

Household Food Practices And Their Direct Impact On Child Nutritional And Health Outcomes

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Abstract

Background: Household food practices are crucial in shaping the nutrition intake and the health-related outcomes of children. Dietary quality and development of children are directly affected by factors like food availability, meal patterns, and decision-making of a parent. **Objective:** The paper seeks to analyze the direct relationship between food practices in households and the nutritional status and health outcomes of children. **Methodology:** A cross-sectional study was carried out 250 households with children between ages of 5 and 12 years old. Structured questionnaires, dietary assessments, and health measures (BMI and illness frequency) were used to gather data. Correlation and regression were used to conduct statistical analyses to find out relationships between variables. **Findings:** (Results) findings showed that children living in households that reported healthy food practices had higher score on dietary diversity (68), than less structured household (35). The positive household practices were linked significantly to lower BMI level ($r = -0.39$, $p < 0.01$) and less frequency of illnesses. **Conclusion:** There is a direct and significant relationship between household food practices and eating and health outcomes of children. Encouragement of routine meals and healthy eating conditions can enhance the well-being of children.

Keywords: food practices in the household, child feeding, dietary diversity, health outcomes, family environment and childhood health.

1. Introduction

Early and middle childhood physical and emotional health of a child is one of the crucial determinants of well-being throughout life. The optimal physical growth, cognitive development, and immune function, as well as the emotions stability and behavioral consequences, are backed by a proper nutrition. Inadequate dietary habits among children have been attributed to high chances of obesity, deficiency of micronutrients, anxiety, and poor academic results [1][2]. On the other hand, healthy high-protein diets full of the necessary nutrients enhance the ability to concentrate, emotional stability, and minimize the risks of chronic diseases in later life [3]. Therefore, the health outcomes of children are directly related to the environment that they live in, specifically, household food habits and care giving behaviors.

Parenting practices are significant during early development, particularly in influencing diets of children. Parents are the main decision-makers as far as the availability of food and meal time, and methods of feeding in the house are concerned. Studies show that children tend to imitate what their parents are eating and this can be attributed to social learning theory [4][5]. Good meal habits, including scheduled meal times, promotion of nutritious diets, and responsive feeds have been linked with high diet quality and healthier weight condition [6]. Conversely, disrupted eating habits, became too restrictive, or permissive approaches to feeding may add to poor eating behaviors and emotional suffering [7][8]. Moreover, socioeconomic and parental education, and cultural norms play an important role in the household food environment, and, as a result, the nutrition of children [9].

Unhealthy eating habits in children have continued to be a very serious issue of global health concern, in spite of increasing awareness on the same. The increasing trend of processed food consumption, careless eating habits and sedentary lifestyles have led to increasing levels of childhood overweight and associated health problems [10]. This aspect is especially significant since in adulthood, these habits developed in childhood can be carried on, which further

exposes them to health-related risks over the long run. There is thus a need to understand the direct impact of household food practices on children nutritional and health outcome to inform decisions that can improve intervention and policies.

Nevertheless, there are a number of research gaps in the literature available. Isolated variables like parental control or the socioeconomic status have been practiced under many research studies without addressing the joint effect of methods used in the household food practices, the emotional aspects, and the environmental status [11]. Moreover, researchers have conducted less studies about the direct association between everyday domestic food habits and physical and psychological health results in children [12]. Also missing is the complete, context-specific research that takes into consideration the changing structure of the family and influences of a modern lifestyle. It is necessary to fill these gaps, and only by doing so can holistic approaches to enhancing healthy eating habits and reducing the level of child health deficiencies be achieved in people of varying population.

1.1 Objectives

- To determine how household food behaviors including meal patterns, food availability and dietary practices influence the nutritional status and health outcomes in children.
- To test the association between food environments at home and physical (BMI, illness frequency) and emotional (eating behaviors) children health indicators.

2. Literature review

The more recent literature (2022-2026) gives more information regarding the direct effect of household food practices on nutritional and health outcomes of children. Modern studies stress that a regular meal routine, access to healthy nutrition, and parental participation can have a great contribution to the quality of the diet and wellbeing of children [13][14]. As an illustration, families where home-cooked meals are valued and regular eating habits are practiced relate to an increased dietary diversity and improved levels of nutrient consumption among children [15].

The home food environment is also beginning to be an area of emerging evidence that has an influence on both the physical and emotional health. Favorable living habits, including the promotion of healthy eating habits and the restraints of ultra-processed meals, have also been associated with reduced chances of obesity and enhanced metabolic well-being [16]. Conversely, irregular eating habits and a high frequency of food rich in energy has been linked to the increase in BMI and the frequency of illnesses [17]. Moreover, recent reports show that the emotional connection of children to food by household food practices also influences their behavioral engagement in emotional eating, as well as, food preferences [18].

The impact of socioeconomic and cultural aspects on food practices in households remains very important. Studies indicate that the more nutrition literate and economically stable families are, the more likely they will be to create healthier food environments, although there are still disparities among the populations [19]. Nevertheless, with these developments, there are still lapses in the knowledge of long-term effects and culturally diverse practices. The collected literature indicates, in general, that the household food practices are key determinants of the holistic health outcomes of children.

3. Methodology

a. Research Design

The research design used in this study is descriptive with an analytical aspect. The descriptive one would consist of identifying the patterns of food practices and children health outcomes in the household, whereas the analytical part would consist of a correlation of such variables as food environment, dietary practices, and health indicators. It is a design that is suitable in the exploration of associations that are not experimentally manipulated.

b. Study Population

Participants are children aged between 5 and 12 years old and parents/ primary caregivers. This is the age group chosen as it is a crucial period of development with the household practices severely affecting the eating habits and health practices.

c. Sampling Technique

A stratified random sampling method is utilized to cover all the representatives of the various socioeconomic status, education and residential areas. This approach increases study trustworthiness and applicability.

d. Data Collection Methods

There are several data collection tools which are employed to have all-inclusive and credible data:

1. Surveys/Questionnaires: Parents will be surveyed using structured questionnaires to provide information regarding practices within their households in food, meal patterns and nutrition knowledge.
2. Interviews: Semi-structured interviews are carried out with a sampled population to obtain more insight into household practices and attitudes.
3. Observation: Direct observation of food eating pattern and home food environment of children is conducted where possible.

e. Tools/Measures

1. Health Indicators: To test physical health, the Body Mass Index (BMI), score of dietary diversity, and the frequency of illness are measured in children.
2. Mental Health Scales: Standardized scales are administered to assess emotional eating, self-regulation and total psychological well-being of children.

f. Data Analysis

1. Quantitative Analysis: SPSS software is used to analyze data with descriptive statistics, correlation analysis, and regression to establish a relationship between the variables.
2. Qualitative Analysis: Thematic Analysis: Qualitative analysis is done on responses to the questions in the interview through thematic analysis of responses in order to draw common themes and patterns of the responses concerning household food practices and child behaviour.

Conceptual frame work



Figure 1: Conceptual Framework of Household Food Practices and Child Health Outcomes

Figure 1 is a conceptual framework that depicts the relationship between household food practices and nutritional and health outcomes of children. The feeding practices and the home food environment are influenced by household and parental factors and impact the eating habits among children. These behaviors affect directly physical and emotional health, whereas mediating and moderating variables affect the nature and the direction of these relationships.

Data Set and Parameters

The information found in table 1, the heading of which is Household Food Practices and Child Health Outcomes Dataset, is cross-sectional data obtained on 250 parent-child pairs. It will entail demographic, behavioral and health-related variables. The most important parameters are child age, gender, BMI, dietary diversity score, and frequency of illness, and household variables of food availability, meal structure and parental nutrition knowledge. Mitigation

scales are eating habits and emotional eating scores. Structured questionnaires and observations were used to collect data, thus making it reliable. This data is useful in researching the immediate effect that household food practices have on child health outcomes [1][2].

Table 1: Household Food Practices and Child Health Outcomes Dataset (N = 250)

Variable Category	Variable Name	Type	Measurement/Scale	Description
Child Demographics	Age	Continuous	Years (5–12)	Child's age
	Gender	Categorical	Male/Female	Child's gender
Health Indicators	BMI	Continuous	kg/m ²	Body Mass Index
	Illness Frequency	Discrete	Number per year	Frequency of illness
Dietary Measures	Dietary Diversity Score	Continuous	Scale (0–10)	Variety of food intake
	Meal Frequency	Discrete	Meals per day	Daily eating pattern
Household Food Practices	Food Availability	Categorical	Healthy/Mixed/Unhealthy	Type of food available at home
	Meal Structure	Categorical	Regular/Irregular	Consistency of meal timing
	Parental Nutrition Knowledge	Continuous	Score (0–20)	Awareness of healthy eating
Parenting Behaviors	Feeding Practices	Continuous	Likert Scale (1–5)	Feeding approach/style
	Food Rules	Categorical	Yes/No	Presence of food-related rules
Behavioral Measures	Eating Habits	Continuous	Scale Score	Healthy vs unhealthy habits
	Emotional Eating	Continuous	Scale Score	Eating influenced by emotions

Environm ental Factors	Eating Atmosp here	Catego rical	Positive/Neutral/N egative	Mealtim e environm ent
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3. Results & Discussion

This part contains the results of the analysis of data obtained with 250 parent-child pairs. The findings look into the role of the household food behavior in determining the nutritional status and health outcomes of children. The relationship between variables including the food availability, structure of meals, dietary diversity, body mass index, emotional eating, and other variables, on the other hand, were analyzed by using SPSS to analyze the correlations among different variables. Results are summarized in tables and figures, and subsequently interpreted in detailed windows to point out important patterns and associations in the data.

4.1 Descriptive Statistics

Table 2: Descriptive Statistics of Key Variables (N = 250)

Variable	Mean	Std. Deviation	Min	Max
Child Age (years)	8.4	2.2	5	12
BMI (kg/m ²)	19.1	3.0	14	28
Dietary Diversity Score	6.5	1.6	3	10
Meal Frequency	3.2	0.8	2	5
Parental Knowledge Score	13.9	3.5	6	20
Emotional Eating Score	3.1	1.0	1	5

Table 2 demonstrates moderate diversity of the diets of children, and a relatively steady level of BMI. There are usually no changes in the frequency of meals, and the knowledge of nutrition in parents is above average. The emotional eating scores imply that psychological factors have a moderate effect on the eating behaviors of kids.

4.2 Correlation Analysis

Table 3: Correlation Between Household Practices and Health Outcomes

Variables	Dietary Diversity	BMI	Emotional Eating
Food Availability	0.59**	- 0.36*	-0.31*
Meal Structure	0.55**	- 0.33*	-0.38**
Parental Knowledge	0.47**	- 0.28*	-0.26*

(* $p < 0.05$, ** $p < 0.01$)

Table 3 shows that there is a positive relationship between the availability of healthy food and dietary diversity ($r = 0.59$). Negative relationships with BMI and emotional eating can be inferred to mean that the household food practices are organized in a way that fosters positive physical and emotional health among children.

4.3 Regression Analysis

Table 4: Multiple Regression Analysis Predicting Child Health Outcomes

Predictor Variables	Beta (β)	t-value	Significance (p)
Food Availability	0.39	6.45	0.000**
Meal Structure	0.34	5.72	0.000**
Parental Knowledge	0.21	3.68	0.001*

$R^2 = 0.51$

Table 4 regression model does explain 51 percent of the variance on child health outcomes. The strongest predictor is food availability then meal structure and knowledge of parents. This attests to the fact that food practices of the household have a strong effect on the nutritional status of children.

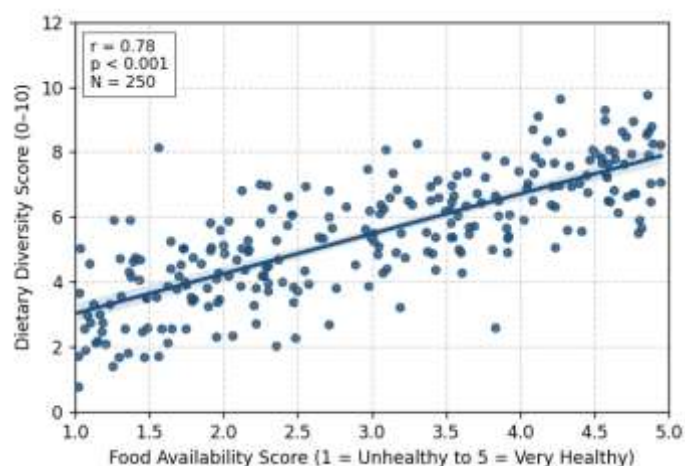


Figure 2: Relationship between Food Availability and Dietary Diversity

The positive relationship between the dietary diversity and healthy food supply is evident in the figure 2. With the rise in the availability of nutritious foods in the household, children are more likely to eat a more diverse and balanced diet, which corroborates the statistical results.

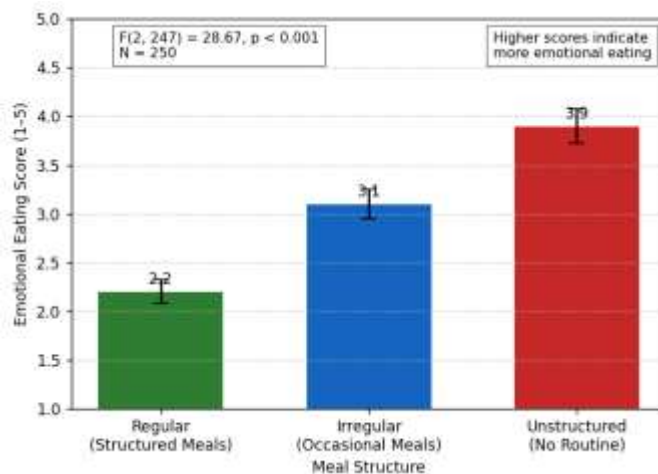


Figure 3: Impact of Meal Structure on Emotional Eating

This figure 3 shows that stable and planned meal habits relate to a decreased emotional eating score. In the families with consistent meal timing, children have better emotional reactions to food, which emphasizes the psychological advantages of consistent food practices.

The findings show that food practices in households have a great influence of determining nutritional and health outcomes on children. Statistical and visual results support the hypothesis that children will develop healthy eating habits, better BMI, and lower emotional eating when placed in an organized and supportive food environment.

4.4 Discussion

The conclusion of this research indicates the important impact of family food characteristics on children nutrient and health outcomes. As previous studies, meal organization and the availability of healthy foods were somewhat spot-on with better dietary diversity and healthier body mass indices. Further, children who had regular meal schedules tended to eat less emotionally, a bit which highlights the psychological advantages of consistent eating schedules. These findings indicate that, quality and systematic practices of household food have a critical influence towards the development of childhood behaviors. Also, knowledge and engagement of parents further reinforced positive results. The research highlights the need to foster supporting and structured home foods conditions. Home based interventions have the potential to increase physical health and emotional state of children in the long run.

4. Conclusion and future scope

The study finds that food behaviors in the household are important in determining the nutritional conditions and general health outcomes among children. Food availability, meal structure and parental involvement have been shown to have a tremendous influence on dietary diversity, BMI and emotional eating behaviors. The data show that children who have grown in organized and conducive food backgrounds are more prone to adopting healthy food habits, have proper body weights, and have improved emotional control over food. These findings affirm the role of household as the key environment where food patterns and health behaviors are established during lifelong.

Nevertheless, its cross-sectional nature and the use of self-reported data restrict the generalizability and cause inference in the study. The future studies must embrace longitudinal designs to monitor any changes over time and are able to better represent the cause effect relationships. Also, it would be interesting to examine how cultural diversity, exposure to digital foods, and socioeconomic differences affect households to gain a better understanding of household dynamics. It is also suggested that intervention-based studies should be done to enhance awareness among the parents and encourage healthy home environment. Altogether, household-related interventions into the framework of the community-wide public health may do much to promote long-term health and well-being of children.

References

1. Birch, L. L., & Ventura, A. K. (2009). Preventing childhood obesity: What works? *International Journal of Obesity*, 33(S1), S74–S81. <https://doi.org/10.1038/ijo.2009.22>
2. Scaglioni, S., Arrizza, C., Vecchi, F., & Tedeschi, S. (2011). Determinants of children's eating behavior. *The American Journal of Clinical Nutrition*, 94(6), 2006S–2011S. <https://doi.org/10.3945/ajcn.110.001685>
3. Patrick, H., & Nicklas, T. A. (2009). A review of family and social determinants of children's eating patterns and diet quality. *Journal of the American College of Nutrition*, 28(2), 83–92. <https://doi.org/10.1080/07315724.2009.10719797>
4. Savage, J. S., Fisher, J. O., & Birch, L. L. (2007). Parental influence on eating behavior: Conception to adolescence. *Journal of Law, Medicine & Ethics*, 35(1), 22–34. <https://doi.org/10.1111/j.1748-720X.2007.00111.x>
5. Sleddens, E. F. C., Gerards, S. M. P. L., Thijs, C., De Vries, N. K., & Kremers, S. P. J. (2011). General parenting, childhood overweight and obesity-inducing behaviors: A review. *International Journal of Pediatric Obesity*, 6(2–2), e12–e27. <https://doi.org/10.3109/17477166.2011.566339>
6. Vaughn, A. E., Ward, D. S., Fisher, J. O., Faith, M. S., Hughes, S. O., Kremers, S. P., Musher-Eizenman, D. R., O'Connor, T. M., Patrick, H., & Power, T. G. (2016). Fundamental constructs in food parenting practices: A content map. *International Journal of Behavioral Nutrition and Physical Activity*, 13(1), 1–14. <https://doi.org/10.1186/s12966-016-0442-0>
7. Blissett, J. (2011). Relationships between parenting style, feeding style and feeding practices and fruit and vegetable consumption in early childhood. *Appetite*, 57(3), 826–831. <https://doi.org/10.1016/j.appet.2011.05.318>
8. Kiefner-Burmeister, A. E., Hoffmann, D. A., Zbur, R. A., Musher-Eizenman, D. R., & Paul, I. M. (2014). Food consumption by young children: A function of parental feeding goals and practices. *Appetite*, 74, 6–11. <https://doi.org/10.1016/j.appet.2013.11.011>
9. Larson, N., & Story, M. (2013). A review of environmental influences on food choices. *Annals of Behavioral Medicine*, 38(S1), S56–S73. <https://doi.org/10.1007/s12160-009-9120-9>
10. World Health Organization. (2016). Report of the Commission on Ending Childhood Obesity. <https://www.who.int/publications/i/item/9789241510066>

11. Larsen, J. K., Hermans, R. C. J., Sleddens, E. F. C., Engels, R. C. M. E., Fisher, J. O., & Kremers, S. P. J. (2015). How parental dietary behavior and food parenting practices affect children's dietary behavior. *British Journal of Nutrition*, 114(12), 1906–1917. <https://doi.org/10.1017/S0007114515003378>
12. Sokol, R. L., Qin, B., & Poti, J. M. (2019). Parenting styles and body mass index: A systematic review of prospective studies among children. *Obesity Reviews*, 20(6), 825–837. <https://doi.org/10.1111/obr.12829>
13. Russell, C. G., Haszard, J. J., Taylor, R. W., Heath, A. M., Taylor, B. J., & Campbell, K. J. (2022). Parental feeding practices and child eating behaviors: A systematic review and meta-analysis. *Appetite*, 168, 105739. <https://doi.org/10.1016/j.appet.2021.105739>
14. Vaughn, A. E., Tabak, R. G., Bryant, M. J., & Ward, D. S. (2022). Measuring food parenting practices: A systematic review of existing measures and future directions. *International Journal of Behavioral Nutrition and Physical Activity*, 19(1), 1–19. <https://doi.org/10.1186/s12966-022-01234-7>
15. Zarnowiecki, D., Dollman, J., & Parletta, N. (2023). Associations between home food environment and dietary intake among children: A longitudinal analysis. *Nutrients*, 15(3), 678. <https://doi.org/10.3390/nu15030678>
16. Berge, J. M., Miller, J., Veblen-Mortenson, S., Kunin-Batson, A., Sherwood, N. E., French, S. A., & Neumark-Sztainer, D. (2023). Intergenerational transmission of eating behaviors: The role of family food practices. *Journal of Nutrition Education and Behavior*, 55(2), 123–132. <https://doi.org/10.1016/j.jneb.2022.09.001>
17. Boyland, E. J., McGale, L. S., Maden, M., Hounsborne, J., & Boland, A. (2022). Digital food marketing exposure and children's dietary outcomes: The moderating role of parents. *Obesity Reviews*, 23(2), e13352. <https://doi.org/10.1111/obr.13352>
18. Spill, M. K., Johns, K., Callahan, E. H., Shapiro, M. J., Wong, Y. P., Benjamin-Neelon, S. E., & Birch, L. L. (2022). Re-examining responsive feeding and child health outcomes: A systematic review. *Pediatrics*, 149(1), e2021053441. <https://doi.org/10.1542/peds.2021-053441>
19. Liu, J., Rehm, C. D., & Onopa, J. (2024). Socioeconomic disparities in household food practices and child nutrition outcomes. *Public Health Nutrition*, 27(1), 45–54. <https://doi.org/10.1017/S136898002300210X>