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Food Selection Behaviors Of Children In A Buffet Setting

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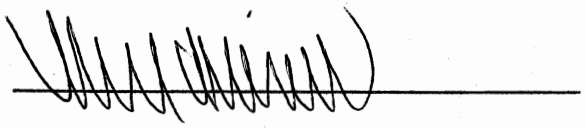

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Food Selection Behaviors of Children in a Buffet Setting

BY

Megan J. Merrill

THESIS

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Abstract

The purpose of this study was to evaluate food choices made by children of varying ages when a wide assortment of both healthy and unhealthy food items were available. The results were used to assess the importance of caregiver influence with regard to children's dietary intakes and to determine significant relationships between age, food preference, and relevant behavioral patterns.

Fifty children between the ages of 3 and 15 were observed in buffet-style restaurants with their caregivers. A food and beverage selection checklist was used to determine children's food selections when each food group was present and available to them. A behavioral checklist consisting of 19 key points was used to identify specific child behaviors that are congruent with Albert Bandura's social learning theory. Data were analyzed with MANOVA and t-tests.

Six hypotheses regarding children's age, adult accompaniment, and food selection were presented in this study. Results indicate that age plays a significant role in the food choices made by children. This study found that there is a relationship between children's age and the number of categories children select food from and the food items chosen. The results dismiss the idea that adult gender and accompaniment are significantly related to the number of categories and food items selected.

Dedications

This study is dedicated to my sons, Noal and William. Their big blue eyes and unconditional love were constant reminders that I need to persevere so they can persevere. It is my sincere hope that they will put forth the effort to reach their goals in life, because goals can't be obtained without action.

This study is also dedicated to Noal's father, CW3 Brian D. Hazelgrove. Brian passed away January 23, 2009, in Mosul, Iraq. His love and compassion for family and dedication to life inspired me to reset my goals and redefine the meaning of life. Rest in peace, Brian.

Acknowledgements

I would like to thank the following individuals for their assistance during the research process:

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Dr. Mikki Meadows, my graduate advisor, for reminding me that I had the ability to complete a thesis. Your expertise in child development was a proven asset to this study. The example you set as both as a professional and hard worker encouraged me to finish a challenging, yet rewarding, graduate program.

Dr. Lisa Taylor, for serving on my thesis committee with undeniable enthusiasm and genuine concern for my success. You are a research powerhouse, and your continuous zest for student achievement inspired me to get through the late nights of writer's block and recognize my true potential as a graduate student.

Dr. Lisa Brooks, for serving on my thesis committee with a true passion for nutrition. You provided a level of knowledge that enabled me to address specific issues regarding children's food choices. Your kind words of encouragement were a refreshing reminder that I was strong enough to

reach my ultimate goal in graduate school—to conduct research dedicated to healthy lifestyles for children.

I am honored to have had the opportunity to work with a respectable group of professionals. They remained committed to my study and encouraged me to present and defend a thesis to my utmost ability.

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Chapter 1

Introduction

The Department of Health and Human Services Centers for Disease Control and Prevention reports that 16.3% of children between the ages of two and 19 are obese, weighing above the 95th percentile on the 2000 BMI-for-age growth charts (Ogden, Carroll, McDowell, & Flegal, 2008). In 2000, the CDC broke down obesity with regards to ethnicity and found that 16% of white, 19% of African American, and 20% of Mexican American children are affected (Caprio et al., 2008). While the childhood rate of obesity tripled through the 1980s and 1990s, it presently remains stable. However, the problem of childhood obesity is still prevalent and today's obese children remain at risk for high blood pressure, diabetes, heart disease, and weight issues through adulthood. High-caloric foods, decreased activity levels, and caregiver influence significantly contribute to poor nutritional health in children (Roblin, 2007), which in turn can lead to obesity.

Purpose of Study

The purpose of this study was to evaluate food choices made by children of varying ages when a wide assortment of both healthy and unhealthy food items were available. The results were used to assess the importance of caregiver influence with regard to children's dietary intakes and to determine significant relationships between age, food choices, and relevant behavioral patterns.

Benefits of Study

This research study was significant to health and education professionals, families, and caregivers. Unhealthy eating habits, especially in childhood, often result in weight and health issues that become difficult to overcome in adulthood. This study was

needed to recognize specific relationships between caregiver influences and food choices of children. Findings will enable professionals to better understand and address negative influences on children's food choices and assist in the management of current childhood obesity issues. The identification of associations between age, behaviors, and food choice will allow professionals to target children during vital developmental stages and both educate and encourage at-risk youth to heed healthy food choices as a lifelong obligation.

Hypotheses

This study was designed to test six hypotheses:

1. There is a significant difference in the number of categories from which children select food when comparing children accompanied, and children not accompanied, by adults at a buffet.
2. There is a significant difference in the number of food items selected within each food category between children accompanied, and children not accompanied, by adults at a buffet.
3. There is a significant difference in the number of categories from which children select food when comparing younger children and older children.
4. There is a significant difference in the number of food items selected within each food category when comparing younger children and older children.
5. There is a significant difference in the number of categories from which children select food when comparing children accompanied by female adults and children accompanied by male adults.

6. There is a significant difference in the number of food items selected within each food category between children accompanied by female adults and children accompanied by male adults.

Research Design

This study utilized observations within a natural setting to determine specific relationships. Data collection took place over a two week time period. Differences in children's food choices between specific age groups were also examined. Data were collected to analyze demographic information and identify differences among specific groups. The qualitative approach was used to identify themes within the researcher and assistant's observational comments.

Theoretical Base

The primary theoretical base for this study was Albert Bandura's social learning theory. Concepts related to the theory were used to study continuous joint interactions between cognitive, behavioral, and environmental influences during observations. Bandura suggested that children learn through the observation of others' behaviors and attitudes and the outcomes of those behaviors. The researcher focused on ways children imitate food choices based on adult influence. The social learning theory was applied to this study in the following manners:

1. Transforming a negative environment into a more positive one will promote healthy eating.
2. Providing accurate information to discount erroneous notions will correct beliefs about healthy food choices.
3. Adopting healthy behaviors will require special training.

4. Achieving optimal learning will result from the observation of others, especially caregivers.
5. Rewarding good eating behaviors will result in the recurrence of such behaviors.
6. Building confidence with small steps will result in healthier dietary intakes (THCU, 2003).

As applied to this study, the social learning theory holds that caregiver structure, control, and environment will influence children's dietary behaviors in the absence of adult guidance because children learn from adults via observation, imitation, and modeling. Children continue to model the behaviors seen when outside of an adult's direct control.

Definitions

Terms used throughout this study include:

1. Caregiver - an individual who provides direct care (Merriam-Webster, 2009).
2. Younger children - between the ages of three and seven.
3. Older children - between the ages of 11 and 15.
4. Themes - recurrent ideas or actions that connect caregivers to regular food intake.
5. Child development - the continuing process of growth that includes mobility, thinking, and emotion (Di Leo, 1977).
6. Behaviors - reactions to internal and external stimuli (Merriam-Webster, 2009).

7. Buffet-style restaurants are establishments that provide an assortment of food items at a fixed price in an environment that promotes self-selection (Chon & Sparrowe, 2000).
8. Healthy food - food items believed by the researcher to be beneficial to the growth and development of children.
9. Unhealthy food - food items believed by the researcher to be disadvantageous to the growth and development of children.

Limitations and Assumptions

A potential weakness in the design of this study was the limited geographical location of the participants. This study did not undertake a national analysis of childhood obesity and its relation to age, child development and caregiver influence, diversity, and food choices. In addition, it was presumed that the assistant recruited to aid the researcher fully understood the instructions provided in training sessions.

Summary

Childhood obesity is a concern in today's society. Obese children remain at risk for high blood pressure, diabetes, heart disease, and weight issues through adulthood. Issues of childhood obesity can be better understood by examining the factors that contribute to its cause. Caregiver influences impact regular food choices made by children. Identifying factors contributing to the eating habits of children will enable professionals to better understand and address negative influences on childhood nutrition and assist in the management of current childhood obesity issues. The following chapter will review research that has addressed the eating habits of children, effects of caregiver influence and diversity, and nutritional requirements.

Chapter 2

Literature Review

Maintaining a healthy lifestyle is an essential part of the human life cycle. The United States Department of Agriculture provides guidelines to promote optimal nutritional health. Children's dietary intakes are greatly influenced by caregiver controls and guidance. The topics reviewed in this chapter address buffet-style restaurants, dietary guidelines, familial structure and food consumption, caregiver involvement, and children's food selections.

Buffet-style Restaurants

Buffet-style restaurants offer a variety of foods to consumers for a fixed price. They offer an assortment of home-style and cultural dishes, fresh fruits and vegetables, desserts, and beverages. Consumers are not limited to a menu, and food items are on display. Many buffet chains offer open-flame grills and themed meal options to include Chinese, Italian, Mexican, and seafood. Popular buffet restaurants in the United States include: (a) HomeTown Buffet, (b) Golden Corral, (c) Ryan's Grill Buffet and Bakery, (d) Ponderosa, and (e) Old Country Buffet. The Golden Corral received the 2009 Reader's Choice award for best buffet (Kiest, 2009). In 2007, Golden Corral reported system wide sales totaling $1.530 billion (Jennings, 2008). Buffet restaurants advertise with a focus on family, togetherness, and fun.

Rindge (2008) explained the following:

> According to the U.S. Bureau of Labor Statistics, American families spent on average $2,634 on 'food away from home' in 2005, compared with $2,211 just two years earlier. That amounts to about 45 percent of their entire food budget.

> Households headed by someone between 35 and 44 years of age spend the most on dining out, $2,238 on average, while those under age 25 spend the highest percentage, 51 percent, of their food budget away from home. (p. B16)

The most common types of restaurants are: (a) limited service or fast food, (b) full-service casual with alcohol, (c) family dining without alcohol, (d) fine dining, and (e) buffet-style.

Childhood Obesity

Obese children have a body mass index greater than the 95th percentile for their age and gender (Strauss, 2000). Body mass index is defined as an individual's "weight in kilograms divided by the square height in meters" (Gordon, Crepinsek, Briefel, Clark & Fox, 2009, p. S132). Consumption of low-nutrient, energy-dense, and high-sugar content food and beverage items are factors that lead to childhood obesity. The Bogalusa Heart study found that 77% of children with BMIs greater than the 95th percentile for age and gender remained obese as adults (Freedman, Khan, Dietz, Srinivasan & Berenson, 2001). Obese children remain at risk for high blood pressure, diabetes, heart disease, and weight issues through adulthood.

Dietary Guidelines

"The *Dietary Guidelines for Americans* are the cornerstone of federal nutrition policy and nutrition education activities" (USDA, 2005). They are updated every five years to provide dependable information for individuals over the age of two about the importance of healthy eating habits. Daily dietary guidelines include:

1. 2 cups of fiber-rich fruits.
2. 2 ½ cups of fresh vegetables.

3. At least 3 sources of whole grains.
4. 3 cups of fat free or low-fat milk.
5. Less than 2300 mg (1tsp.) of salt.
6. Between 30% and 35% total calories from fat for two to three year olds.
7. Between 25% and 35% total calories from fat for four to 18 year olds (USDA, 2005).

Most sources of fat should be from either poly- or monounsaturated fat sources—fish, nuts, or vegetable oils.

Familial Structure and Food Consumption

Families that eat together tend to consume greater quantities of fruits and vegetables, with no significant difference between one-parent and two-parent homes. Asian American families tend to eat more meals together than White, African American, Hispanic, and Native American families (Neumark-Sztainer, 2006). A significant relationship has been found between food available to children within the home and amount of unhealthy food consumed (Young, Fors & Hayes, 2004). Gable and Lutz (2000) found that greater quantities of sweets available within the home environment resulted in more fat and sugar consumption by children. Single parent homes and families with two working parents prepared more meals high in fat and sodium (Crockett & Sims, 1995). Low-income fathers displayed the most interest for planning, preparing, and cooking inexpensive and healthy meals for their children (Baughcum, Burklow, Decks, Powers & Whitaker, 1998). Obese children were more likely to come from one-parent and low income households. For each $5,000 that disposable income decreases, the odds of childhood obesity increases by 0.78 (Gable & Lutz, 2000).

Parental Control

Parental control during mealtime significantly influences a child's ability to regulate caloric intake. As parental pressure increases, the child's individual regulation decreases (Birch & Fisher, 1995). Lack of parental involvement can also result in poor nutritional habits for children, because they are not given the opportunity to observe and learn how to recognize feelings of fullness. Children must be able to identify and accept healthy food items to develop good nutritional habits.

Bandura's Social Learning Theory

Bandura proposed that children learn by observing and modeling their behaviors, attitudes, and emotional reactions after others (Schmidt, 2008). He stated that most children under the age of five have a great dependence on visual images, because they cannot completely think in words (Crane, 2005). This lack of metacognitive skills supports the idea that children will learn to eat certain food items based on visual observations of peers, caregivers, pictures, and the media. A study involving preschool children found that seating young children who regularly ate vegetables next to peers that did not regularly eat vegetables at lunchtime resulted in an increase of vegetable consumption by children that did not regularly eat vegetables (Birch, 1980).

Bandura also suggested that children are more receptive to the actions of an adult rather than verbal instruction. Brown and Ogden (2004) conducted a study that revealed the importance of effective caregiver role modeling in the development of healthy eating habits in young children. Dietary control methods did not prove to be as valuable as positive role modeling. Coercive demands are often ineffective, and can result in

oppositional behaviors, such as consuming a greater portion of unhealthy foods (Crane, 2005).

Reciprocal determinism assumes that behavior results from environmental and personal factors and that behavior, in return, affects environmental and personal factors in constant reciprocal relationships (Bandura, 1986). Children's eating habits are acquired through the observation, imitation, and modeling of significant role models such as parents, siblings, and peers. The eating habits obtained ultimately affect the children's physical and mental health, weight, and ability to perform regular physical activities.

Bandura's steps to self-efficacy can be employed to change unhealthy caregiver eating habits. First, caregivers or older children must recognize and consider the need for a change in dietary intakes. Next, they must desire the change and put forth the effort necessary to modify nutritional behaviors. They will need the physical and mental strength necessary to overcome challenges associated with dietary modifications. Finally, they will need to preserve the changes made without falling back into unhealthy habits (Bandura, 2004).

With the aid of Bandura's self-efficacy appraisals, caregivers can lay the foundation for healthy eating habits at home. Bandura contends that actual performance is the most powerful source of knowledge. When an individual feels accomplished after completing a specific task, he or she is more likely to repeat it. If failure results, self-efficacy decreases and the task is less likely to be repeated. Vicarious experiences allow one the ability to believe in success when others are observed succeeding, and verbal persuasion enables one to accomplish a task upon verbal motivation. "Bandura has sketched out, in a very preliminary way, the development of self-efficacy over the life

span. Infants develop a sense of self-efficacy as they explore the environment and get the sense that they can have some control over it. As children grow, their social world widens. They look to peers as models of self-efficacy and also as sources of social comparison" (Crane, 2005, p. 208).

Bandura's social learning theory can be applied to the development and modification of children's eating habits by utilizing successful peer modeling techniques, encouraging caregivers to become positive role models, and using self-efficacy steps to modify unhealthy eating habits.

Nutrition and Toddlers

The relationship between caregiver and child is essential to the child's nutritional habits. It is the caregiver's responsibility to provide healthy meals and snacks while ensuring a positive eating environment. Early eating patterns tend to extend into adulthood, and obese children often become obese adults. Parents serve as constant role models for children, especially toddlers, and have a significant influence over their eating habits (Golan, Fainaru & Weizman, 1998). Toddlers learn what they should and should not eat in part from parents, and parental belief about what is healthy is often misconstrued. For example, mothers are likely to use unhealthy food items to calm an unreasonable toddler, while fathers are more likely to use discipline (Baughcum et al., 1998). Barriers to providing healthy meals for toddlers include (a) scarcity of time, (b) external challenges, and (c) toddler health problems (Omar, Coleman & Hoerr, 2001). Parents cite a lack of available time to prepare and cook healthy meals, feed a fussy toddler, and purchase groceries as occasional obstacles. Work, college, lack of available funds, and unreliable transportation were common external challenges noted by parents.

Nutrition and Preschoolers

Children between the ages of two and five benefit most from regular companionship during mealtime. Children in this age group are impressionable; they observe older siblings and parents and base their dietary likes and dislikes accordingly. Social contacts at the dinner table stimulate this particular age group and help them develop either positive or negative table manners. The mismanagement of nutritional intake, food aversions, and parental misunderstandings of sustenance affect early eating experiences. Parents tend to be more aware of what is consumed by their preschoolers than of older children, because more time is spent interacting with younger children. Parents are more in-tune to the child's nutritionals needs; most parents monitor what is put into the child's mouth, making certain it is safe and edible.

Feeding preschoolers and building healthy food habits should include:

1. Comprehensive knowledge of food and nutrition.
2. Accepting child's individuality.
3. Willingness to assess techniques and tools used to develop good eating habits (Weng, 1950, p. 157).

Early and Middle Childhood Nutrition

"During early and middle childhood, parents and family environment are key influences of the development of food preferences, patterns of food intake, eating styles, activity preferences, and patterns that shape children's developing weight status" (Birch & Davison, 2007, p. 938). Parental influence decreases as the child ages; older children become more autonomous, spending more time eating away from home. Children in middle school begin to observe and imitate peers more often than parental role models. It

has been found that at least 30% of their diet consists of candy, soft drinks, and fast food. Soft drinks make up 10% of their daily caloric intake (McGinnis, Gootman & Kraak, 2006). Daily incidents of snacking increases and more calories are derived from snacking than regular meal consumption (Jahns, Siega-Riz & Popkin, 2001). Middle-school children tend to consume lesser amounts of milk, vegetables, whole grains, and eggs. They opt for more soft drinks, juices, potato chips, and cheese (Niklas, Morales, Linares, Yang & Baranowski, 2004).

Adolescent Nutrition

Individuals between the ages of 11 and 18 base their primary food choices on taste, familiarity, habit, health, and weight control (Contento, Michela & Goldberg, 1988). Peer influence tends to become stronger than parental influence for teenagers. Nutritional needs are greater during the adolescent years than any other life period (Story, Holt & Sofka, 2000), yet most fail to meet recommended daily requirements. Seventy percent of adolescent females and 57% of adolescent males do not consume enough calcium; 68% of females and 71% of males eat less than five servings of fruits and vegetables per day; and 48% females and 55% males eat too much fat (Neumark-Sztainer, 2006).

Teenagers will eat more fruits and vegetables when family meals are consistent within the home environment. Family meals result in a decrease of unhealthy dietary intakes and reduce the likelihood of developing an eating disorder. "Teens in families that make eating meals together a priority, provide rules and structure to mealtimes, and maintain an enjoyable mealtime atmosphere are less likely to engage in unhealthful eating and dietary behaviors" (Neumark-Sztainer, 2006, p. 102).

A study assessing nutritional behaviors of high school students found that when parental guidance and control were consistent at home 27.4% high school students always or often thought about their health and 19.2% always or often thought about their weight while eating in the school cafeteria. Two-thirds felt healthy eating was important, and 31% considered fat content when making nutritional choices. Forty-two percent had difficulty identifying foods as either low-fat or high-fat, 48.4% preferred labels that indicated fat content, and 31.6% would use the food labels to make independent decisions based on fat content. Females were more interested in weight issues and healthy eating habits than males. The study also found that taste was more important to the younger participants, and health was more important to older participants (Shannon, Story, Fulkerson & French, 2002).

Summary

Sufficient research was available to provide a foundation for this study. The results of this study will help professionals determine vital age groups, the affects of caregiver influences, appropriate and inappropriate youth behaviors, and themes necessary to combat issues regarding childhood obesity issues. Nutritional education can be revised and applied to specific areas of interest that have evolved as a result of this study.

Chapter 3

Methodology

The purpose of this study was to evaluate food choices made by a group of diverse children of varying ages when a wide assortment of healthy and unhealthy food items were available. This study involved observations within a natural setting to determine specific relationships. Data collection took place over a two week time period.

Hypotheses

This study examined six hypotheses:

1. There is a significant difference in the number of categories children select food from between children accompanied and not accompanied by adults at a buffet.
2. There is a significant difference in the number of food items selected within each food category between children accompanied and not accompanied by adults at a buffet.
3. There is a significant difference in the number of categories children select food from between younger children and older children.
4. There is a significant difference in the number of food items selected within each food category between younger and older children.
5. There is a significant difference in the number of categories children select food from between children accompanied by female adults and children accompanied by male adults.

6. There is a significant difference in the number of food items selected within each food category between children accompanied by female adults and children accompanied by male adults.

Participants

The population was comprised of caregivers and their children between the ages of 3 and 15 consuming meals at two buffet-style restaurants. The sample included 50 children and their adult caregivers. For the purpose of this study, children between the ages of three and seven were considered younger children. Children between the ages of 11 and 15 were considered older children. Age estimation and the elimination of children between the ages of 8 and 10 enabled the researcher and assistant to more effectively categorize children as either younger or older. Caregivers were the primary adults tending to the children at each restaurant.

Instrumentation and Measurement

The study occurred in buffet-style restaurants located in Champaign, Illinois and Terre Haute, Indiana. The self-serve nature of buffet-style restaurants allowed the researcher to observe children making food selections when each food group was present and available to them. Restaurant managers were contacted for permission to observe in the setting via telephone and written request two weeks prior to observations. The written request (Appendix A) provided contact information for both the researcher and the thesis advisor, in case management had questions or concerns regarding observational techniques. Before observations began, the researcher met with restaurant management to prepare a list of buffet items (Appendix B).

Each restaurant was observed twice. Observations took place on Tuesday and Friday evenings between 5 p.m. and 8 p.m. Evening hours provided the researcher with

an adequate sample of children consuming meals with caregivers. For instance, noncustodial fathers often have parenting time with children beginning on Friday evenings, and this granted the researcher with a larger sample of children's food choices when accompanied by male adults (Koch & Lowery, 1984).

The researcher and assistant were unknown to participants during observations, and families were not interrupted during their meals. The researcher and assistant were seated close to the buffet line to note food items selected by children and behaviors and interactions that occurred during food selection. Detailed checklists were used to ensure succinct and accurate data collection. The Behavioral Checklist (Appendix C) was drafted by the researcher, and it utilized Bandura's social learning theory to collect pertinent data concerning caregiver influence and children's observations, imitations, and modeling. The Child's Food and Beverage Selection Checklist (Appendix D) was developed by the researcher and used to document children's food and beverage selections. It was modeled after the USDA Food Pyramid.

The assistant was instructed to note specific details that enabled the researcher to examine each hypothesis. The assistant was asked to observe the presence of caregiver controls and guidance during the children's food selections. This helped to determine the role of adult influence and whether or not younger children were more likely than older children to consume items that the researcher defined as healthy foods. The assistant was briefed on the characteristics and behaviors of children based on age. This enabled the assistant to classify children by age and place them in the correct category for data analysis.

Checklists were reviewed for validity by an expert panel of Family and Consumer Sciences professionals. Space was provided on each checklist to allow the researcher and assistant to note additional behaviors not covered by the checklists. The researcher and assistant reviewed the comments to look for patterns or themes that parallel Bandura's social learning theory.

Data Collection and Procedures

The researcher was accompanied by an assistant, an elementary school teacher's aide with twelve years of experience working with children. Her employment duties include regular classroom interaction with young children and weekly lunchroom monitoring. The researcher found her qualified to observe children's behaviors and food selections. The researcher provided training to the assistant one week prior to the study. Training included a packet of information regarding daily nutritional requirements for children and guidelines for observations. The packet also included pictures of children from different age groups to help the assistant classify children according to age during observations. A review of the training session took place one hour before each restaurant observation began in order to answer questions and address pertinent data collection guidelines. The researcher and assistant were located at tables near the buffet. This allowed them to note food selections and behaviors without being intrusive. Written data collection was obtained via checklists. A clipboard, folder, paperclips, and pencils were provided.

The researcher and assistant used identification markers to track each child. Identification markers included hat colors, shirt designs, shoe brands, and hair styles. The marker was listed on the behavioral and food selection checklists assigned to the child. A

paperclip was used to attach the behavioral checklist to the food selection checklist. Tracking each child with identification markers enabled the observers to properly identify the child and retrieve checklists for children who made additional trips to the buffet line. Attaching the checklists also enabled the researcher to effectively evaluate each child's behaviors and food selection during data analysis. The assistant observed male children in Terre Haute and female children in Champaign, and the researcher observed female children in Terre Haute and male children in Champaign t reduced the possibility of observing the same child twice in each restaurant. Alternating genders between locations also prevented unintentional bias on behalf of the researcher and assistant.

Pilot Study

A pilot study was conducted by the researcher and assistant one week before observations began. The purpose of the pilot study was to test observational methods prior to performing them on a larger scale. The researcher and assistant observed caregivers and children at a Charleston, Illinois Chinese buffet restaurant for two hours. The Behavioral Checklist and Child's Food and Beverage Checklist were used to gather data. The pilot study enabled the researcher and assistant to practice effective data collection and organizational techniques. The format of the checklists proved useful for data collection; therefore, no changes were made to the original checklists.

Data Analysis

Data were analyzed using SPSS 17.0. Descriptive statistics were used to provide demographic information. MANOVA was used to analyze variances in hypotheses two, four, and six. The researcher used MANOVA to evaluate differences in fruits, vegetables, meats and beans, carbohydrates, sugars, and milk between children accompanied and not

accompanied by adults, younger children versus older children, and children accompanied by a female adult opposed to a male adult during food selection. T-tests were used for hypotheses one, three, and five to assess differences between group means. The researcher used t-tests to detect statistical significances in the number of categories children select food from with regards to adult accompaniment, age of child, and parental gender. Results specific to Bandura were assessed by comparing the participants' behaviors to his social learning theory.

Summary

Data collection of 50 children and their caregivers occurred at two buffet-style restaurants. The assistant was properly trained to retrieve valuable data, and a pilot study was conducted to assess the researcher's data collection instruments and make necessary adjustments. Data were analyzed with MANOVA and t-tests. The results from the data collection were used to determine relationships between caregiver influence and regular dietary intakes for children and the effects of caregiver influence on children's nutritional habits

Chapter 4

Results

The purpose of this study was to evaluate food choices made by a group of diverse children of varying ages when a wide assortment of healthy and unhealthy food items were available. This study involved observations within a natural setting to determine specific relationships. The data are reported, analyzed, and discussed in this chapter.

Description of the Sample

The sample consisted of 50 children between the estimated ages of three to 15 and their caregivers. The researcher and assistant observed 20 children in Terre Haute, Indiana and 30 children in Champaign, Illinois. For the purpose of this study, children between the ages of three and seven were categorized as younger children. Children between the ages of 11 and 15 were categorized as older children. Sixty-six percent of the children were younger (n=33), and 34% of the children were older (n=17). Age estimation and the elimination of children between the ages of eight and 10 enabled the researcher and assistant to more effectively categorize children as either younger or older. Forty-two percent of the children were male (n=21), and 58% of the children were female (n=29).

Twenty-seven younger children were accompanied to the buffet by an adult. The accompanying adults consisted of 11 males and 16 females. None of the 17 older children were accompanied to the buffet during this study.

Food items available to the participants at both locations are listed in Appendix B. The typical child selected more vegetables and grains than other food categories and averaged less than one fruit per meal. If a food item could be classified in more than one

category, then it was documented as one item in each applicable category. For example, fried chicken was marked as one fat item and one meats and beans item. Appendix E displays how food items were categorized by the researchers for statistical analysis.

Findings for this study are presented and reported by individual research hypothesis. Results of the Behavioral Checklist are reported following hypotheses findings.

Hypothesis One: Caregiver Accompaniment and Categories of Food Selected

Hypothesis one assumes a significant difference in the number of categories from which children select food when comparing children accompanied, and children not accompanied, by adults at the buffet. The number of food categories from which children select food from was the dependent variable, and children accompanied and not accompanied by adults were independent variables. Twenty-seven children were accompanied by an adult at the buffet, and 23 children were not accompanied. The nine food categories used in this study include: (a) fruits, (b) vegetables, (c) milk, (d) dessert, (e) beverage, (f) meats and beans, (g) grains, (h) fats and oils, and (i) other. Completion of an independent-samples t-test determined accompanied children had a mean selection of 5.81 food categories, and unaccompanied children had a mean selection of 5.65 food categories. The results indicate no significant difference in the number of food category selections between accompanied and unaccompanied children, $t(48) = .50$, $p = .62$. Accompanied children and unaccompanied children take food from the same number of categories; therefore, hypothesis one is rejected.

Hypothesis Two: Caregiver Accompaniment and Food Items Selected

Hypothesis two assumes a significant difference in the number of food items selected within each food category between children accompanied, and children not accompanied, by adults at the buffet. The number of food items selected was the dependent variable, and children accompanied and not accompanied by adults were the independent variables. MANOVA testing indicated no significant difference in the number of food items selected between children accompanied and unaccompanied by adults at the buffet, $F(7,42) = .96$, $p = .48$. Accompanied children had a mean selection of 0.7 fruits, 2.0 vegetables, 1.4 grains, 1.4 meats and beans, 1.8 milk products, 1.0 desserts, and 0.7 fats and oils. Children not accompanied by adults had a mean selection of 0.6 fruits, 1.9 vegetables, 2.1 grains, 1.8 meats and beans, 1.4 milk products, 1.0 desserts, and 1.2 fats and oils. Hypothesis two is rejected. Prior studies could not be located by the researcher to either support or refute these findings.

Hypothesis Three: Age of Children and Categories of Food Selected

Hypothesis three assumes a significant difference in the number of categories from which children select food when comparing younger children and older children. The number of categories from which children select food was the dependent variable, and younger and older children were the independent variables. Results from an independent-samples t-test indicate a significance of $p = .07$. Significance is normally considered with $p < .05$; however, $p < .10$ was used with this research study due to the small sample size, new instrumentation, and the unique aspects of this particular study. Findings indicate older children select from more food categories than younger children, $t(48) = -1.9$, $p = .07$. Older children had a means selection of 6.12 food categories, while

younger children had a means selection of 5.55 food categories. Hypothesis three is accepted. These findings support a focus group exploration performed by Chambers, Lobb, Butler, and Traill (2008) which also found older children more likely to select from more food categories than younger children.

Hypothesis Four: Age of Children and Food Items Selected

Hypothesis four assumes there is a significant difference in the number of food items selected within each food category when comparing younger children and older children. The number of food items selected was the dependent variable, and younger and older children were independent variables. MANOVA testing indicated a significant difference, $F(2,42) = 2.8$, $p = .00$. Posthoc tests indicated that older children selected more meats and beans, grains, and fat items than younger children. Hypothesis four is accepted. This finding is supported by research conducted by Chambers, Lobb, Butler, and Traill (2008). The results are displayed in Table 1.

Hypothesis Five: Adult Gender and Food Categories

Hypothesis five assumes a significant difference in the number of categories from which children select food when comparing children accompanied by female adults and children accompanied by male adults. The number of categories from which children select food is the dependent variable. Children accompanied by female adults and children accompanied by males adults were the independent variables. Eleven children were accompanied by male adults, and 16 children were accompanied by female adults. The adult male means was 6.09, and the adult female means was 5.63. Results indicated no significant difference, $t(25) = 1.0$, $p = .32$. Hypothesis five is rejected.

Table 1
Age of Children and Mean Number of Food Items Selected

	Total n=50 mean (SD)	Younger n=33 mean (SD)	Older n=17 mean (SD)
Fruits	.68 (1.02)	.82 (1.10)	.41 (.80)
Vegetables	1.98 (1.69)	1.94 (1.50)	2.06 (2.05)
Meats/Beans	1.58* (1.23)	1.24 (0.94)	2.24 (1.48)
Grains	1.74* (1.50)	1.30 (1.38)	2.59 (1.37)
Milk	1.58 (1.31)	1.70 (1.43)	1.35 (1.06)
Fats/Oils	.90* (.93)	.55 (.67)	1.59 (1.00)
Sugar	1.00 (1.23)	.85 (1.18)	1.29 (1.31)

* $p<.05$

Hypothesis Six: Adult Gender and Food Items Selected

Hypothesis six assumes a significant difference in the number of food items selected within each food category between children accompanied by female adults and children accompanied by male adults. The number of food items selected was the dependent variable. Children accompanied by female adults and children accompanied by male adults were the independent variables. MANOVA testing found no significant difference, $(7,19) = .4$, $p = .89$. Hypothesis six is rejected. Prior studies refute this finding and note healthier eating habits in adolescents accompanied by noncustodial fathers, where it was found that they consume breakfast and lunch on a regular basis and consume greater amounts of vegetables (Stewart & Menning, 2009).

Results Obtained from the Behavioral Checklist

The Behavioral Checklist incorporated 19 key points that were used to gather data relevant to caregiver influences and children's observation, imitation, modeling, and attention behaviors. The results helped to identify specific child and adolescent behaviors that parallel Bandura's social learning theory. Key points 1 through 5 address children's observations, 6 through 9 address children's imitation and modeling, 10 through 16 address caregiver involvement, and 17 through 19 address children's attention.

Sixty-one percent of younger children and 20% of older children observed the food selection of caregivers and other restaurant customers. Only 12% of younger children and 10% of older children observed the portion sizes of caregivers and other restaurant customers. Ninety-one percent of younger children observed caregiver comments about portion sizes, compared to 24% of older children. Caregiver consumption of healthy food items before unhealthy food items was observed by 36% of younger children and 56% of older children. Only 12% of younger children and 4% of older children observed caregiver reactions to the younger children's individual food selections.

Seventy-six percent of younger children's food choices were affected by the food selection of others, compared to 14% of older children. Thirty-six percent of younger children and 48% of older children had portion sizes similar to caregiver portion sizes. Caregiver comments about buffet items were repeated by 67% of younger children and 20% of older children. Ninety-one percent of younger children imitated the caregiver's food, compared to 24% of older children.

Caregivers provided specific instructions concerning food selection to 82% of younger children and 14% of older. They commented on 23% of younger children's and 10% of older children's food selection. Forty percent of younger children responded to positive comments about healthy food choices by selecting more healthier food items, as defined by the researcher. Positive comments had no effect on the selection of food for older children. Sixty-seven percent of younger children responded to negative comments about unhealthy choices by selecting healthier foods. Negative comments had no affect on the selection of food for older children. Caregivers instructed 50% of younger children to eat everything on his or her plate while older children received no instruction. Caregivers offered dessert items to 43% of younger children as a reward for good behavior. Dessert items were also offered to 77% of younger children as a reward for eating healthy foods. Caregivers did not use desserts as a source of positive reinforcement for older children. Observations revealed that 17 (52%) younger children and 10 (59%) older children consumed dessert items.

Seventy-three percent of younger children and 2% of older children followed caregiver instructions about food selection. Thirty-six percent of younger children and 4% of older children responded to caregiver comments about their food selection. When caregivers instructed children to eat all items on their plate, 67% of younger children and 5% of older children responded. These findings correlate with Bandura's vicarious learning, in that younger children learn from others by observing, retaining, and replicating behavior observed in others. Table 2 highlights the findings of each key point.

Table 2

Behavioral Checklist Results

Key Points	% Younger Children	% Older Children
Observations Made by Children		
1. Children observe food selection of others	61	20
2. Children observe portion sizes of caregiver	12	10
3. Children observe caregiver comments about buffet items	91	24
4. Children observe caregiver consumption of healthy foods before unhealthy foods	36	56
5. Children observe caregiver reactions to children's food selection	12	4
Imitation and Modeling by Children		
6. Food choices of others affect children's selection	76	14
7. Children emulate caregiver portion sizes	36	48
8. Children repeat caregiver comments about buffet items	67	20
9. Children imitate caregiver choice to eat healthy foods before unhealthy foods, and vice versa	91	24
Caregiver Influence		
10. Caregivers provide specific instructions to children concerning food selection	82	14
11. Caregivers comment on children's food selection	23	10
12. Children respond to (+) comments about healthy choices by consuming more healthy than unhealthy foods	40	0
13. Children respond to (-) comments about unhealthy choices by consuming healthier foods	67	0
14. Children respond to (-) comments about unhealthy choices by consuming healthier foods	50	0
15. Caregivers offer dessert as a reward for good behavior	43	0
16. Caregivers offer dessert as a reward for eating healthy food items first	77	0
Attention of Children		
17. Children follow caregiver instructions about food selection	73	2
18. Children respond to caregiver comments about selection	36	4
19. Children respond to caregiver instructions about eating everything on their plates	67	5

Chapter 5

Summary, Conclusions, and Recommendations

Summary

According to the American Dietetic Association, children between the ages of two and 11 should attain optimal physical and mental health, maintain a healthy weight, practice healthy eating habits, and engage in physical activities on a regular basis. A combination of the aforementioned practices will decrease the likelihood of cardiovascular disease, type 2 diabetes, cancer, obesity, and osteoporosis in both childhood and adulthood (Nicklas & Johnson, 2004). Current research indicates school-aged children have low intakes of fruits and vegetables, very low intakes of grains, and high intakes of sodium and saturated fat (USDA, 2008). Caregiver influences continue to be major factors contributing to food choices and eating habits displayed by children and adolescents (O'Dea & Caputi, 2001).

Conclusions

Data from this study indicates that age plays a significant role in the food choices made by children. The results of this support the notion that there is a relationship between children's age and the number of categories from which children select food and the food items chosen. Older children select from more food categories than younger children. Older children select greater amounts of meats and beans, grains, and fats than younger children while other studies indicate they are not meeting dietary recommendations for fruits, vegetables, and calcium-rich foods (CDPH, 2000). The results dismiss the idea that adult's gender and adult accompaniment are significantly related to the number of categories and food items selected by children. Prior studies

confirm these findings. Chambers et al. (2008) found age to be a greater factor than gender when food choices are made. Research conducted by Beydoun and Wang (2009) indicates a recent decline in parental influence on older children's dietary intakes. They found that peer interactions, community involvements, television, and self-image issues play more significant roles in dietary preferences of school-aged children.

Findings generated from the Behavioral Checklist suggest that younger children are more observant of their surroundings than older children. Children's learning is heavily reliant on observation. Young children model their behaviors off the actions of caregivers, siblings, peers, and strangers. They are constantly learning from their observations. Verbally instructing young children to do something is not as effective as showing them how to do it (Grusec, Kuczynski, Rushton & Simutis, 1978). More than half of the younger children in this study observed the food selection of others at the buffet, and almost all of the younger children observed caregiver comments about portion sizes. This can be explained by the fact that the thought process for younger children is different than older children and adults. Younger children think from event to event rather than use general principals or specific facts to draw conclusions (Elkind, 1999).

This study found that caregivers provided specific instructions about food selection to 82% of the younger children and 24% of the older children. Forty percent of the younger children responded to positive caregiver comments about healthy choices by selecting healthier food items. Sixty-seven percent of younger children responded to negative caregiver comments about unhealthy choices by selecting healthier food items. Older children did not modify eating behaviors in response to positive or negative caregiver comments. This suggests that younger children are more easily influenced by

caregiver comments than older children, and they opt to change behaviors to receive caregiver praise and approval. Caregivers instructed 50% of the younger children to consume all food items on their plate, whereas older children did not receive this instruction. Klesges et al. (1991) discovered that "...parental influences have a marked effect on food selection; both the threat of parental monitoring and actual parental monitoring lowered the number of non-nutritious foods chosen and total caloric content of the meal" (p. 859). This study supports the findings of Klesges et al. in that younger children consumed healthier foods after both positive and negative caregiver comments and instructions were given. The caregivers' reminders that the children are being monitored throughout the meal reinforced younger children's decision to select healthier foods.

This study indicates that younger children are more likely than older children to be affected by the food choices of others, repeat caregiver comments about buffet items, imitate caregiver choices to eat certain foods before others, and respond to caregiver comments about foods being consumed. Findings also indicate very little caregiver reaction to older children's food choices. Caregivers commented on less than 20% of the older children's food selection, and only 4% of older children verbally responded to caregiver comments concerning food selection. This suggests a need for more communication between caregivers and older children about the benefits and drawbacks of consuming certain food items.

Limitations

Four important constraints to this study include geographical location, sample size, age estimation, and food consumption. This study was limited to two Midwestern

locations, thus it did not undertake a national analysis of children's dietary preferences. The sample size was limited to 50 children. A larger sample size may have produced more significant and generalizable results. It is possible that some age estimations were inaccurate; however, the researcher took steps to control for it by developing a training packet with pictures and recruiting an assistant that has experience working with children. The focus of the study was on food selection and not consumption. Information about how much food from each category was consumed may have provided vital information about children's caloric intakes.

Recommendations

The knowledge gained from this research will be useful to registered dieticians, educators, caregivers, and physicians. Focus should be placed on the development of programs that promote healthier eating habits within the community and home environments. Physicians and teachers can educate caregivers and older children through newsletters and courses designed around healthy eating habits and the benefits of proper nutrition. Courses can be offered to educate caregivers about the importance of creating positive eating environments to promote healthy eating habits within home environments. This can be attained by making healthy food items available within the home, preparing well-balanced meals, and rewarding children for selecting healthy snack items. Courses addressing the effects of fatty food consumption must also be provided to older children in a manner that promotes understanding and implementation. Courses can also be designed to teach educators how to effectively communicate with children about the importance of selecting healthy food items.

Buffet dining differs from meal preparation within the home. Buffets are designed to offer food items from several food categories, whereas meals prepared within the home may only incorporate items from a limited number of food categories.

There is a need for restaurants to provide nutritional information and provide healthy options, especially to children. Restaurants are only required to provide nutritional information for foods for which health or nutrition claims are made. On May 2, 1997, the Food and Drug Administration mandated the following for restaurants:

1. Nutritional claims "heart healthy" and "low fat" must meet FDA standards.
2. Nutritional information must be provided upon request.
3. Full nutritional information is not required; only information pertaining to specific claims is required.
4. Laboratory analysis of nutrient levels is not mandatory (CSPI, 2009).

In addition to the federal requirements, numerous states or cities have implemented or are contemplating requiring that nutritional information be posted on menus in restaurants.

Educators and health care professionals need to provide accurate information to discount erroneous notions and correct beliefs about healthy food choices. This will enable caregivers to encourage children to select a variety of fruits, vegetables, grains, dairy products, proteins, and healthy fats while consuming meals in a restaurant setting.

Based on the results of this study, caregivers and professionals need to focus specifically on the promotion of healthy eating habits for children. The results of this study indicate a need to center on the eating habits of younger children, because they are more likely than older children to be influenced by caregivers. If caregivers are not making healthy eating choices, then younger children are likely to make the same

choices. The results also suggest the need to effectively communicate the importance of healthy food choices to older children.

Caregivers need to be educated about the importance of providing well-balanced meals to younger children to ensure optimal nutritional intake during early childhood. Eating habits acquired in early childhood are likely to continue into adulthood, so early intervention and education is essential. Educators, caregivers, and registered dieticians can plan activities for younger children that promote healthy eating habits. Cooking classes, informative games, and easy recipes will both educate and motivate children to develop and sustain healthy eating habits.

Community and school health fairs, media broadcast, special trainings, and nutritional support groups will encourage caregivers and children to adopt healthy eating behaviors. Rewards and recognition for attending nutrition education programs may result in greater attendance rates, and incentives for continual progress may encourage attendees to successfully modify poor eating habits. Building confidence with small steps will result in healthier eating and decrease the likelihood of setbacks (THCU, 2003).

Future Research

Further research is vital to the growth and development of children. The availability of similar studies is limited to 24-hour recalls and surveys; therefore, more physical observations on a larger scale and in a natural setting should be conducted. Observations conducted in limited service or fast food eateries, full-service casual establishments, and fine dining restaurants could provide varying results with regards to eating behaviors, caregiver influence, and food selection.

Future studies should be on a larger scale and focus on food consumption. The results of a large-scale study would provide a more in-depth look at what critical issues need to be addressed with regards to caregiver influence and the observations and behaviors of children. The use of qualitative methods, such as interviews with children and caregivers, would provide valuable information about caregiver-child relationships with regards to food consumption and nutritional behaviors.

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List of Appendices

Appendix A – Letter to Restaurant Managers

Megan J. Merrill
331 W. Tyler Avenue
Charleston, IL 61920
217-508-9521

To Whom It May Concern:

My name is Megan J. Merrill, and I am a Family and Consumer Sciences Graduate Student at Eastern Illinois University. I am conducting research on the nutritional habits of children. I am requesting the permission of your management staff to perform observations at your restaurant. They will last approximately three hours each on two separate occasions. The study will not involve interactions with your guests, only observations. You may contact my Research Advisor to address any questions or concerns that you may have. His information is listed below. Thank you in advance for your consideration.

Dr. Richard Wilkinson
217-581-6046
Eastern Illinois University
4325 Klehm Hall
Charleston, Illinois 61920
rfwilkinson@eiu.edu

Sincerely,

Megan J. Merrill

Appendix B – List of Buffet Items

Location: _Champaign, Illinois_____

Cooked apples	White rice	Chocolate milk	Assorted cookies
Fresh melon	Mayonnaise	Bacon bits	Pudding
Fresh pineapple	Nuts	Eggs	Muffins
Raisins	Olives	Ham	Brownies
Canned peaches	Spaghetti sauce	Sausage	Jell-O
Fresh fruit salad	Seafood salad	Mashed potatoes	BBQ pork chops
Asparagus	Potato salad	Spaghetti noodles	Salmon
Corn on the cob	Beets	Boiled potatoes	Steak
Carrots	Sweet peppers	Butter	Baked beans
Broccoli	Pickles	Gravy	Dinner roll
Green beans	Onions	Chicken casserole	Taco shell
Lettuce	Green peppers	Pea salad	Biscuit
Spinach	Mushrooms	Coleslaw	Croutons
Cucumbers	Tomatoes	Ice cream	Oriental noodles
Taco meat	Shredded cheese	Soda	Salad dressing
Baked chicken	Cottage cheese	Apple juice	Macaroni and cheese
Turkey	Sour cream	Fruit punch	Fried okra
Hamburger	Melted cheese	Lemonade	Pizza
Baked potato	Cheese cubes	Whipped Cream	Fried chicken
Nacho chips	2% milk	Assorted cakes	Fried pork chop

Appendix B – List of Buffet Items

Location: _Terre Haute, Indiana_____

Lemons	Cottage cheese	Baked beans	Bacon bits
Raisins	Nacho cheese	Northern beans	Potato salad
Dried Cranberries	2% milk	Taco shell	Cucumbers
Fresh pineapple	Chocolate milk	Nacho chips	Grilled shrimp
Fresh strawberries	Tea	Mashed potatoes	Pea salad
Canned peaches	Soda	Baked potatoes	Mushrooms
Canned pears	Apple juice	Corn bread	Roast beef
Fresh melon	Fruit punch	Spaghetti noodles	Pizza
Fresh orange slices	Lemonade	Wild rice	Onions
Squash	Whipped cream	White rice	BBQ chicken
Broccoli	Assorted cookies	Salad dressing	Fried shrimp
Cauliflower	Assorted cakes	Mayonnaise	Shredded cheese
Carrots	Brownies	Nuts	Hot dogs
Green beans	Jell-O	Olives	Chicken noodle soup
Cabbage	Rice crispy treats	Butter	Cheese cubes
Peas	Assorted candies	Gravy	Hamburger
Corn	Banana pudding	French fries	Chili
Lettuce	Eggs	Fried chicken	
Tomatoes	Pepperoni	Stuffing	
Green peppers	Grilled chicken	Tuna salad	
Pickles	Steak	Seafood salad	

Appendix C – Behavioral Checklist

Child
Approximate Age of Child: _____ Male____ Female____
Identification Markers: _____

Caregiver
Male____ Female_____ Both____ (If more than one gender is present, note the number next to appropriate sex.)

Observations Made by Child

Question	Yes	No	Comments
Did child observe food selections of others?			
Did child observe portion sizes of caregiver?			
Did child observe caregiver comments about buffet items?			Note (+)/ (-) comments made and child reactions.
Did child observe caregiver consume healthy items before unhealthy items?			
Did child observe caregiver reactions to child's food selection?			If so, how did child respond?

Imitation/Modeling by Child

Question	Yes	No	Comments
Did food choices of others affect child's selection?			If so, who did child imitate? Note food choices made by imitation.
Did child emulate caregiver portion sizes?			
Did child repeat caregiver comments about buffet items?			If so, provide examples.
Did child imitate caregiver's choice to eat healthy items before unhealthy items, and vice versa?			If so, note (+)/ (-) comments made by caregiver.

Caregiver Influence

Question	Yes	No	Comments
Did caregiver provide specific instructions to child concerning food selection?			If so, provide examples.
Did caregiver comment on child's food selection?			If so, list caregiver's (+)/ (-) comments.
Did child respond to (+) comments about healthy choices by consuming healthier foods more than unhealthy foods?			Provide details.
Did child respond to (-) comments about unhealthy choices by consuming healthier foods?			If so, what did the child do with unhealthy food items on the plate? Note child's demeanor when consuming the healthy items.
Did caregiver instruct child to eat everything on his or her plate?			Note caregiver's tone of voice (i.e. authoritative, encouraging).
Did caregiver offer dessert items as reward for good behavior?			If so, how did the child respond?
Did caregiver offer dessert as reward for eating healthy foods first?			If so, was the reinforcement effective?

Child's Attention

Question	Yes	No	Comments
Did child follow caregiver instructions about food selection?			Note child's demeanor during instructions and food selection.
Did child respond to caregiver comments about selection?			If yes, describe child's response.
Did child respond to caregiver's instructions about eating everything on his or her plate?			If so, note child's response as (+)/ (-). List examples.

Appendix D – Child's Food and Beverage Selection

Identification Markers:

_____

Child's Food and Beverage Selections

First Plate		**Second Plate**		**Third Plate**		**Beverage**	
1.		1.		1.		1.	
2.		2.		2.		2.	
3.		3.		3.		3.	
4.		4.		4.		4.	
5.		5.		5.		5.	
6.		6.		6.		6.	
7.		7.		7.		7.	

Instructions for Notation:

1. List items in the order that they were selected by the child. For example, the first food item placed on the child's first plate would be noted under First Plate as number 1.
2. In the comment section below, list any significant behaviors or comments by the child or caregiver that were observed and not covered in the checklist. Additional comments that expand on checklist observations are also encouraged.

COMMENTS:

Appendix E – Categorization of Food Items for Statistical Analysis

Fruits

Cooked apples
Fresh melon
Fresh pineapple
Raisins
Canned peaches
Fresh fruit salad
Apple juice
Lemons
Dried cranberries
Fresh strawberries
Canned pears
Fresh orange slices
Banana pudding

Grains

Nacho chips
White rice
Spaghetti noodles
Chicken casserole
Muffins
Dinner roll
Taco shell
Biscuit
Croutons
Oriental noodles
Macaroni and cheese
Corn bread
Stuffing
Pizza
Chicken noodle soup
Wild rice
Rice crispy treats

Vegetables

Asparagus
Corn on the cob
Carrots
Broccoli
Green beans
Lettuce
Spinach
Cucumbers
Baked potatoes
Potato salad
Beets
Sweet peppers
Pickles
Onions
Green peppers
Mushrooms
Mashed potatoes
Boiled potatoes
Pea salad
Coleslaw
Cauliflower
Corn
Chili
Fried okra
French fries
Squash

Milk

Shredded cheese
Cottage cheese
Sour cream
Melted cheese
Cheese cubes
2% milk
Chocolate milk
Ice cream
Pudding
Macaroni and cheese
Pizza
Banana pudding

Sugars

Chocolate milk
Ice cream
Soda
Assorted cookies
Assorted cakes
Pudding
Jello-O
Brownies
Rice crispy treats
Assorted candies
Banana pudding

Fats with Oils

Mayonnaise
Nuts
French fries
Seafood salad
Potato salad
Pea salad
Tuna salad
Butter
Gravy
Chicken casserole
Coleslaw
Salad dressing
Fried okra
Fried chicken
Fried shrimp
Fried pork chop

Meats and Beans

Taco Meat
Baked chicken
Turkey
Hamburger
Seafood salad
Bacon bits
Eggs
Ham
Sausage
Chicken casserole
BBQ pork chops
Salmon
Steak
Baked beans
Pizza
Fried chicken
Fried pork chop
Fried shrimp
Northern beans
Grilled shrimp
Roast beef
Hot dogs
Grilled chicken
Pepperoni
Tuna salad
Chili
Chicken noodle soup