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Children’s Picky Eating and the Role of Family Environments

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Abstract

Picky eating is often seen as a temporary phase that children go through in the developmental process. While some children never exhibit picky eating behaviors, others seem to get stuck in the tendency of judging foods, which they have never tried, based upon a pretense that the food might not meet with their satisfaction. Learning more about children’s preferred food groups and types of foods, along with the family environmental factors experienced by these children may help to understand ways to support children who struggle with picky eating. Introducing children to new foods within a positive atmosphere, where they are involved with food preparation, may encourage taste acquisition and promote more varied and healthy food preferences.
Introduction

Although much research has been done on the benefits of positive mealtime interaction and environments that encourage healthy food choices, picky or selective eating lacks a clear scientific definition. Picky eating behaviors have the potential to cause lifelong nutritional insults such as childhood obesity or early on-set diabetes (Dominguez, 2014). This study seeks to understand picky eating and its causes as we explore the food choices and family environments of children between 2 - 16 years of age. Parents completed a survey about the food preferences of their child and the usual mealtime patterns within their household. Results suggest that children’s tastes are based upon many factors: type of food (i.e. food group), flavor and texture of foods, frequency of exposures to new foods, children’s involvement in meal preparation, and parental modeling (i.e. eating meals together as a family). Common challenges surfaced among parent participants who wanted to feed healthy meals and snacks to their families but struggle with time, money, and taste preferences. Knowledge of children’s food preferences and family eating environments may provide an understanding of the nutritional challenges encountered by picky or selective eaters. Educating parents on supportive methods of food introduction and family involvement may positively impact acceptance of food from a variety of major food group, sources, and preparation styles.

Literature Review

Ellyn Satter, Ph. D., has been a leader in the field of children’s eating behaviors and promotion of positive mealtime interaction and has written several books on the subject (Satter, 2000; 2008; 1987). The Ellyn Satter Institute provides training and resource materials for parents and professionals in the areas of eating and feeding. Satter created the roles of responsibility in
feeding for adults and children. She specifies that parents decide what food is served, where it is served, and when it is served, while children determine whether or not to eat the food that is served, and how much they choose to eat (ellynsatterinstitute.org). When parents provide healthy foods and model healthy eating behaviors while allowing children to choose how much of those foods to eat, children learn to recognize their bodies natural signals of fullness and slowly learn to eat the foods that are provided for them on a regular basis by emulating parental actions (Satter, 2000; 2008; 1987).

During the toddler stage (18 months-3 years) children begin to exert their independence and vocalize their preferences as a natural part of development. Many parents worry about the health of their children who begin to exhibit picky eating tendencies during this timeframe. However in a recent study of over 4000 participants in the Netherlands, Cano, Tiemier, and Van Hoekan (2015) found that picky eating is generally a temporary behavior, with only a small portion of children (4%) being persistently picky throughout the study from birth to age 6. This study found that children’s picky eating peaked between ages 1 ½ to 3 years but markedly lessened by age 6. Parents can support children throughout this stage by inviting them to choose between several healthy foods (i.e. would you like peas or carrots with dinner?) and helping with developmentally appropriate aspects of food preparation (i.e. washing fruits and vegetables stirring ingredients) of healthy foods as a method to support children’s development of healthy eating habits.

Veugelers and Chu (2015) found that children who are involved with food preparation are more likely to make healthy food choices. The frequency of children helping with meals differed from several times per week to once or twice per month, but the result was the same. Children who helped out in the kitchen showed a greater preference for fruits and vegetables...
over their non-helping peers. An increase of 10% was recorded for children’s preference for eating vegetables after they began helping with food preparation, which shows the potential for behavior change and improved nutrient consumption by children who are involved in meal preparation with their family members.

Because the percentage of children displaying significantly picky eating after the age of 6 is small, the helping behaviors listed may have the greatest potential to help those children with prolonged restrictive eating, whereas the majority will outgrow the tendency toward pickiness regardless of intervention. With that in mind, it may have been more beneficial to survey only parents who have a significantly picky eater to gain the more information about those children and their eating behaviors. Other research has been done relating picky eating to sensory disorders on the Autism Spectrum, but that is not being included for this purpose.

**Method**

An anonymous 37 question survey was designed to gather data about children’s eating habits, family environment, and the division of responsibility related to meal preparation to establish norms for food preparation and consumption patterns. Questions were uniquely developed for this survey and inquired about demographics information such as the gender and ethnicity of the parent respondents. There were no questions related to socioeconomic status or income. Survey invitations were shared through convenience sampling by social media networks of the authors, specifically Facebook and LinkedIn, by inviting parents to participate voluntarily. Past research has shown that eating habits are set in early childhood and well established by the
teenage years, so the scope of this survey was limited to children age 2-16 years (Dominguez, 2014).

**Participants**

39 parent participants successfully completed the survey. The Mean age of parents participating in the survey was 38.9 years old, and the Mean age of children being considered for this survey was 9.4 years old (Graph 1). Parents participating in the survey ranked their child on picky eating behaviors, where one represented not at all picky and ten represented very picky behavior. The Mean picky eating ranking for the children in the survey was 5.6/10.

**Graph 1**

Parents were also surveyed about their child’s most favorite food group and least favorite food group through multiple choice questions. Likert scale questions inquired about children’s food preferences for various types of food (i.e. spicy, bland, fresh, canned, cold, and warm). Open ended inquiries were made about parents’ challenges in serving healthy foods for their children and families. Participants’ responses to the survey questions were content analyzed specifically for food preferences, eating behaviors, environmental factors, and common parent challenges.
Results

By analyzing food preferences and eating environment as compared with parental ratings of children’s picky eating behaviors, the survey revealed preferences for certain food groups and preparation methods (i.e.: raw vs. cooked, mixed together vs. separate, etc.) associated with children’s enjoyment of those foods. Children who ranked as higher in pickiness (rated 8 or higher on 10 pt scale) were less likely to enjoy eating vegetables and more likely to prefer foods from the grain/cereal group.

18 Parents (46% of respondents) reported seven or more meals eaten together as a family each week. This group of parents ranked their child significantly lower (4.66) on the pickiness scale used for this survey than parents who said they ate fewer meals together. 38% of parents reported eating 4-6 meals as a family each week, and the parents rated their children’s picky eating at 5.8. Parents who reported that they had 3 or fewer meals eaten together represented 15% of sample and showed children’s pickiness ratings of 8.0 out of 10 pts Of the 18 parents who reported 7 or more meals together, 15 of those parents also stated that their child helps with meal preparation and clean up. This group ranked their child’s pickiness at 4.73 as compared to the mean for all children ranked of 5.6.

According to this survey, family relations and mealtime environment play a large role in children’s pickiness as perceived by parents based upon children’s food choices. While most parents responding to the survey did not list their child as being overly fearful of trying new foods, very few parents listed the same child as being adventurous in their eating. Of the twelve parents who rated their child 8+ on the pickiness scale, all but one agreed or strongly agreed that the child is also fearful of trying new foods.
Children’s Food Preferences

There is a wide range of variation in the behaviors exhibited by children who are seen as picky or selective by their parents. However, the majority of parents (46%) listed vegetables as their child’s least favorite food group, with fruit and grains being selected as the most common favorites for children overall. For those children whose parents rated them at 8 or higher for pickiness, none of the parents reported that fruits or vegetables were their child’s favorite food group. As compared to the group as a whole, the children with highest pickiness (8+) showed an increased preference for grains (58%), protein (25%), and dairy (16%) (Graph 2).

**Graph 2: Children’s Preferences by Food Group**

![Children's Favorite foods and Least Favorite foods](image)

In seeking to understand children’s preferences about food preparation style, questions were asked about texture, temperature, cooking style and various physical aspects of food children enjoy eating. The results show the majority of children enjoy eating crunchy foods, which contradicts children’s lack of interest in vegetables, which are often crunchy, but may indicate children’s preference for crunchy foods from the grain group, which was the clear favorite (i.e. crackers, chips). Additionally, the clearest response was related to children’s strong
acceptance to food being separated on the plate rather than mixed together. Items from the graph below were compared to ratings of children pickiness to look for commonalities of food preference with pickiness (Graph 3).

**Graph 3: Preferred Food Style of Picky Eaters**

![Preferred Food Style of Picky Eaters](image)

**Parental Modeling**

Most children from this survey (75%) regularly help with meal preparation and clean-up. Children who helped at mealtime showed pickiness of 1.37 points less as compared to those children who did not help according to parental ratings. Nearly half of survey respondents (46%) listed eating seven or more meals together each week. Families that reported eating four or more meals together each week ranked their children with a mean pickiness rank of 5.8, while families
who listed eating three or fewer meals together ranked children’s pickiness at 8.0 The kitchen or dining room was listed as the location where meals were usually consumed by all survey respondents, showing a strong pattern of family interaction by respondents of this survey. The graphs below show survey results for two of the family environments (Graph 4).

**Graph 4: Family Mealtime Environments**

![Child Helps with Meal Prep or Clean Up](chart)

- **Child Helps with Meal Prep or Clean Up**
  - Yes: 25%
  - No: 75%

![Number of Family Meals Per Week](chart)

- **Number of Family Meals Per Week**
  - 1: 5%
  - 2-3: 12%
  - 4-6: 45%
  - 7+: 38%

**Challenges to Meal Time**

Parents shared three common challenges to providing healthy meal and snack options for their children: time constraints, cost, and children’s taste preferences for less healthy fare. Parents included time for meal preparation, over-scheduled families, and ease of convenience foods as factors for the time constraints of healthy eating. The cost of fresh produce and organic food options was repeatedly noted as being more expensive than some convenience foods, which are less nutritious or healthy. When parents chose to serve healthy foods, which often take longer to prepare and cost more money, they mentioned that often times taste preferences kept children from eating what was served simply based on sight, smell, taste or discrimination of texture.
Discussion

Picky eating is not only a matter of taste but is connected to texture, parental modeling, frequency of exposure to new foods, and the role of responsibility at meals (Lukasewyck & Mennella, 2012, Satter, 2000). Many factors impact children’s food choices that may be used to assist in promotion of improved acceptance of nutritionally balanced foods on a regular basis. These include parental modeling of healthy eating behaviors, allowing children to help with meal preparation and clean up, and encouraging children to self-serve (Veugelers & Chu, 2012) which encourages children’s skill building and efficacy as well.

The finding that children prefer fruits over vegetables in this survey confirms results from Veugelers and Chu (2015) study to showed that fruits are preferred to vegetables by children in their study of fifth grade students. The favorite food group shown in this survey was grains/bread/cereal, which coincides with the lack of time for preparation and grocery shopping cited by parents as a challenge to serving healthier fare because grains are often more shelf stable, accessible, and inexpensive per serving.

Children who are actively involved in the process of meal planning, preparation and clean-up are more likely to eat the foods that are being served as part of a family meal. Eating meals together as a family has been suggested as a way to encourage higher diet quality and healthful meal patterns (Larson, Neumark-Sztainer, Hannan, et al, 2007). This concept supports Satter’s Division of Responsibility for parent and children in terms of allowing children to self-serve to choose how much they want to eat.

Lukasewcyz and Mennella (2012) found direct correlation between the frequency and number of exposures to unusual or novel foods supported children’s willingness to try and taste
preference for that food. Glanz, Basil, Maibach, et al (1998) found similar challenges influence American’s food consumption. This confirmed research by Lukasewycz and Mennella (2012) which compared tactile acuity of mothers and children relating to food texture preference.

**Limitations & Future Study**

Several limitations have been noted by the authors. Because the survey was distributed to social media contacts of two white, middle-class females, very few responses came from parents identifying themselves in other ethnic groups or gender categories. Additionally, because of the nature of the survey invitation, the sampling group was not representative of the general population relating to parents level of education. All respondents had some level of college education, with 68% having a 4 year degree or more. It would behoove future researchers to distribute a survey about children’s selective eating to a wider demographic audience to understand a broader view of children’s eating habits.

Additional study of picky and non-picky eaters would be helpful to set parameters for common yet specific foods that are tolerated by each group as well as not-tolerated or not tried due to predisposition of assignment to an unfavorable taste or texture group. Further survey of adults would aid in determining longevity and consistency of picky eating tendencies throughout their lifespan, questioning whether pickiness is related to maturity, taste (which is known to change over time), or negative mental assignment of specific food traits.

Research to qualify and quantify the number and types of foods that children prefer would be beneficial to establish specific criteria for nutritional intervention services or parental education programs. Because there is no scientific definition for picky eating, it is difficult to
determine when intervention may be most beneficial for potential behavior change. Having measurable data to suggest a threshold for intervention would allow for health care coverage of these services or economic assistance to provide for accessibility to foods with high nutritional value as compared to child friendly processed food items that are easily accessible through fast food and convenience packaging of low nutrient options.

This research alone does not define picky or selective eating, but instead adds to the body of knowledge relating to eating behaviors and environmental factors that may influence children’s choices and preferences for certain food or food types. Knowing that children naturally gravitate toward certain food groups helps adults to identify areas that may be lacking or in need of promotion for a balanced diet. Understanding family dynamics and mealtime interactions adds a relational component to the eating behaviors of children who often strive for autonomy, while also being under their parent’s control.
References


Biography of author

As a recent graduate of Minnesota State University, Maureen Lyons has personally struggled with picky eating her entire life. It is her personal challenges with food that have inspired Ms. Lyons to do this research, to write about it and to teach others about working with picky eaters to make small accommodations to allow freedom of choice and comfort to explore new foods in a safe environment, free of teasing or punishment for not being part of the clean plate club. Ms. Lyons lives in Owatonna, MN and works for Learning ZoneXpress, publisher of nutrition and wellness education resources.

Biography of mentor

Heather Von Bank is an Associate Professor of Child Development and Family Studies in the Department of Family Consumer Science at Minnesota State University-Mankato. Her research and teaching interests are in adolescent-parent-peer linkages, parenting education, and the role of play in children's development.