



Parents' Perception to Healthy Diet of Preschool Children in Bangladesh

Tania Sultana¹, Md. Sazzad Hossain²

RN, BSN, MSS (DU), MSN-CHN (NIANER)¹, RN, BSN, MSN- PSU Thailand²

Department of Child Health Nursing,

National Institute of Advanced Nursing Education and Research,

Dhaka, Bangladesh

ABSTRACT: Background: Parents' perception in ensuring a healthy diet is very important for the health of preschool children. A healthy diet is essential for healthy growth and development in preschooler period and may persist into adulthood. Parents' perception can be a strong positive influence (e.g., encouraging high quality healthful choices) on healthy diet for their child. Parents play a pivotal role in children's early food environment and eating experiences. **Objective:** The aim of this study is to assess the parents' perception to healthy diet of preschool children in Bangladesh. **Methods:** A descriptive correlational study was conducted at three kindergarten school in the capital city of Bangladesh during July 2022 to June 2023. Total 132 parents of preschool children were selected conveniently following some inclusion and exclusion criteria. The data was collected with a newly developed structured questionnaire. The data was analyzed by using descriptive statistics through SPSS version-22. **Results:** The study findings revealed that mean age of parents was 31.19 years. Total perception mean score was $M = 4.04 \pm .67$ which showed the higher level. Parents' perception was significantly associated with their age ($r = .177, p = .043$), fathers' education ($t = -3.557, p = .001$), mothers' education ($t = -3.207, p = .002$), mothers' occupation ($t = 6.140, p = .003$), monthly family income ($r = .176, p = .044$), family members' ($F = 4.062, p = .019$) and number of child ($F = 4.105, p = .019$), child weight ($r = .178, p = .041$). **Conclusion:** Through the study result, it was considering the demographic characteristics such as number of children, religion, educational qualification, type of family, number of family member, monthly family income to improve their perception. This finding will be useful for further planning, development, and implementation for future nursing education, administration, and research. In regards, parents' educational program is recommended to increase their perception more and more to maintain healthy diet of preschool children.

Keywords: Perception, Healthy Diet, Parents, Children.

Introduction

Parents' perception in ensuring a healthy diet is very important for the health of preschool children (3). The health of preschool children largely depends on the nutritional diet that are formed in the earlier stages of their life (3-6 years) which enhances rapidly physical as well as psychological growth (40). A healthy diet is essential for healthy growth and development in Preschooler period and may persist into adulthood (3). Diet quality with adequate nutrition is also strongly related to the cognitive development of Preschool children. A good quality diet consists of frequent consumption of fruits, vegetables, whole grains and lean sources of protein and dairy foods, as well as infrequent consumption of foods high in sugar, salt and/or fat with low nutrient density (24).

Research examining knowledge and National dietary guidelines suggests that parents should understand what they should be feeding their children, but there is a significant gap in understanding how to encourage their children to eat healthy diet (13). The study of Greek children aged 2-5, found that 83 % of mothers using the Healthy Eating Index for the quality of their child's diet. Other study found 86% of mothers reported that their main concern on a healthy diet were more likely to estimate the quality of their child's diet (Kourlaba et al., 2009). The 82.5% of mothers had perception on quality of child's diet, and 78% of mother perception on child's healthy diet, and 17.6% of mother's perception on feeding to their child as child's preference (25).

In another study, the diet quality of nearly all the respondent was ranked as 'poor' (18.3 %) or 'needs improvement' (81.5 %). The maternal perceptions of their child's diet may not always correlate with reality and may limited nutritional knowledge of healthy foods and appropriate quantities for children (3). Survey of Canadian parents with children aged 4–12 years, 83 % of respondents considered their perception on child eating habits to have 'good' or 'excellent' (4).

The World Health Organization (WHO) and several studies revealed that children specially preschooler do not meet WHO recommendations for sugar, salt, fruits and vegetables intake. In the USA, the Feeding survey showed that the most vegetable consumed by 2–4 years old was fried potato and that 27% of children did not consume of vegetables on the day (24). Furthermore, in Canada a recent study of adherence to national dietary guidelines of 3-year-olds showed that only 38% of children met the recommendations for intake of milk or alternatives, and only 13% met the recommendation for intake of grains (24).

Parents' perception can be a strong positive influence (e.g., encouraging high quality, and healthful choices) on healthy diet for their child. Parents play a pivotal role in children's' early food environment and eating experiences through food selection, portion size, timing, frequency, structure, and social context of the eating environment (21). Several studies showed relationship between parents' perception of child fruits and vegetables with high energy and nutrient value that focused mainly on child's healthy diet, parents' ability to promote fruits and vegetables consumption, to prepare meals with fruit and vegetables and to manage meals (5).

An unhealthy diet in childhood is associated with the development of childhood obesity. Therefore, mothers with the capability to identify children with a poor diet could contribute to obesity prevention efforts (25). Mothers who do not perceive that their preschoolers follow an unhealthy diet will not make the appropriate amendments to improve their child's dietary habits; this results in increased risk for the development of nutrition-related diseases (25). The nutritional transition has resulted in the introduction of low nutrient, energy condensed foods such as nutritionally unbalanced snacks, easily accessible and fast foods, leading to high caloric unhealthy diets (6). Too much advertising of nutrient-poor, high-sugar foods directed at children, such as cereals, and cheaper cost of calorically dense, less nutritionally snacks such potato chips and sodas, are postulated to be major causes of unhealthy eating (14). This is where parents' perception plays a role, and therefore parents must initially be able to identify when a child's diet is sub-optimal, and be aware of the timely required changes (2). Compared with the national dietary intake and WHO Recommendation, In Bangladesh there is lack of perception regarding food habit as evidenced by daily rice intake and very low intake of fruits, calcium and iron, but consumed rice daily with frequent vegetables among families of preschool children stated by Kurshed et al. (2010).

Objectives of the Study

General objective of this study is to assess the parents' perception to healthy diet of preschool children in Bangladesh.

Specific Objectives were:

1. To describe the socio-demographic characteristics of parents and their children;
2. To assess the parents' perception to healthy diet of preschool children;
3. To examine relationship between socio-demographic characteristics and parents' perception to healthy diet of preschool children.

This study will help to collect base line data on parents' perception and is used to investigate how parents perceive the issue of healthy diet to improve healthy diet for their preschool children and it will also be recommended into future study.

Materials and Methods

Study design, ethics and setting

This descriptive cross-sectional study was approved by the Institutional Review Board (IRB) of National Institute of Advanced Nursing Education (NIANER). The study was conducted at kindergartens located at the capital city of Bangladesh between July 2022 and June 2023.

Participants

The participants were the parents (either mother or father) of preschool children. The sample size was 132 estimated by using G*power software. Convenient sampling technique was used to recruit the eligible subjects based on the following inclusion criteria; parents of 3-6 years old children; and parents who were able to communicate in this study; and could read Native Bengali language. The exclusion criteria of the eligible subjects were: the adopted children; the single parent; and the broken family.

Research tool

A newly developed structured questionnaire was used to collect the data for this study. Questionnaire was developed by the researcher based on literature review and experts' opinion. It consists of two parts: socio-demographic characteristics of participants (14 Items), and parents' perception to healthy diet of preschool children (30 items). The content validity of the instrument was checked by three panels of experts from NIANER faculty who were knowledgeable and experts in the area of conducting research and instrument development. The internal consistency of reliability of the instruments for perception to healthy diet questionnaires was checked by Cronbach's alpha coefficient. It was yielding 0.89. The instrument was initially written in English language, then it was translated into native Bengali language with the help of three bilingual translators who were competent in both Bengali and English languages.

Procedure

Researcher was introduced with study participants and explained the study objectives, data collection procedure and benefit of this study to the participants and was asked for their participation. Subjects' confidentiality and anonymity was strictly maintained by using coding system. The researcher ensured to the participants that their involvement would not cause any harm to them. The researcher took verbal and written consent from the parents who agreed to participate in this study. Researcher collected data by a Bengali version self-introduced structured questionnaire. Then researcher instructed to fill-up the questionnaire independently and individually without any help or sharing with others. It took around 20-30 minutes. During return back, the researcher checked the questionnaires for completeness; if anything, missing, the researcher requested the subjects to make it completed.

Statistical Analysis

The collected data was processed and analyzed by using computer software program (SPSS-22). Before analyzing, the data was clean, checked, rechecked, and justified for its completeness and fairness to rule out the error or incompatibility. The collected data was analyzed by using descriptive statistics such as frequency percentage, mean and standard deviation etc. to describe the demographic data and parents' perception data. Pearsons' correlation coefficient was used to examine the relationship between socio-demographic characteristics and parents' perception to healthy diet of preschool children.

Results

A total of 132 parents agreed to participate (95% response rate), while 8 parents (5%) refused. Table 1 summarizes the demographic characteristics of participants. Mean age of parents was 31.19 (5.29) years which range from 20-45 years. Majority (89.4%) of the parents were female and 10.6% were male. Most (85.6%) of parents were Muslim, only 14.4% were in non-Muslim. Majority of the parents had college or above education and minority were up to school education. Most (70.5%) of fathers' occupation was service holder and 24.2% was businessmen, only 5.3% was daily labor. Majority (85.6%) of mother's occupation was housewife, 14.4% were service holder. The mean of the parents' monthly family income was 52746.21 (34691.19). About 49.2% of participants were four members in their family and 2.6% of parent's were living in nuclear family.

Among them, 51.5% of parents had two children, 38.6% had one child and only 9.8% had three or more child. Among the children, 52.3% were male and less than fifty percent (47.7%) were in female. The mean age of children was 5.17 (.82) years which range from 3-6 years. The mean weight of children was 18.7 (4.4).

Table 1: Distribution of Socio-Demographic Characteristics of Participants (N=132)

Variables	Category	n	%	Mean ± SD
Age in Years (min 20y -max 45y)				31.19 ± 5.29
Gender	Male	14	10.6	
	Female	118	89.4	
Religion	Muslim	113	85.6	
	Non-Muslim	19	14.4	
Fathers' Education	School	22	16.7	
	College or above	110	83.3	
Mothers' Education	School	33	25.0	
	College or above	99	75.0	
Fathers' Occupation	Service Holder	93	70.5	
	Businessmen	32	24.2	
	Daily Labor	7	5.3	
Mothers' Occupation	Service Holder	19	14.4	
	Housewife	113	85.6	
Monthly Family Income in BDT (min 20000- max 200000)				52746.21 ±34691.19
Number of Family Members	3 Members	32	24.2	
	4 Members	65	49.2	
	5 or more Members	35	26.5	
Family Type	Nuclear Family	109	82.6	
	Joint Family	23	17.4	
Number of Children	One Child	51	38.6	
	Two Child	68	51.5	
	Three or more Child	13	9.8	
Gender of Child	Male	69	52.3	
	Female	63	47.7	
Child Age in years (min 3 -max 6)				5.17 ± .82
Child Weight in Kg (min 10, max 32)				18.7 ± 4.46

Table 2 summarizes the parents' perception to healthy diet of preschool children. The total mean score of parents' perceptions was 4.04 (SD=.67) which was in 5-point Likert scale. There was six sub-domain of perception such as: parents' perception to diet quality; parents' perception to dietary pattern; parents' perception to unhealthy diet; parents' perception to food hygiene; parents' perception to benefit; parents' perception to barrier.

The total mean of parents' perception to diet quality was 4.15 (SD=.56). Majority (70.5%) of parents agreed that healthy diet comprises of different nutrient component including Carbohydrate, Fat, Protein, Vitamins and mineral. Most (72.7%) of them agreed and only 0.8% disagreed that it's important for their child to eat lots of vegetables and fruits as a source of vitamins, minerals and plant protein. More than two third (71.2%) of parents agreed as well as only 1.5% parents were neutral in perception of that it is very important for their child to eat a variety of protein foods including fish, meat, eggs, nuts and seeds.

The total mean perception to dietary pattern among parents was 3.87 (SD=.71). Almost (72.0%) of them agreed, 1.5% strongly disagreed that every meal for their child should be varied and moderate. Majority (76.5%) of parents understood and only 2.3% disagreed that child's nutritional needs depend on age, weight and height. The 73.5% parent's perceived and only 0.8% of them strongly disagreed that they can plan a weekly meal routine for their child, which can help to maintain healthy diet.

The total mean score of parents' perceptions to unhealthy diet was 4.05 (SD=.68). Where majority (72.7%) of them perceived, only 0.8% disagreed that if they keep an eye on child, they can spot unhealthy food intake. Whereas 73.5% parents agreed and 0.8% strongly disagreed that forcing more food at mealtimes may be unhealthy for child.

The total mean perception to food hygiene among parents was 4.15 (SD=.72). Among parents, 60.6% agreed, only 0.8% strongly disagreed that eating fresh homemade food is healthy and essential for child.

Among them, 65.9% appeared and 1.5% strongly disagreed that to keep food healthy, cooked food should be stored properly and heated sufficiently.

The total mean perception of parents on benefits to healthy diet was 4.29 (SD= .56). More than sixty percent (61.4%) of parents understood, only 8% parents were neutral that child needs healthy diet for normal growth and development. Majority (74.2%) of parents opinioned, only 2.3% dis-opinioned that a diet rich in vegetables and fruits reduces the risk of obesity and malnutrition. The total mean perception about barriers to healthy diet among parents of preschool children was 4.04 (SD=.67). Where Majority (75.8%) parents thought and 3.8% didn't think that lack of knowledge about nutrition can lower child's diet quality. Almost (64.4%) of parents believed and 4.5% didn't believe that excessive advertising of processed foods in the media can be a barrier to healthy diet. Also, 42.4% of them didn't believe that nutritious food is out of budget and out of reach which is a barrier to healthy diet.

Table 2: Distribution of Parents' Perception to Healthy Diet of Preschool children (N=132)

Items	Mean±SD
Diet Quality	
Total Mean Perception of Diet Quality	4.15±.56
Dietary Pattern	
Total mean Perception of Dietary Pattern	3.87±.71
Unhealthy diet	
Total mean Perception of Unhealthy Diet	4.05±.68
Food hygiene	
Total Mean Perception of Food Hygiene	4.15±.72
Benefits	
Total Mean Perception of Benefits	4.29±.56
Barriers	
Total Mean Perception of Barriers	3.72 ± .77
Total Mean Perception	4.04 (SD=.67)

Table 3 shows the relationship between socio-demographic characteristics and Parents' Perception to Healthy Diet of Preschool children. The findings show that parents age was significantly positive correlated with parents' perception ($r=.177$, $p=.043$). There was a statistically significant difference between fathers' education and their perception to healthy diet ($t= - 3.557$, $p=.001$). There was also a significant difference between mothers' education and their perception $=-3.207$, $p=.002$. Mothers whose occupation was service holder shows higher perception compared to housewife. The result was statistically positive significant ($F=3.516$, $p=.001$).

There was significant positive correlation between parents' monthly family income and their perception where $r=.176$ $p=.044$. According to number of family members, 'three members' was significant than four and five or more members ($F=4.062$ $p=.019$). As well as it also found that there was a significant difference between parents' number of child and their perception ($F=4.105$ $p=.019$). Child weight was significantly positive correlated with parents' perception where $r=.178$ $p=.041$. However, parents' perception to healthy diet was non-significantly different by the category of parents' gender, religion, fathers' occupation, family type, gender of child, child age.

Table 3: Distribution of Relationship between Parents Socio-Demographic Characteristics and Parents' Perception to Healthy Diet of Preschool Children (N=132)

Variables	Category	Mean ± SD	t/r/F	p value
Age			.177	.043
Gender	Male	121.57 ± 9.76	.415	.679
	Female	120.36 ± 10.36		
Religion	Muslim	120.70 ± 10.61	.587	.558
	Non- Muslim	119.21 ± 7.98		
Fathers' Education	School	113.68 ± 11.11	- 3.557	.001
	College or above	121.85 ± 9.57		
Mothers'	School	115.70 ± 11.21	-3.207	.002

Variables	Category	Mean ± SD	t/r/F	p value
Education	College or above	122.09 ± 9.46		
Fathers' Occupation	Service Holder	120.90 ± 9.74		
	Businessmen	120.66 ± 10.26	1.366	.259
	Daily Labor	114.28 ± 15.23		
Mothers' Occupation	Service Holder	127.84 ± 8.87	3.516	.001
	Housewife	119.27 ± 10.07		
Monthly Family Income			.176	.044
Number of Family Members	3 Members	124.06 ± 10.13 ^a	4.062	.019
	4 Members	118.12 ± 9.69 ^b		a>c>b
	5 or more Members	121.63 ± 10.56 ^c		
Family Type	Nuclear Family	120.38 ± 9.84	-.260	.795
	Joint Family	121.00 ± 12.32		
Number of Children	One Child	123.59 ± 10.20 ^a	4.105	.019
	Two Child	118.28 ± 10.02 ^b		a>c>b
	Three or more Child.	119.92 ± 9.37 ^c		
Gender of Child	Male	120.84 ± 9.81	.406	.685
	Female	120.11 ± 10.81		
Child Age			.090	.303
Child Weight			.178	.041

Discussion

The findings of the current study show that the participants' mean age was inconsistent with a study reported by Xiang et al. (2021). The result of the current study showed that mothers' educational level mostly has completed HSC or graduation. The finding is consistent with several studies where maximum participants completed Graduation (25, 32, 43). The finding of present study appeared that most of mother occupation was housewife that is consistent with another study reported by Broilo et al. (2017), where mothers occupation was also housewife. Another study where the reasons might be attributed to the lack of control by parents to their children's diet and the deficiency in proper counseling by nurses (25, 32, 43).

In another study reported mother's occupation was service holder which is inconsistent with the present study finding. In the present study participants monthly family income mean was 52746.21 BDT. According to the Trading Economics global macro models and analysts' expectations in Bangladesh the monthly household income per month was 15100.00 BDT by the end of 2020. The study finding showed high average monthly family income. The current study showed the mean weight of children was 18.7 (SD=4.46) which indicates normal range of child body weight. The visual normalization theory suggests that the high prevalence of overweight/obesity in children is an important reason for parental underestimation. (28, 44).

Total mean perception of parents was 4.04; SD =.67. The current study finding indicate the higher level of perception among parents that is consistent with another study result where it was seen that majority of the respondents were higher level of perception, minority of them with moderate level of perception to healthy diet (29).

There was six sub-domain of perception such as: parents' perception to diet quality; parents' perception to dietary pattern; parents' perception to unhealthy diet; parents' perception to food hygiene; parents' perception to benefit; parents' perception to barrier.

The findings of the present study showed that there was a significant positive relationship between the parents' age and parents' perception to healthy diet of preschool children ($r=.177$, $p=.043$). The present study finding is consistent with several study was explained that researchers reported parents with increasing age, it was observed an increased parents' perception (3, 36). The present study revealed that there was a significant difference between parents' educational level and parents' perception to healthy diet. In the

present study, the parents' education level was associated with perception among parents to healthy diet of preschool children.

The result of present study is consistent with several studies that were explained have demonstrated an association between a higher parent's educational level and a higher perception to diet quality for their children in regard to several aspects, such as greater fruit and vegetable consumption and reduced consumption of food with low nutritional value (7, 38). Assuming that mothers with more schooling have greater knowledge and perception about the healthy diet, this enables them to recognize shortcomings in their diet (more frequently than mothers with less schooling) and this recognition can help to increase the quality of the foods offered to their children, which would explain the fact that they more often evaluated their children's diet as healthy (9). Other authors explained that the impact of higher educated parents in child's fruit consumption and less sugar-sweetened beverages intake. Parents' education is an important determinant of their eating habits, which in turn, influences what children.

The present study finding is inconsistent with the a study that appears not to have significant association between the level of mothers' education and perception to healthy diet were found that maternal perceptions of their child's diet may not always correlate with higher education and may stem from limited nutritional knowledge of healthy foods and appropriate quantities for children (25).

The current study showed that there was a significant difference between mothers' occupation and their perception to healthy diet ($F=3.516, p=.001$). The current study finding is consistent with the result reported by Beydoun et al. (2008) that explained there was significant association between mothers' occupation and perception to diet of preschool children. A study is inconsistent with the current result which was conducted by Kourlaba et al. (2009) that observed no significant association between mothers' occupation and their perception to healthy diet of preschool children.

In the present study, there was a significant positive correlation between monthly family income ($r=.176, p=.044$) and parents' perception. The mean of participants monthly family income was 52746.21 (SD=34691.19) BDT that means high family income. The possible reason for high monthly family income was that the majority of the fathers were service holders. It indicated that high socio-economic status has a significant impact on perception among parents of preschool children.

The current result was consistent with several study reported by several study where the findings showed that significant positive associations between parental socio-economic-status and a child's diet. (5, 12, 27) Compared to higher SES children, children from lower SES families have been shown to have less desirable eating behaviors, including eating fewer family meals and fewer fruits and vegetables reported by Zeidan et al. (2011).

The result of current study was inconsistent with another study result where it was observed that there was no significant association between monthly family income and parents' perception to child diet (17, 41). Another study explained that the level of income does not affect parents' perception to quality of child food (29). The result of present study was also inconsistent to the result of a study by Turner et al that appears to family wealth may also negatively impact on perception to a child's diet quality. For instance, in wealthy families' parents who can afford a healthy diet may decide to treat their children more frequently because they can afford to do so (41).

The result indicates higher monthly family income was related to higher perception to healthy diet perception to healthy diet of child is associated with their child weight status as highly perception direct to normal BMI -scores when compared to moderately perception and poor perception among parents to healthy diet of children. (40). The current study finding showed that there was no significant difference between religion, father's occupation, types of family, age of child, gender of child and parents' perception. The finding of current study is consistent to the result where there was no significant difference between fathers' occupation and their perception to child diet (25). Another finding is inconsistent with the current result reported by (3).

The limitations of the study include: The convenient sampling technique which was used to recruit the sample. The data were collected from kindergarten only in urban setting; this cannot represent the scenario of all government, non-government school and also English medium school in the country. Most of the

participants were mother, so it cannot be represented as a general picture. Therefore, the result of this study cannot be generalized to other parents who lived in rural areas and in the whole country. Strength of this study includes: The instrument was validated by three panels of expert in the area of research. Its reliability score was .89 which were checked by Cronbach's alpha coefficient test. Another strength of this study was that there was enough sample size (N=132) estimated used to conduct the current study and also the researcher fulfilled the set of inclusion criteria for sample selection spontaneously.

Conclusion

Parents' perception is considered an important target for public health interventions. The study findings indicated that higher level of parent's perception to healthy diet is prevalent in Bangladeshi context. There was statistically significant relationship between parents and their child weight ($r = .178$, $p = .041$) which is consistent with another study findings where was reported that parental socio-demographic characteristics and their perception to healthy diet of preschool children. Study found that with the increase of parent's age, their perception significantly increased and mothers whose were service holder, showed significantly higher perception. Parents with higher monthly income demonstrated significantly higher perception.

The findings of the present study will provide information for the nurses to develop new strategies to improve perception to healthy diet among parents of preschool children. This study finding will also contribute to the school health nurse, community nursing education, health policy maker administration and also conducting the future nursing research in Bangladesh.

Recommendations

Based on the identified limitation, the researcher has put forward some important recommendations. In order to improve perception to healthy diet, we need to include the identified factors related to parents' perception to healthy diet in parent's training around the country. The further large study should consider of parents from every district of Bangladesh and then the actual perception of parents could be found. A health education session should be conducted in the school or community by the nurses for the parents to improve their perception to healthy diet more effectively.

Acknowledgements

The author thanks the National Institute of Advanced Nursing Education and Research Center and thank to family for their support.

References

1. The Acharya, J., Teijlingen, E. V., Murphy, J. M., & Ellahi, B. (2020). Parental Food Beliefs on Pre-School-Aged Children in Kaski District of Nepal: A Qualitative Review. *Journal of Multidisciplinary Research in Healthcare*, 7(1), 1–12.
2. Adamo, K. B., & Brett, K. (2014). Parental perceptions and childhood dietary quality. *Maternal and Child Health Journal*, 18, 978–995. doi:10.1007/s10995-013-1326-6.
3. Adamo, K. B., & Brett, K. E. (2013). Parental Perceptions and Childhood Dietary Quality. *Maternal and Child Health Journal*, 18(4), 978–995.
4. Adamo, K. B., Papadakis, S., Dojeiji, L., Turnau, M., Simmons, L., Parameswaran, M., et al. (2010). Using path analysis to understand parents' perceptions of their children's weight, physical activity and eating study. *British Journal of Nutrition*, 97(1), 176–181.
5. Almeida, C., Azevedo, J., Gregório, M. J., Barros, R., Severo, M., & Padrão, P. (2021). Parental practices, preferences, skills and attitudes on food consumption of pre-school children: Results from Nutriscience Project. *PLOS ONE*, 16(5), e0251620.
6. Austin, S. B., Melly, S. J., Sanchez, B. N., Patel, A., Buka, S., & Gortmaker, S. L. (2005). Clustering of fast-food restaurants around schools: A novel application of spatial statistics to the study of food environments. *American Journal of Public Health*, 95(9), 1575–1581.
7. Brekke, H. K., Van Odijk, J., & Ludvigsson, J. (2007). Predictors and dietary consequences of frequent intake of high-sugar, low-nutrient foods in 1-year-old children participating in the ABIS British Journal of Nutrition, 97(1), 176–181.
8. Briefel, R. R., Deming, D. M., & Reidy, K. C. (2015). Parents' Perceptions and Adherence to Children's Diet and Activity Recommendations: the 2008 Feeding Infants and Toddlers Study. *Preventing Chronic Disease*, 12.

9. Broilo, M. C., Vitolo, M. R., Stenzel, L. M., & Levandowski, D. C. (2017). Mothers' perceptions of their own diets and the diets of their children at 2–3 years of age. *Psicologia: Reflexão E Crítica*, 30(1).
10. Chow, C. Y., Riantiningtyas, R. R., Kanstrup, M. B., Papavasileiou, M., Liem, G. D., & Olsen, A. (2020). Can games change children's eating behaviour? A review of gamification and serious games. *Food Quality and Preference*, 80, 103823.
11. Crowe, M., O'Sullivan, M., Cassetti, O., & O'Sullivan, A. (2019). Estimation and consumption pattern of free sugar intake in 3-year-old Irish preschool children. *European Journal of Nutrition*, 59(5), 2065–2074.
12. Darmon, N., & Drewnowski, A. (2008). Does social class predict diet quality? *The American Journal of Clinical Nutrition*, 87(5), 1107–1117.
13. Da Costa Louzada, M. L., Baraldi, L. G., Monteiro, C. A., Martins, A. M., Canella, D. S., Moubarac, J., Mozaffarian, D. (2015). Consumption of ultra-processed foods and obesity in Brazilian adolescents and adults. *Preventive Medicine*, 81, 9–15.
14. Drewnowski, A. (2009). Obesity, diets, and social inequalities. *Nutrition Reviews*, 67(Suppl 1), S36–S39.
15. Drewnowski, A., & Darmon, N. (2005). The economics of obesity: dietary energy density and energy cost. *The American Journal of Clinical Nutrition*, 82(1), 265S–273S.
16. De Carvalho, C. A., De Almeida Fonsêca, P. C., Priore, S. E., Franceschini, S. D. C. C., & De Novaes, J. F. (2015). Food consumption and nutritional adequacy in Brazilian children: a systematic review. *Revista Paulista De Pediatria (English Edition)*, 33(2), 211–221.
17. De Lauzon-Guillain, B., Oliveira, A., Charles, M. A., Grammatikaki, E., Jones, L., Rigal, N., Lopes, C., Manios, Y., Moreira, P., Emmett, P., & Monnery-Patris, S. (2012). A Review of Methods to Assess Parental Feeding Practices and Preschool Children's Eating Behavior: The Need for Further Development of Tools. *Journal of the Academy of Nutrition and Dietetics*, 112(10), 1578–1602.e8.
18. Francis-Granderson, I., & McDonald, A. (2018). Parents' perceptions of healthy eating practices in north-east Trinidad. *Proceedings of Singapore Healthcare*, 27(3), 175–179.
19. Hart, C. N., Raynor, H. A., Jelalian, E., & Drotar, D. (2010). The association of maternal food intake and infants' and toddlers' food intake. *Child: Care, Health and Development*, 36(3), 396–403.
20. Hart, L. M., Damiano, S. R., Cornell, C., & Paxton, S. J. (2015). What parents know and want to learn about healthy eating and body image in preschool children: a triangulated qualitative study with parents and Early Childhood Professionals. *BMC Public Health*, 15(1).
21. Henry CJ, Nicklas TA, Nicklaus S (eds): Nurturing a Healthy Generation of Children: Research Gaps and Opportunities. Nestlé Nutr Inst Workshop Ser, vol 91, pp 21–30.
22. Hoerr, S. L., Hughes, S. O., Fisher, J. O., Nicklas, T. A., Liu, Y., & Shewchuk, R. M. (2009). Associations among parental feeding styles and children's food intake in families with limited incomes. *International Journal of Behavioral Nutrition and Physical Activity*, 6(1), 55.
23. Holmberg Fagerlund, B., Helseth, S., & Glavin, K. (2019). Parental experience of counselling about food and feeding practices at the child health centre: A qualitative study. *Journal of Clinical Nursing*, 28(9–10), 1653–1663.
24. Jarman, M., Edwards, K., & Blissett, J. (2022). Influences on the dietary intakes of preschool children: a systematic scoping review. *International Journal of Behavioral Nutrition and Physical Activity*, 19(1).
25. Kourlaba, G., Kondaki, K., Grammatikaki, E., Roma-Giannikou, E., & Manios, Y. (2009). Diet quality of preschool children and maternal perceptions/ misperceptions: The GENESIS study. *Public Health*, 123(11), 738–742.
26. Kröller, K., Jahnke, D., & Warschburger, P. (2013). Are maternal weight, eating and feeding practices associated with emotional eating in childhood? *Appetite*, 65, 25–30.
27. Lawrence, W., & Barker, M. (2009). A review of factors affecting the food choices of disadvantaged women. *Proceedings of the Nutrition Society*, 68(2), 189–194.
28. Manios, Y., Kourlaba, G., Kondaki, K., Grammatikaki, E., Birbilis, M., Oikonomou, E. K., & Roma-Giannikou, E. (2009a). Diet Quality of Preschoolers in Greece Based on the Healthy Eating Index: The GENESIS Study. *Journal of the American Dietetic Association*, 109(4), 616–623.
29. Maram S., Hebat K. and Ahmed H. A. (2020) Parental perceptions of child's healthy diet: Evidence from a rapidly developing country. *Journal of Family Medicine and Primary Care*, 9:4949-55.
30. Magboul, S., Hendaus, M., El Ansari, W., AlHalabi, O., Sati, M., Kamal, H., & Alhammadi, A. (2020). Parental perceptions of child's healthy diet: Evidence from a rapidly developing country. *Journal of Family Medicine and Primary Care*, 9(9), 4949.

31. Mallan, K., & Miller, N. (2019). Effect of Parental Feeding Practices (i.e., Responsive Feeding) on Children's Eating Behavior. *Nestlé Nutrition Institute Workshop Series*, 21–30.
32. Mazza, M., Morseth, M., & Torheim, L. E. (2022). Association between parental feeding practices and children's dietary intake: a cross-sectional study in the Gardermoen Region, Norway. *Food & Nutrition Research*, 66.
33. Min, K., Wang, J., Liao, W., Astell-Burt, T., Feng, X., Cai, & Jiang, Y. (2021). Dietary patterns and their associations with overweight/ obesity among preschool children in Dongcheng District of Beijing: a cross-sectional study. *BMC Public Health*, 21(1).
34. Manios, Y.; Moschonis, G.; Karatzi, K.; Androustos, O.; Chinapaw, M.; A Moreno, L.; Bere, E.; Molnar, D.; Jan, N.; Dössegger, A.; et al. Large proportions of overweight and obese children, as well as their parents, underestimate children's weight status across Europe. The ENERGY (European Energy balance Research to prevent excessive weight Gain among Youth) project. *Public Health Nutr.* 2015, 18, 2183–2190.
35. Oli, N., Vaidya, A., Subedi, M., Eiben, G., & Krettek, A. (2015). Diet and physical activity for children's health: a qualitative study of Nepalese mothers' perceptions. *BMJ Open*, 5(9), e008197.
36. Rodenburg G, Oenema A, Kremers SPJ, van de Mheen D. Parental and child fruit consumption in the context of general parenting, parental education and ethnic background. *Appetite*. 2012; 58(1):364–72.
37. Russell, C. G., Haszard, J. J., Taylor, R. W., Heath, A. L. M., Taylor, B., & Campbell, K. J. (2018). Parental feeding practices associated with children's eating and weight: What are parents of toddlers and preschool children doing? *Appetite*, 128, 120–128.
38. Saldiva, S. R. D. M., Venancio, S. I., De Santana, A. T., Da Silva Castro, A. L., Escuder, M. M. L., & Giugliani, E. R. J. (2014). The consumption of unhealthy foods by Brazilian children is influenced by their mother's educational level. *Nutrition Journal*, 13(1).
39. Scaglioni, S., De Cosmi, V., Ciappolino, V., Parazzini, F., Brambilla, P., & Agostoni, C. (2018). Factors Influencing Children's Eating Behaviours. *Nutrients*, 10(6), 706.
40. Shrijana P., Suja R., Narayani P., Anu S and Saroj G. (2019). Parental child feeding practices and their relationship with children's dietary intake and weight status in Nepal. *Journal of Multidisciplinary Healthcare*, 12 325–333.
41. Turner, J. J., Kelly, J., & McKenna, K. (2006). Food for thought: Parents' perspectives of child influence. *British Food Journal*, 108(3), 181–191.
42. Valmórbida, J. L., & Vitolo, M. R. (2014a). Factors associated with low consumption of fruits and vegetables by preschoolers of low socio-economic level. *Jornal De Pediatria*, 90(5), 464–471.
43. Xiang, C., Zhang, Y., Yong, C., Xi, Y., Huo, J., Zou, H., Liang, J., Jiang, Z., & Lin, Q. (2021). Association between Parents' Perceptions of Preschool Children's Weight, Feeding Practices and Children's Dietary Patterns: A Cross-Sectional Study in China. *Nutrients*, 13(11), 3767.
44. Zhang, T.; Cai, L.; Jing, J.; Ma, L.; Ma, J.; Chen, Y. Parental perception of child weight and its association with weight-related parenting behaviors and child behaviors: A Chinese national study. *Public Health Nutr.* 2018, 21, 1671–1680.