *Journal of Human Nutrition and Dietetics*, 34(5), 869–878. <https://doi.org/10.1111/jhn.12914>
- Fogel, A., Fries, L. R., McCrickerd, K., Goh, A. T., Chan, M. J., Toh, J. Y., Chong, Y. S., Tan, K. H., Yap, F., Shek, L. P. C., Meaney, M. J., Broekman, B. F. P., Lee, Y. S., Godfrey, K. M., Chong, M. F. F., & Forde, C. (2019). Prospective associations between parental feeding practices and children's oral processing behaviours. *Maternal and Child Nutrition*. <https://doi.org/10.1111/mcn.12635>
- Folkvord, F. (2019). Systematically testing the effects of promotion techniques on children's fruit and vegetables intake on the long term: a protocol study of a multicenter randomized controlled trial. *BMC Public Health*, 19, 7952. <https://doi.org/10.1186/s12889-019-7952-1>
- Haines, J., Haycraft, E., Lytle, L. A., Nicklaus, S., Kok, F. J., Merdji, M., Fisberg, M., Moreno, L. A., Goulet, O., & Hughes, S. O. (2019). Nurturing children's healthy eating: Position statement. *Appetite*, 137, 124–133. <https://doi.org/10.1016/j.appet.2019.02.007>
- Hevesi, R., Downey, M. R., & Harvey, K. (2024). Living in food insecurity: A qualitative study exploring parents' food parenting practices and their perceptions of the impact of food insecurity on their children's eating. *Appetite*, 168, 107204. <https://doi.org/10.1016/j.appet.2024.107204>
- Hughes, S. O., Power, T. G., O'Connor, T. M., Fisher, J. O., Micheli, N., & Papaioannou, M. A. (2021). Maternal feeding style and child weight status among Hispanic families with low-income levels: a longitudinal study of the direction of effects. *International Journal of Behavioral Nutrition and Physical Activity*, 18(1), [Article 94]. <https://doi.org/10.1186/s12966-021-01094-y>
- Inhulsen, M. B. M. R., Mérelle, S. Y. M., & Renders, C. M. (2017). Parental feeding styles, young children's fruit, vegetable, water and sugar-sweetened beverage consumption, and the moderating role of maternal education and ethnic background. *Public Health Nutrition*. <https://doi.org/10.1017/s1368980017001409>
- Kininmonth, A. R., Herle, M., Tommerup, K., Haycraft, E., Farrow, C., Croker, H., Pickard, A., Edwards, K., Blissett, J., & Llewellyn, C. (2023). Parental feeding practices as a response to child appetitive traits in toddlerhood and early childhood: a discordant twin analysis of the Gemini cohort. *The International Journal of Behavioral Nutrition and Physical Activity*, 20(1), [Article 4402]. <https://doi.org/10.1186/s12966-023-01440-2>
- Maliszewski, G., High, R., Lee, J., & Deschamp, A. R. (2023). Parental feeding style, parenting stress, and child mealtime behaviors in cystic fibrosis. *Journal of Pediatric Psychology*, 48(3), [Article jsad076]. <https://doi.org/10.1093/jpepsy/jsad076>
- Milano, K., Chatoor, I., & Kerzner, B. (2019). A functional approach to feeding difficulties in children. *Current Gastroenterology Reports*, 21(11), [Article 71]. <https://doi.org/10.1007/s11894-019-0719-0>
- Mobley, A. R., Gans, K. M., Adamsons, K., & Huedo-Medina, T. B. (2022). Feasibility, Acceptability, and Preliminary Outcomes of a Father-Focused Childhood Obesity Prevention Program for Low-Income Families with Preschool-Age Children. *Childhood Obesity*, 18(5), 308–318. <https://doi.org/10.1089/chi.2021.0225>
- Nowicka, P., Ek, A., Jurca-Simina, I. E., Bouzas, C., Argelich, E., Nordin, K., García, S., Vasquez Barquero, M. Y., Hoffer, U., Reijts Richards, H., Tur, J. A., Chirita-Emandi, A., & Eli, K. (2022). Explaining the complex impact of the Covid-19 pandemic on children with overweight and obesity: a comparative ecological analysis of parents' perceptions in three countries. *BMC Public Health*, 22, 13351. <https://doi.org/10.1186/s12889-022-13351-1>
- Peles, C., Shloim, N., & Rudolf, M. (2021). "Over-preoccupation with healthy food is perceived as worship of the body": Food, culture and beliefs in Ultra-Orthodox Jewish families. *Appetite*, 164, 105621. <https://doi.org/10.1016/j.appet.2021.105621>
- Penilla, C., Tschann, J. M., Pasch, L. A., Flores, E., Deardorff, J., Martinez, S. M., Butte, N. F., & Greenspan, L. C. (2021). Style of meal service and feeding practices among Mexican American fathers and mothers: An analysis of video-recorded children's evening mealtime at home. *Appetite*. <https://doi.org/10.1016/j.appet.2021.105851>
- Quinn, M., Herty, L., Weeks, H. M., Kwan, J., Haines, J., & Bauer, K. W. (2021). Low-income mothers' perspectives on the involvement of family members in child feeding. *Appetite*, 165, 105683. <https://doi.org/10.1016/j.appet.2021.105683>
- Rodgers, R. F., Sereno, I., & Zimmerman, E. (2023). Maternal mood, body image, and eating habits predict changes in feeding practices during the COVID-19 pandemic. *Appetite*, 178, 106576. <https://doi.org/10.1016/j.appet.2023.106576>
- Stifter, C. A., & Moding, K. J. (2019). Temperament in obesity-related research: concepts, challenges, and considerations for future research. *Appetite*, 140, 10–18. <https://doi.org/10.1016/j.appet.2019.05.039>
- Tan, B. Q. M., Hee, J. M., Yow, K. S., Sim, X., Asano, M., & Chong, M. F. (2019). Feeding-Related Knowledge,

- Attitudes, and Practices among Grandparents in Singapore. *Nutrients*, 11(7), 1696. <https://doi.org/10.3390/nu11071696>.
- Tournier, C., Bernad, C., Madrelle, J., Delarue, J., Cuvelier, G., Schwartz, C., & Nicklaus, S. (2020). Fostering infant food texture acceptance: A pilot intervention promoting food texture introduction between 8 and 15 months. *Appetite*, 151, 104989. <https://doi.org/10.1016/j.appet.2020.104989>.
- van Vliet, M. S., Mesman, J., Schultink, J. M., Vereijken, C. M. J. L., Martens, V. E. G., & van der Veek, S. M. C. (2022). Maternal sensitivity during mealtime and free play: Differences and explanatory factors. *Infancy*, 27(4), 621–639. <https://doi.org/10.1111/inf.12465>.
- Venkatesh, S., & DeJesus, J. M. (2021). Studying Children's Eating at Home: Using Synchronous Videoconference Sessions to Adapt to COVID-19 and Beyond. *Frontiers in Psychology*, 12, 703373. <https://doi.org/10.3389/fpsyg.2021.703373>.
- Vollmer, R. L. (2019). Parental feeding style changes the relationships between children's food preferences and food parenting practices: The case for comprehensive food parenting interventions by pediatric healthcare professionals. *Journal for Specialists in Pediatric Nursing*, 24(3), [Article e12230]. <https://doi.org/10.1111/jspn.12230>.
- Wen, J., Tao, Y., Pang, L., Cao, Y., Lin, H., & Zhou, Y. (2023). Parental feeding styles and risk of a new carious lesion in preschool children: A longitudinal study. *Nutrients*. <https://doi.org/10.3390/nu15204387>.
- Wolstenholme, H., Kelly, C., & Heary, C. (2022). 'Fussy eating' and feeding dynamics: School children's perceptions, experiences, and strategies. *Appetite*, 168, 106000. <https://doi.org/10.1016/j.appet.2022.106000>.
- Yuan, J., Jiang, X., Zhu, T., Zhang, Y., Wang, Y., Yang, X., & Shang, L. (2021). Caregivers' feeding behaviour, children's eating behaviour and weight status among children of preschool age in China. *Journal of Human Nutrition and Dietetics*, 34(5), 863–872. <https://doi.org/10.1111/jhn.12869>.
