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## A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI Percentiles in School-Age Children and Adolescents

Stephanie Jane Smith  
*Wright State University*

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A DESCRIPTIVE STUDY OF PARENTING STYLES, PARENTAL FEEDING  
BEHAVIORS AND  
BMI IN SCHOOL-AGE CHILDREN AND ADOLESCENTS.

A Thesis Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Master of Science

By

STEPHANIE JANE SMITH, RN  
B.S.N., Wright State University, 2005

2008  
Wright State University

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WRIGHT STATE UNIVERSITY  
SCHOOL OF GRADUATE STUDIES

May 29, 2008

I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Stephanie Jane Smith ENTITLED A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI in School-age Children and Adolescents. BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF Master Of Science.

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## ABSTRACT

Smith, Stephanie Jane, RN, BSN, Wright State University-Miami Valley, College of Nursing and Health, Wright State University, 2008. A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI of School-age Children and Adolescents.

The rising rate of obesity in the pediatric population has demanded further investigation from members of the health care community. Numerous exercise and nutrition programs have been developed to help combat the growing rate of obesity within the pediatric population but many lack the family-centered approach needed to achieve increased compliance with the prescribed plan of care. Both parenting styles and parental feeding behaviors have been shown to play a contributing role in the weight of children. According to previous research, the authoritarian parenting style often leads to an increased BMI in children. Research examining parental feeding behaviors indicates that high rates of disinhibition, especially within mothers, contribute to an increased BMI in children. Very few research studies have examined both factors and the relationship they have with BMI in school-age children and adolescents.

This research study used a descriptive design to explore parenting styles, parental feeding behaviors and BMI in school-age children and adolescents. The sample consisted of 33 families attending a Midwest hospital-based lipid clinic for the first time from January 4, 2007 through March 15, 2007. The response rate for this study was 92%. Parenting styles were measured using the Parental Authority Questionnaire and parental feeding behaviors were measured using the Three Factor Eating Questionnaire. The child

or adolescent's BMI percentile was calculated and then recorded on the demographic questionnaire. The demographic questionnaire was then handed to the parent(s) to be completed.

Of the 33 questionnaires, two were excluded because of incompleteness and one was excluded as the parent was unable to understand the questionnaires due to a low literacy rate for a final sample size of 30. The typical participants were white, middle-class, married females who worked and had at least a high school education. The majority of parents in this study identified with the cognitive restraint parental feeding behavior subscale and the authoritative parenting style subscale.

The families in this research study were not typical of families who have been previously identified in the literature as 'at risk' for becoming obese as they were middle-class, white working families. The risk for becoming obese has begun to cross all cultural, racial and socioeconomic backgrounds. Middle-class citizens have the dominant culture in America which focuses on personal achievement and moving up the social ladder (Friedman, Bowden & Jones, 2003). Perhaps middle-class working mothers have limited time to spend on the purchasing and preparing of healthy meals and a reliance on fast food restaurants or 'easy to prepare' meals has become a mainstay in their homes. Many middle-class Americans of varying ethnicity are undergoing an acculturation process while moving up the social ladder and many may be discarding their own dietary traditions and values in an effort to blend into mainstream society (Friedman, Bowden & Jones).

Parenting styles and parental feeding behaviors can significantly contribute to the risk of their child or adolescent becoming overweight or obese. Identifying which

parenting style and parental feeding behavior the primary caretaker identifies with can be of help to the nurse in developing a family-centered approach towards achieving a healthier lifestyle.

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## I. INTRODUCTION

Parenting style and parental feeding behaviors may play a contributing role in the risks associated with childhood obesity. The rising rate of obesity in the pediatric population has demanded further investigation from members of the health care community. Attention to parental influences and how they impact overweight and obese children is crucial to members of the healthcare team serving this at-risk population. Research studies examining both parenting styles and parental feeding behaviors in school-age children and adolescents are few in numbers. Research focusing on parenting styles indicates that the authoritarian parenting style often places the child at risk for obesity. High rates of the parental feeding behavior disinhibition, especially within mothers, can also contribute to higher rates of obesity.

The Conference on Preventing Childhood Obesity held on December 8, 2003 identified a predominant ethic in the United States that food choices should be largely child-centered; thus, what the child likes is what is served (2004). Sedentary lifestyles, varying degrees of parental control, feeding behaviors, an affinity for highly refined

sugary foods, and increased consumption of fast foods have had a cumulative effect on all children contributing to the rising obesity rate.

The objective of this study was to conduct a descriptive study of parenting styles, parental feeding behaviors and body mass index (BMI) in school-age children and adolescents. This chapter discusses the problem, purpose, research questions and assumptions of this study. This chapter also provides a definition of terms relevant to the study.

### *Research Problem*

Obesity has become the second leading cause of premature death in the United States. There are multiple co-morbidities that often go along with obesity such as diabetes, cancer, hyperlipidemia, hypertension, arthritis, asthma, orthopedic problems and depression, just to name a few.

A connection exists between parenting styles, parental feeding behaviors and childhood obesity. Studies have shown that much of our eating behaviors are formed in early childhood and most behaviors are modeled after primary caregivers of the child (Grady, 2004).

Several studies have shown the need for further research into parenting styles and their impact or contribution to this alarming problem (Drohan, Lederman et al., 2003;

Golan et al., 2004; St. Jeor et al., 2002; Hodges, 2003; Feeg, 2004; Morton et al., 1999; McGarvey et al, 2004). However, the research is limited in that there are no studies that have evaluated parents of school-age children from all ethnic, racial and socio-economic backgrounds. In addition, research findings have been inconsistent. Therefore, medical and nursing care is hampered by the inability to successfully implement an individualized family approach that considers all the variables within the family unit.

### *Significance*

The Committee on Nutrition found that 15.3% of children and 15.5% of adolescents are overweight (2003). This number has nearly doubled since 1976 (Drohan, 2002). If a child enters adolescence being overweight, he or she has an 80% chance of remaining overweight throughout adulthood (Committee on Nutrition, 2003).

In 2000, The American Public Health Association estimated the cost of obesity in the United States at \$117 billion on direct and indirect healthcare costs (American Public Health Association, 2006). This enormous amount of money places a huge burden on an ever-growing problem with rising health-care costs in America. Healthy People 2010 (HP) have indicated the serious need to curtail the prevalence of obesity in an order to prevent serious and costly co-morbidities (Drohan, 2002). HP has formed the Obesity Education Initiative and the Weight Control Information Network within the National

Institute of Health to help combat this serious health (Healthy People 2010 Website, 2004).

A descriptive study of parenting styles and parental feeding behaviors is imperative in order to help develop an individualized family approach towards healthier eating behaviors for children who are identified as overweight or obese. The role that a parent has in a child's life regarding areas such as what food choices are made available to the child and portion sizes served supports the need for exploring related parenting issues. A better understanding of parenting styles and parent feeding behaviors can help the healthcare team develop a more individualized healthy life-style program that can benefit the child as well as the whole family. Healthcare teams must consider the needs of the family unit as a whole, not just the child individually, to have greater success in achieving a healthy life-style program.

#### *Purpose*

The purpose of this study was to describe parenting styles, parental feeding behaviors, and BMI for school-age children and adolescents referred to the Lipid Clinic at Dayton Children's: The Children's Medical Center of Dayton with a BMI above the 85<sup>th</sup> percentile. Information about dominant parenting style can assist members of the

health care team identify areas where existing programs can be adapted to meet the individual needs of families.

### *Research Questions*

1. What are the parenting styles of parents who have a school-age child or adolescent who is overweight or obese?
2. What cognitive restraint or disinhibition behaviors are demonstrated by parents who have a child or adolescent that is overweight or obese?
3. What is the association between parenting style and parental feeding behavior with children or adolescents who are overweight or obese?

### *Operational and Conceptual Definitions*

Feeding behavior: The conceptual definition of feeding behavior is the deportment or conduct regarding the act of taking or giving food including any or all of a person's total activity, especially those behaviors which can be externally observed, supply with nourishment, minister to, to support or promote, to supply something essential for growth, maintenance or operation (American Heritage Dictionary of the English Language, 2000; Dorland's Illustrated Medical Dictionary, 1988). The operational definition of feeding behavior is the approach and the attitudes surrounding the planning,

preparing and consumption of food and drink as measured by The Three Factor Eating Questionnaire. (Appendix A).

Parenting style: The conceptual definition of parenting style is the quality of imagination and individuality expressed in one's actions and tastes when a person acts as a parent to raise or nurture (American Heritage Dictionary of the English Language, 2000). The operational definition of parenting style is the type and amount of action taken that lead to development of a child through discipline, support and encouragement and being a role-model. The operational definition of parenting styles is an approach made by a parent towards parenting and feeding behaviors based on the past experiences, morals and value systems as measured by the Parental Authority Questionnaire (Appendix B).

School-age Children: The conceptual definition of school-age children is of or relating to children between the ages of four and eighteen years of age (American Heritage Dictionary of the English Language, 2000). The operational definition of school-age children is any child enrolled in grades pre-kindergarten through twelfth, who is under the supervision and legal guardianship of an adult as indicated on the child's medical record. Obese: The conceptual definition of obese is: ranges of weight that are greater than what is generally considered healthy for a given height (Department of Health and

Human Services, 2006). The operational definition of obese is any pre-pubescent child who is greater than or equal to the 95<sup>th</sup> percentile on the growth chart or any post-pubescent adolescent who has a BMI greater than or equal to 30 (Center for Disease Control and Prevention, 2006). Post-pubescent refers to occurring in or pertaining to the period following puberty (Dorland's Illustrated Medical Dictionary, 1988).

Body Mass Index: The conceptual definition of body mass index is a measurement of the relative percentages of fat and muscle mass in the human body (American Heritage Dictionary of the English Language, 2000). The operational definition of BMI is weight in kilograms divided by height in meters divided by the height in meters again (Center for Disease Control and Prevention, 2006).

Cognitive Restraint: The conceptual definition of cognitive restraint is a conscious process that restrains an action, emotion or thought (Webster's New World Dictionary and Thesaurus, 1996). The operational definition of cognitive restraint is measured by an elevated score in the Factor 1 subscale of Stunkard and Messick's Three Factor Eating Questionnaire (Appendix A).

Disinhibition: The conceptual definition of disinhibition is unrestrained behavior resulting from a lessening or loss of cognitive restraint or a disregard of cultural constraints (American Heritage Dictionary of the English Language, 2000). The

operational definition of disinhibition is measured by an elevated score in the Factor 2 subscale of Stunkard and Messick's Three Factor Eating Questionnaire (Appendix A).

### *Assumptions*

1. All parents, whose school-age children or adolescents have been referred to the Lipid Clinic, were able to read English and understand the consent and questionnaires.
2. Parents would be truthful when answering the demographic questionnaire, the Parental Authority Questionnaire and the Three Factor Eating Questionnaire.

### *Summary*

Because parents play a significant role regarding the food choices made available and how often their child eats, the development of a family-centered approach is imperative to achieve success in assisting the child towards a healthier life-style. A successful program for helping the child develop healthy life-style skills should include the identification of parenting styles and feeding behaviors in addition to the assessment of the child. Such an approach can be instrumental in creating and implementing a successful family-centered approach.

Chapter II will present a review of literature related to this study. Chapter II will also discuss a theoretical framework for the study as well as a conceptual model for this

study. Chapter III will discuss the methods used during this research. Chapter IV will discuss the findings of this research study. Chapter V will summarize the findings and discuss the limitations and implications of this research study and give recommendations for future research on this subject.

## II. REVIEW OF LITERATURE

The incidence of pediatric obesity is increasing at an alarming rate, leading to several co-morbidities such as cancer, arthritis, diabetes, asthma and hyperlipidemia and can lead to a high risk of remaining obese into adulthood. The purpose of this study was to explore the relationship among parenting styles, parental feeding behaviors and BMI for school-age children. Parenting styles and parental feeding behaviors play a strong influential role in the child's development and ability to learn and identify internal hunger and satiety cues. Identification of parenting styles and feeding behaviors from this study will help to develop an individualized family approach towards healthier eating behaviors and healthy life-style changes. This chapter presents a review of literature on the prevalence of pediatric obesity and also the influence that parenting styles and parent feeding behaviors have on pediatric obesity. This chapter also describes Albert Bandura's Social Cognitive Theory and the six key concepts involved and conclude with the conceptual framework for this study.

### Pediatric Obesity

Pediatric obesity has been defined by the Centers for Disease Control and Prevention (Centers for Disease Control and Prevention, 2006) in the following categories: any pre-pubescent child greater than or equal to the 95<sup>th</sup> percentile on the growth chart. In addition, obesity is defined in a post-pubescent child or adult as one who has a body mass index (BMI) of greater than 30. Body mass index can be calculated using the English or Metric system. The metric formula is weight in kilograms divided by the height in centimeters divided by the height in centimeters again and multiple by 10,000. The English formula is weight in pounds divided by the height in inches squared multiplied by 703 (Centers for Disease Control and Prevention, 2006).

While genetics is a risk factor for some people, current research shows that only 25 to 40% of the obesity phenotypes are inherited. Environment still plays a major role in whether a child actually develops obesity, regardless of genetics (Drohan, 2002). Research further suggests that obesity will occur if there is an imbalance in basal metabolic rate, energy consumption and energy expenditure through physical activity (Rowland, 2004). Sedentary lifestyles, fast food consumption and increased exposure to media are also strong predictors of obesity in children (Rollins, 2004; Hampl, Wharton, Taylor, Winham, Block, & Hall, 2004).

Obesity can lead to multiple co-morbidities including hyperlipidemia, insulin resistance, diabetes mellitus type 2, hypertension, orthopedic problems, emotional problems, polycystic ovarian syndrome, cancer, asthma, obstructive sleep apnea, as well as several other disease states (American Public Health Association, 2006). Not only does this contribute to a future of unhealthy citizens but also places an enormous financial burden on this country.

### Parenting Styles

Parenting styles help to describe the degree of interaction between the parent and child, such as discipline, support, warmth and caring (Coplan, Hastings, Lagace-Seguin, & Moulton, 2002). There are currently four styles of parenting identified in research literature including authoritarian, authoritative, permissive and neglect or disengaged. Parents with the authoritarian style exhibit little warmth and are very strict disciplinarians, who attempt to control all areas of their child's life. Conversations are usually one way in nature with the parent doing the talking. The authoritative parenting style also involves firm controls and strong demands of the child's behavior but the parent is willing to listen to the child's view points. When disciplining a child the authoritative parent will explain the reason for the punishment. The permissive parenting style includes a predominately non-disciplinarian approach with minimal attempts to

control the child (Buri, 1991). The permissive parent may not even appear to care for the child or show any concern for bad behavior. The neglected or disengaged parent shows very little responsiveness, demands very little of their child and shows very little affective expression (Golan & Crow, 2004).

One research study about parenting styles and children's weight looked at Chinese parents and their children. This cross-sectional study of 163 students that ranged in age from eight to ten years was conducted by Kennedy and Chen (2004). The cross-sectional study involved two groups of Chinese children. One group of children was located in the United States and the other group was located in Taiwan. Kennedy and Chen examined factors that contributed to the weight status of Chinese children by using the Family Assessment Device (FAD), the Attitudes Towards Child-Rearing Scale (ATCRS) and the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA).

The FAD consisted of six subscales, including problem solving, communication, roles, affective response, behavior control, affective response and affective involvement. The Cronbach's alpha reliability coefficients in this study were .73 for the Problem Solving subscale, .72 for the Communication subscale, .70 for the Role subscale, .69 for the Affective Responsiveness subscale, .64 for Affective Involvement subscale, .52 for

Behavior Control subscale, and .82 for General Functioning subscale (Chen & Kennedy, 2004).

The ATCRS includes two subscales including 40 items on a 5-point Likert-type scale identifying either authoritative or authoritarian parenting styles. The SL-ASIA consisted of a 21-item multiple choice questionnaire including areas such as language, identity, friendships, behaviors, attitudes and general background. The Cronbach's alpha reliability coefficients in this study were .75 for total score, .85 for authoritarian subscale, and .53 for authoritative subscale (Chen & Kennedy, 2004).

Chen and Kennedy's research found that a more authoritative parenting style was related to higher BMI's in Chinese children ( $R^2 = .263$ ,  $F = 8.727$ ,  $p = .0001$ ) (2004). In a Chinese family, the parenting style that has been part of the traditional culture, is that of authoritarian (Chen & Kennedy, 2004). This finding was not consistent with other studies which suggest that authoritative parenting style is associated with better health in children (Chen & Kennedy).

A study investigating risk factors for overweight children was conducted over the span of nine years in the 1990's (Agras, Hammer, McNicholas, & Kraemer, 2004). This prospective study included 150 children in the San Francisco Bay Area that were followed from birth to 9.5 years of age. Several tools were used in this study including

the Three-Factor Eating Questionnaire, the Maternal Feeding Attitudes Scale and the Parental Authority Questionnaire. The study concluded that the strongest risk factor related to an increased parental BMI was parental over-control of the child's feeding behaviors, which is the authoritarian parenting style.

The Three-Factor Eating Questionnaire measured cognitive restraint, hunger and disinhibition and had high test-retest reliability. The Maternal Feedings Attitudes Scale looked at how pushy the mother was regarding infant feeding and also had high test-retest reliability. The Parental Authority Questionnaire (PAQ) was used to measure authoritarian, authoritative and permissive parenting styles. Cronbach's coefficient alpha values for this tool was noted in a previous study as the following: .75 for mother's permissiveness, .85 for mother's authoritarianism, .82 for mother's authoritative, .74 for father's permissiveness, .87 for father's authoritarianism and .85 for father's authoritative. The PAQ is a valid measure of Baumrind's parental authority prototypes (Buri, 1991).

### Feeding Behaviors

Feeding behaviors for parents, children and families as a unit are areas of great concern when researching risks for pediatric obesity. Children learn feeding behaviors at an early age and these behaviors are reinforced throughout childhood (Hodge, 2003).

Much discussion and research has indicated the parents, who are controlling can alter the child's ability to learn to self-regulate and respond to internal cues of hunger and satiety (Hodges, 2003; Agras, Hammer, McNicholas and Kraemer, 2004; St Jeor, Peerumean-Chaney, Sigman-Grant, Williams & Foreyt, 2002; Faith, Berkowitz, Stallings, Kerns, Storey & Stunkard, 1999).

In a qualitative study, Bruss, Morris, Dannison, Orbe, Quitugua and Palacios (2005) examined the perceptions of childhood obesity with a multiethnic group located in the Northern Mariana Islands. This study utilized ethnographic methods and also four focus groups which included 32 mother, fathers and grandparents of children ages six to ten years old that were attending four public and private schools in Saipan. The children were selected based on the predominant makeup of the student body which included Chamorro, Carolinian and Filipino ethnic groups. Semi-structured interviews, lasting 60 to 90 minutes, were conducted using the English language which was the common spoken language spoken on the islands. The interviews were audio-taped and transcribed by a Saipan-based transcription agency familiar with the accents of the different groups. Three major interrelated themes emerged including socio-cultural messages, familial messages and nutritional messages. Within the themes identified, it was clear that the

individuals within the family negotiated meanings regarding nutrition from the different message sources they were receiving.

The socio-cultural messages reflected the history, culture and social experiences which impacted the parents' perceptions of child feeding. One example given was the crucial role that rice played in the dietary practices of the islanders and the reliance on rice as a mainstay within this culture dated back over a thousand years. Parents did not feel that a thin child was a healthy child and they encouraged their children to eat as much rice as they wanted. The parents also preferred their child eat fresh local produce with a preference of fruits over vegetables, as they associate eating large amounts of vegetables with thinness. Some parents described a recent tradition of 'payday treats', which was when parents would offer sugary food treats on payday (Bruss et al, 2005).

The familial messages gathered from the families in this study included some of the socio-cultural messages as well as a set of collective contracts, episodes and life scripts. Families had different views and ways of communicating value statements regarding food consumption, some of which were specific to the individual family and some were based on the predominant culture on the islands. Some of the individual life scripts included the following: avoidance of snacks, offering cereal as a snack as long as it did not interfere with meals and especially the consumption of rice, purchasing candy

and chips to please the children and adding extra sugar to pre-sweetened powdered drink mixes. Parents reported that snack and meal times were easier when they prepared foods that they knew their children would eat as they identified their children as picky eaters and were concerned about their children not eating and losing weight (Bruss et al, 2005).

The nutritional messages from the families in this study were interpreted from socio-cultural and familial messages as well as formal messages received from medical professionals, schools and reading food nutrition labels. Parents had varying views on the appropriate amounts of daily rice intake and also reported frying most of their foods, despite knowing that frying added more fat to their family's diet. Some parents, who perceived their children as normal weight status based on life scripts and dominant cultural beliefs, did not see an association between sweets and weight status. Most parents realized that reading nutritional labels was a strategy for decreasing fat in their children's diet; however, most reported that they usually bought whatever foods were cheapest, which was a common life script of most parents (Bruss et al, 2005).

Faith, Berkowitz, Stallings, Kerns, Storey and Stunkard (2004) examined the causal relationship between parenting feeding styles and child weight in a cross-sectional prospective study. Data was obtained from 57 families enrolled in an Infant Growth Study of children born at high or low risk of obesity based on the mother's pre-

pregnancy weight. High risk was defined as the mother's pre-pregnancy BMI  $30.3 \pm 4.2$  and low risk was defined as mother's pre-pregnancy BMI at  $19.5 \pm 1.1$ . Children enrolled in this study had their BMI assessed at age five and at seven years as this age span is a critical time for the development of overweight in children. The Child Feeding Questionnaire (CFQ) was administered to the parents at ages five and seven years. One main finding from this study was that parental feeding styles and attitudes and the child's BMI were stable between ages 5 to 7 years. This finding "lends plausibility to the concept that feeding styles might influence child weight, child weight might influence feeding styles, or both" (Faith et. al., p. e433). The second finding in this study suggests a difference in the CFQ scores and the child's BMI z scores in high-risk and low-risk families could be related to a gene-environment interaction.

Agras, Hammer, McNicholas and Kraemer (2004) conducted a prospective study of 150 children from birth to 9.5 years of age. Several instruments were used in this study including the following: The Maternal Feeding Attitudes Scale, the Infant Body Habitus Scale, the Three-Factor Eating Questionnaire, The Eating Disorder Inventory, the Child Behavior Questionnaire and an annual questionnaire identifying nonnutritive food uses and the use of food limits. Measurements of 24 hour caloric intake, child BMI and parental BMI, length of sleep time, date of maternal return to work and infant

sucking behaviors were also obtained in this study. In this exploratory study, the following five independent risk factors for childhood overweight were found: parental BMI (Wilcoxon = 13.7,  $p < .001$ ), temperament of the child assessed as a combination of approach and impulsivity (Wilcoxon = 6.6,  $p < .01$ ), low parental concern about their child's thinness (Wilcoxon = 5.2,  $p < .02$ ), children with persistent tantrums over food (Wilcoxon = 9.3,  $p < .002$ ) and children's hours of sleep at ages three to four years (Wilcoxon = 6.6,  $p < .01$ ). Parents who exhibit a low concern regarding their child's thinness are parents who prefer a thin child but are faced with an infant with a high birth weight, rapid weight gain in the first six months of life, rapid eating and a high interest in food. This combination may lead to over control of the child's feeding behaviors on behalf of the parents and, thus, disrupting the child's ability to learn self-control. This study also confirmed the findings of previous studies that overweight children require less sleep and are less tired because of the lower activity levels that they have, compared to children who are not overweight (Agras et al.).

A prospective observational study known as The Framingham Children's Study, found that children's eating behaviors were strongly influenced by parental control of the child's diet and the attitudes of the parents regarding their own dietary intake (Hood, Moore, Sundarajan-Ramamurti, Singer, Cupples & Ellinson, 2000). A baseline eating

behavior questionnaire and Stunkard and Messick's Three- Factor Eating Questionnaire (TFEQ), as well as anthropometric data, at baseline and again at six years was assessed on 92 families. The results showed that children whose parents reported higher levels of dietary restraint, known as disinhibition, had greater increases in their BMI, triceps and sum of skin-folds than children of parents who reported the lowest levels of restraint or disinhibition. Parent's scoring low on disinhibition gained an average of 22.2 mm in their sum of skin-folds, while one parent scoring high on disinhibition gained 46.7 mm. Those children with both parents identified as highly disinhibited eaters gained 65.1 mm over six years. The parent's increase in body fat with increased levels of disinhibition showed a linear trend:  $p = 0.012$ . This study concluded that the effect of dietary restraint when paired with disinhibited eating patterns places the child at great risk for obesity. The child is given conflicting signals by the parent, who often restrains the child from eating certain foods and then allowing the child to indulge in the very same foods that were withheld during other times. The parent may also restrain the child by limiting food portion sizes. This does not allow the child to learn to recognize his or her own internal hunger and satiety cues. The child also develops obsessions or cravings for the foods that are being withheld by the parent.

#### Conceptual Framework

Developed by Albert Bandura and officially launched in 1941, the Social Learning Theory (SLT) focuses on cognitive concepts regarding behavior and development (Bandura, 1986). In 1986, Bandura renamed the SLT to what is known today as the Social Cognitive Theory (SCT). Bandura's SCT defines human behavior as triadic, influenced by the environment, personal factors and personal behavior. The SCT states that human behavior is dynamic, continuously changing as the individual seeks to find an outcome that they find personally acceptable. This outcome is evaluated by the individual through reciprocal interactions of a process of sending and receiving messages or behaviors. The individual determines what messages or behaviors produce the reaction or feedback that they find acceptable. The following are the six key concepts in the SCT: Self-Regulatory Capability, Self-Reflective Capability, Reciprocal Determinism, Vicarious Capability, Forethought Capability and Symbolizing Capability.

Reciprocal Determinism identifies bi-directional interactions that occur between the environment and personal characteristics, as well as the bi-directional interaction involving one's thoughts, emotions, actions and biological properties. Within this concept, Bandura proposes that "people are both products and producers of their environment and that a person's behavior will determine the aspects of their environment

to which they are exposed, and behavior is, in turn, modified by that environment”

(Stone, 1999, p. 4).

Symbolizing Capability within the SCT maintains that external influences affect behavior through cognitive processes. Bandura further suggests that it is symbols or mental pictures that help a human give shape, meaning and understanding to their experiences (Bandura, 1986).

Vicarious Capability refers to the human ability to learn from the observations of others. This approach helps a person to learn a new behavior without having to actually perform it themselves. If the behavior does not appear to cause the perpetrator any harm, this allows the person observing an opportunity to form a quick pattern of behavior without having to risk any consequences directly. Vicarious Capability can only be attained if the observer is able to commit the observed behavior to memory by forming symbols or mental images (Bandura, 1986).

Forethought Capability also involves the ability for humans to form symbols. A person will anticipate an outcome based on previous experiences committed to memory in the form of symbols. A person uses previous experiences to form a certain expectation of what an outcome will be if a certain behavior is performed. The actual expectation of

the outcome has a greater influence and is a stronger indicator of whether the behavior will be performed again, than the actual outcome itself (Bandura, 1986).

Self-Regulatory Capability is comprised of a person's ability to self-regulate their behavior based on personal influences and those of the environment in which they live. It is the combination of motivational, social and moral standards that sets the foundation in which certain actions are carried out. According to Bandura, most people have the ability to self-regulate through a process of self-reprimand, personal approval, internalizing personal morals and standards, goal setting and evaluating personal accomplishments. He further states that not all standards are personally adhered to. Only those morals and standards that closely mirror oneself, most valued by oneself and the degree of control a person perceives he or she has over a certain behavior are internalized (Bandura, 1986).

Self-Reflective Capability includes analyzing one's experiences, reflecting over one's own thought processes and then altering one's thinking accordingly. Bandura contends that self-efficacy, or developing a sense of self is a major determinant of self-regulation. People form their own ideas and opinions about who they are and what they are capable of achieving. These personal ideas and opinions influence the actions and efforts that a person will put into their performance. Bandura also states "that social

comparison of one's own performance to the performance of others, especially in peers or siblings, also serves as a strong source of self-efficacy" (Stone, 1999).

Bandura's (1986) SCT has been adapted for use in this study (see Figure 1). The SCT contains the self-regulatory capability theme, where morals and values help a parent to develop individual parenting skills. The self-reflective capability theme includes the parent's thoughts and the reciprocal determinism theme includes the parent's personal characteristics and environment. Various aspects of parenting are learned through observations which are included in the vicarious capability and forethought capability theme of the SCT. Other factors that influence parenting styles can be attributed to disagreements between parents, parental dysfunction and multiple caregivers. All of the external influences mentioned are then shaped into symbols or mental pictures that give the parent meaning or understanding. This meaning is described in the symbolizing capability theme. Parents develop parenting skills and parental feeding behaviors that are based on lived experiences that Bandura describes in the forethought capability theme.

The child is dependent upon the parent for nourishment, discipline and nurturance. Oftentimes, the child will adopt many of the patterns of behavior that are dominant within the family and social unit that they live in (Agras et al., 2004). The

child will form a pattern of behavior that they feel is most acceptable both personally and within their social unit by also using the six themes described in the SCT.

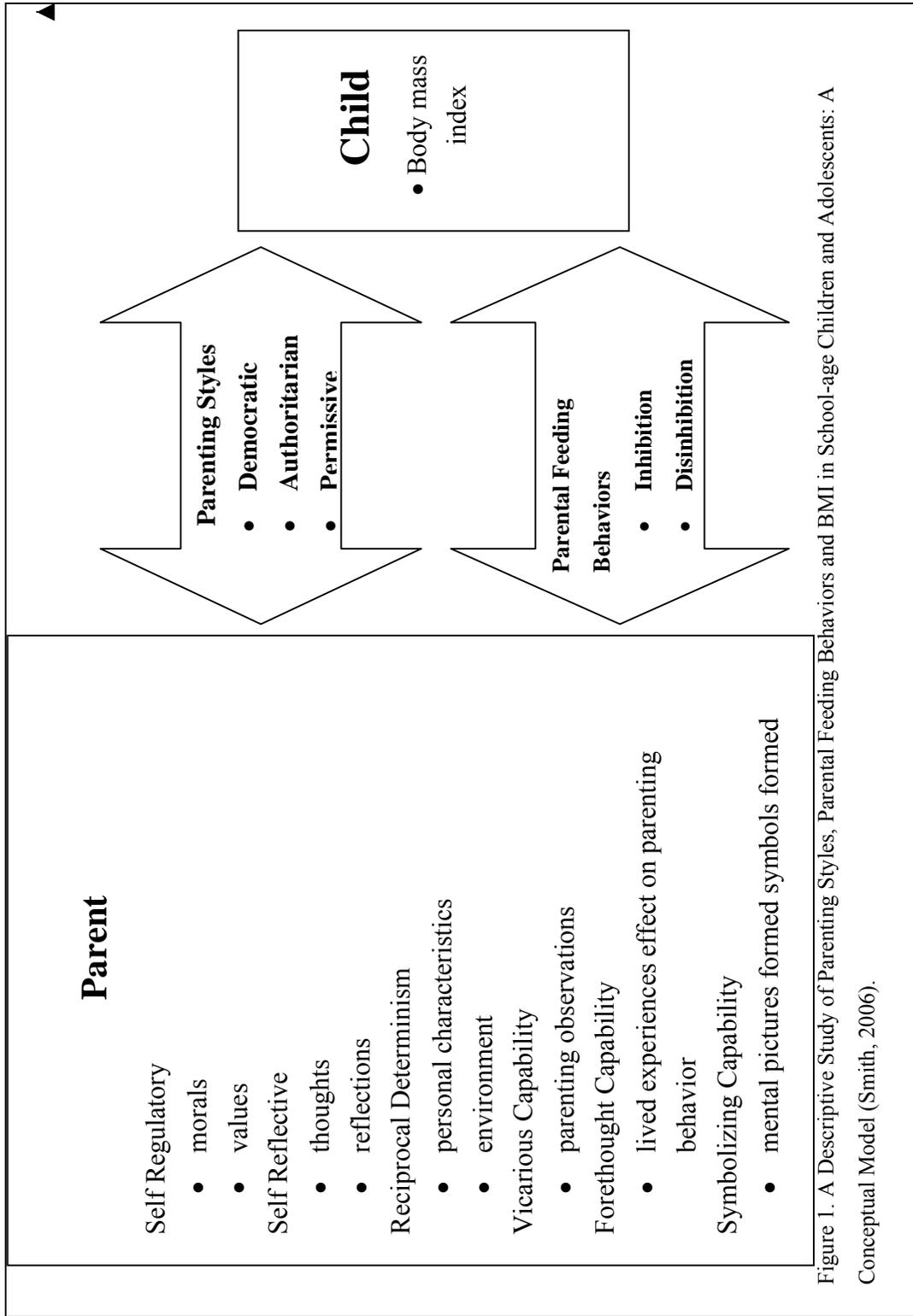


Figure 1. A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI in School-age Children and Adolescents: A Conceptual Model (Smith, 2006).

Sum

mary

The identification of parenting styles and feeding behaviors are instrumental in helping to identify patterns within the family as a unit and each member individually. This information is vital to the development of a successful individualized family approach towards a healthier lifestyle. Bandura's Social Cognitive Theory contains key concepts that help to understand how certain behavior patterns are formed within and between individuals, and how these behaviors can be modified to achieve a healthier lifestyle. Any attempt to understand and to help change the alarming problem of childhood obesity, without taking into consideration the social and family environment in which the individual child lives, cannot hope to have long-term success. Chapter III will present the research methods used for the research study, including a description of the sample: the setting, inclusion and exclusion criteria, as well as the population and sampling plan for the research study.

### III. METHODS

This chapter presents the research design, setting, instruments, and sample population of the study. The instruments used for data collection are described and the procedures used to gather the data will be discussed. This chapter concludes with the plan for analysis of the data gathered with regard to the research questions posed in Chapter I.

#### *Research Design*

This research study used a descriptive design. The purpose of a descriptive design is to describe the relationship among the variables as they naturally occur (Polit & Beck, 2004). One of the strengths of the descriptive design is to describe relationships, understand behaviors, conditions, and situations that naturally occur, without manipulation or control of the situations during the research.

Because this research consists of the use of two questionnaires and not a long-term research study, this eliminates many of the threats to the internal validity such as the ability for the parents to learn new approaches towards parenting and feeding

behaviors and how this may contribute to pediatric and adolescent obesity. External validity threats

are the generalization of the results to all parents with children or adolescents who are identified as overweight or obese.

The decision to administer the questionnaires at the first visit to the Lipid Clinic is an attempt to obtain genuine answers from the parents without any influences from the staff at the Lipid Clinic. No attempt will be made to control or manipulate the responses from the participants in any way.

### *Research Setting*

The research setting was a Lipid Clinic within Dayton Children's: The Children's Medical Center of Dayton in the Midwest of the United States of America. The children were referred to this clinic by their primary care physician or pediatrician for weight and lipid concerns. The hospital bed capacity was 155 beds and is a Level 2-trauma center. This Lipid Clinic has provided care for approximately 550 patients per year and is currently open to patients three days a week. Permission to conduct this study was granted by the Director of the Lipid Clinic (Appendix C).

### *Population*

The target population was families who were referred to the Lipid Clinic for the first visit. Any parent or legal guardian or primary care giver of the child was invited to participate in this research study. If more than one parent was present, both were offered

the opportunity to participate individually. The number of new referrals to the Lipid Clinic during the three month timeframe was approximately 100.

### *Sampling Plan*

The convenience sampling method was used to collect data from families referred to the Lipid Clinic for the first time because of the ease and availability of recruiting potential participants of interest in this research study. The office staff had each new family identified on their daily schedule.

The advantages of convenience sampling in the Lipid Clinic on Thursdays was the ease and accessibility of recruiting participants that met the criteria the primary research investigator was researching. Recruitment on Thursdays, which was the only full day that the Lipid Clinic was open, allowed the primary research investigator to have access to a larger number of potential research participants.

The inclusion criteria included: families who were able to speak and read English and understand the questionnaires based on the high readability. The following families that were excluded from the research study if the child or adolescent was diagnosed with the following conditions: Hypothyroidism, Prader-Willi, Downs Syndrome, Asberger Syndrome, Autism and Bipolar Disorder and any other medical conditions or those taking certain prescription medications that were determined by the

physician. Children or adolescents, with these conditions, were excluded from the research study because of the complexity of their medical conditions, and the strong impact these conditions had on BMI.

Data from at least 30 parents was needed to provide information to complete a descriptive analysis containing percentiles, mean, median, mode ranges and a simple correlation with a power of .8 at  $\alpha = .05$  with a median effect size. At the conclusion of the appointment, the parent(s) were asked by a member of the Lipid Clinic staff if they would like to participate in the research study.

#### *Ethical Considerations/Human Subject Protection*

Permission to conduct the study was obtained from Dayton Children's: The Children's Medical Center of Dayton's Institutional Review Board (Appendix D) and Wright State University (Appendix E). The participants were offered the opportunity to complete the questionnaire in private and no personal identifying information was recorded on the questionnaires. Each participant had their ethical principles protected during the course of this research study as follows:

*Freedom from harm.* Each participant in a research study had the right to freedom from harm. This included freedom from physical, psychological and economic harm.

Every eligible family was given the opportunity to participate in this study without risk

of physical harm, as the only clinical component of this study was the routine measurement of height and weight of the child or adolescent. Each parent or legal guardian was protected from psychological harm, as they were given the right to refuse to participate without fear of prejudice or jeopardizing their relationship with the physician and staff members at the Lipid Clinic. The parents had the opportunity to ask questions, as they arose, during the time that they were filling out the questionnaires as the primary research investigator remained onsite in the Lipid Clinic.

*Freedom from exploitation.* Each participant in a research study had the right to freedom from exploitation. Every eligible family was given the opportunity to complete the questionnaires without fear of exposure or being placed at a disadvantage. Each parent completing the questionnaire was allowed to complete the questionnaires in private and confidentiality was maintained throughout the entire research study. All participants had the right to have their privacy protected under the standards set by the Health Insurance and Portability and Accountability Act (HIPAA). All completed questionnaires were placed in an envelope and kept in a locked cabinet that was not accessible to anyone but the primary research investigator. The primary research investigator, faculty advisors at Wright State University and the Statistician were the only staff members that had access to the information gathered.

*Right to self-determination.* Each participant in a research study had the right to self-determination. Every eligible family was given the opportunity to accept or refuse to participate in this research study without fear of coercion or manipulation from the primary investigator or staff members of the Lipid Clinic. At any time while completing the questionnaires, the participants had the right to withdraw from the research study. If the participants had questions during the time of participation, they were to feel free to ask questions. The participants were also be given the opportunity to ask questions after the completion of the questionnaires and were given a copy of the consent form that included the primary research investigator's contact information, should they have had any future questions regarding the research study.

*Right to full disclosure.* Each participant in a research study had the right to full disclosure. The primary research investigator fully described the nature of the research study to the family as well as the risks and benefits of participation. The family was also informed of the primary research investigator's responsibilities during this research study, including explanation of the study, answering any questions that may arise while completing the questionnaires, giving each participant a photocopy of the consent form and maintaining confidentiality of all information gathered during the research process.

#### *Instruments*

This study used three instruments including a brief general demographic questionnaire. The demographic questionnaire contained fifteen questions asking questions including gender and age of child and parent, marital status, number of children, level of education, meals consumed inside and outside the home (Appendix F). The questions were answered by the parent or legal guardian by selecting the appropriate answer listed or fill in the blank. There was one question that was completed by the primary research investigator that asked for the child's BMI. This answer was obtained from the child's medical record based on the findings from the clinic visit conducted that same day. The BMI was recorded on the demographic questionnaire prior to the parent or legal guardian completing the questionnaire.

The Parental Authority Questionnaire (Appendix B) was developed by Dr. John Buri in 1991, to test Dr. Diana Baumrind's parental authority prototypes. Permission to use the Parental Authority Questionnaire was requested through an e-mail to the original author. The original intended use for the PAQ was for the adolescent to evaluate their parent's parenting style. Communication via e-mail was sent to Dr. John Buri at the University of St. Thomas and permission to change the wording to first person was granted as well as acknowledgement that the tool had been successfully used as a self-evaluation for the parents (Appendix B).

The Parental Authority Questionnaire had 30 questions and responses were made on a 5-point Likert scale with a range from strongly agree to strongly disagree. The PAQ had been shown to be a valid measure for parental authority types (Buri, 1991). The original instrument contained a separate version of the questionnaire for mother's and father's and the following test-retest reliabilities were obtained: mother's permissiveness .81, mother's authoritarianism .86, mother's authoritativeness .78, father's permissiveness .77, father's authoritarianism .85 and father's authoritativeness .92.

The Parental Authority Questionnaire had three subscales within the questionnaire. Each question had a certain number of asterisks assigned to it to identify which subscale the question is measuring. The subscales were identified in the following way: authoritative \*\*\*, authoritarian \*\* and permissive \*. Each question was given a point value ranging from 1 through 5 based on the answer chosen by the parent. Scores ranged from 10 to 50 and the higher the score, the greater the appraised level of the parental authority prototype measured (Buri, 1991).

The Three Factor Eating Questionnaire (Appendix A) was developed by Albert Stunkard and Samuel Messick in 1981 to measure three dimensions of human eating behavior. Harcourt Assessment was contacted via the phone and the Qualifications

Department determined that The Three Factor Eating Questionnaire could be used by the primary research investigator for this study (Appendix A).

The Three Factor Eating Questionnaire had 21 questions for Factor 1 measuring cognitive control of eating behavior, also referred to inhibition or dietary restraint, 16 questions for Factor 2 measuring disinhibition of control, and 14 questions for Factor 3 measuring susceptibility for hunger. Cronbach's alpha reliabilities for the Three Factor Eating Questionnaire were .92 for Factor I subscale measuring cognitive (conscious) control of eating, .91 for Factor II subscale measuring disinhibition of eating, and .85 for Factor III subscale measuring susceptibility (perceived) for hunger (Stunkard & Messick, 1985). The validity of the Three Factor Eating Questionnaire to measure cognitive restraint, disinhibition and hunger has been analyzed and has consistently demonstrated that the scores of each subscale have identified the differences between the groups and this has been supported by theory and research on eating behaviors (Stunkard & Messick, 1988).

The Three Factor Eating Questionnaire had a total of 51 questions with answers of either true or false. This questionnaire came with a ready score sheet in which the parent filled in the circle T with pen, for each question that the true answer applies to them. If the answer for a question was false, then the parent filled in the circle F with ink.

There was a tear-away carbon copy portion to the scoring sheet that was not visible to the parent that the primary research investigator used to analyze the data. The answers chosen by the parent showed up on the carbon copy with either a circle, square or triangle shape surrounding their answers. The circle shape surrounding an answer measures cognitive restraint of eating, the triangle shape surrounding an answer measures disinhibition and the square shape surrounding an answer measures hunger. A high score in a specific dimension was a predictor of the type of feeding behavior used most by the parent (Eating Inventory Manual, 1988).

### *Procedure*

The following steps were taken to conduct this research study:

1. Permission to conduct this research study was obtained from Dayton Children's: The Children's Medical Center of Dayton Institutional Review Board (Appendix D), Wright State University Institutional Review Board (Appendix E), the thesis committee and Dr. Ebert, Director of the Lipid Clinic (Appendix C).
2. Upon completion of the first appointment, families attending the Lipid Clinic were invited to participate in the research study by a member of the staff at the Lipid Clinic. The research data was collected on Thursdays, as this was the only full day that appointments were currently scheduled in this clinic.

3. Families who agreed to participate in the research study were directed to the primary research investigator to receive full disclosure of the research study, including risks, benefits, confidentiality and the right to refuse to participate at any time without prejudice, penalty or jeopardizing relationships with the institution or staff.
4. After allowing the families to ask questions, they were then given the consent form to read and sign (Appendix G). The consent form was signed by the primary research investigator and a witness signature was obtained from a member of the Lipid Clinic staff. Once the parent(s) signed the consent form, assent to participate was also obtained from any child or adolescent age seven or older.
5. Each set of questionnaires was assigned consecutive numbers, starting with the number one, in order to keep track of the current number of participants. If two parents or legal guardians were completing the questionnaires, the same number was assigned to both sets of questionnaires and one set of parent's questionnaires had the letter 'a' assigned to it. This was done to help the primary investigator keep an accurate count of individual families participating, while allowing each individual parent the opportunity to participate.

6. The child or adolescent's BMI was calculated and this information was written on the Demographic Questionnaire (Appendix F) by the primary research investigator (Department of Health and Human Services, 2006) prior to the parent or legal guardian receiving the questionnaires.
7. Parents then received the questionnaires (Appendices A, B and F) to complete in private and were given the envelopes to place the completed questionnaires in. The primary research investigator remained within the clinic, while the parent or legal guardian was completing the questionnaires, if any questions arose during the completion of the questionnaires.
8. Once the questionnaires were completed, the parent or legal guardian was instructed to place them in the envelope and seal the envelope. The primary research investigator was asked if the family had any questions regarding the questionnaires or the research. All of questions were answered by the primary research investigator or by the physician when appropriate.
9. The family received a photocopy of the consent form, including contact information if they had further questions (Appendix G).
10. The family was thanked for their participation in the research study and was assured that no further participation were required from them. Each parent or

legal guardian that participated in the study received a ten dollar gift card as compensation for their time.

11. All completed questionnaires were immediately placed in a locked box and placed in a locked cabinet within the Lipid Clinic. Only the primary research investigator had the key to the locked box throughout the entire research study.
12. After data was collected from a minimum of 30 participants and entered twice into SPSS 15.0 by the primary research investigator, the data file was analyzed by Statistics Department at Wright State University.

#### *Data Analysis Plan*

The SPSS 15.0 program was used to analyze the research data. The information was manually entered into the SPSS program by the primary research investigator. The data was entered a minimum of two times and compared to help ensure that there are no data entry errors.

The demographic characteristics was analyzed using descriptive statistics of percent, measures of central tendency (mean, median) and measures of dispersion (range, cumulative percent and standard deviation). In addition, Pearson Product Moment Correlations were used to identify associations between parenting style and feeding behavior.

### *Research Questions*

1. What were the parenting styles of parents who had a child or adolescent who was overweight or obese?

This question was analyzed using descriptive analysis of the parenting styles identified from the responses received from the completed Parental Authority Questionnaire using percentiles, mean, median, ranges, standard deviations and inter-quartile ranges.

2. What cognitive restraint or disinhibition behaviors were demonstrated by parents who had a child or adolescent that was overweight or obese?

This question was analyzed using descriptive analysis of the parental feeding behaviors identified from the responses received from the completed Three Factor Eating Questionnaire using percentiles, mean, median, ranges, standard deviations and inter-quartile ranges.

3. What was the association between parenting style and parental feeding behavior with children or adolescents who were overweight or obese?

This question was analyzed using a correlation analysis of parenting styles and parental feeding behaviors identified from the scores of the Parental Authority Questionnaire and the Three Factor Eating Questionnaire. To determine if the

child or adolescent was overweight or obese, the height, weight was used to calculate the BMI.

#### IV. FINDINGS

Health care professionals working with children or adolescents who are overweight or obese need to be aware of the possible parental influences to which that child or adolescent is exposed. This descriptive study of parenting styles, parental feeding behaviors and BMI in children and adolescents is, therefore, necessary to inform healthcare professionals about possible contributing influences. In this descriptive study, three questionnaires were used including the Parental Authority Questionnaire, the Three Factor Eating Questionnaire and a demographic questionnaire. Data were gathered through these questionnaires from 33 parents and legal guardians with a final sample size of 30 participants used. Two of the questionnaires were excluded from the study because they were incomplete and one was excluded as the parent was unable to understand the questionnaires due to a low literacy rate.

The purpose of this study was to describe parenting styles and parental feeding behaviors of parents whose children or adolescents are overweight or obese. This chapter presents the analysis of the data. The demographics were reviewed using frequency and percentage for the Likert-like questions. Mean, median, standard deviation and inter-

quartile ranges were used for descriptive data. Descriptive statistics for items on the Three Factor Eating Questionnaire and the Parental Authority Questionnaire included mean, standard deviation, median, inter-quartile range, mode, range and frequency. Pearson Product Moment Correlation was used to examine research question 3. Alpha was set at .05.

Data were collected over a three-month period from January 4, 2007 through March 15, 2007. Approximately 70 new patients were scheduled at the Lipid Clinic during that time period. The primary research investigator was unable to gather data from approximately 15 % of the parents who were “no shows” for their appointments. During this time, 36 participants were invited to participate in the research study. Of the 36 parents asked, only 33 parents chose to participate. It was later discovered, after reviewing the data that three of the parents did not complete all of the questionnaires and those three parents were removed from the research study. The response rate was 92 %. Data were not collected on the exact cause of why the three questionnaires removed from the study were not completed, but it may be the result of limited time as many parents had other clinic appointments scheduled following this appointment.

#### *Description of Sample*

The demographic data was analyzed using descriptive statistics (Table 1). In this research study, the average parent's age was 38.17 years and they have an average of 2.63 children. The average age of the child referred to the Lipid Clinic, was 10.23 years. The following averages regarding food intake were obtained: meals cooked in the home (1.883) daily snacks consumed between meals (1.85) and restaurant cooked meals consumed by the family each week (2.1).

Table 1

*Means for Sample Demographics*

Variable	Mean	SD	Range
Parent's age	38.17	8.239	26 – 67.0
Number of children	2.63	1.270	1 – 7.0
Child's age	10.23	3.701	4 – 16.0
Number of home cooked meals	1.883	0.6551	1 – 3.0
Daily snacks between meals	1.85	1.2483	1 – 6.0
Restaurant cooked meals	2.1	1.2243	1 – 5.0

Note: Data on one parent's age was missing.

Frequency and percent were used to examine categorical responses (Table 2).

Thirty parents or legal guardians participated in this research study. There were 24 female participants (80%) and six male participants (20%). The majority of parents were

married (76.7%) and had at least a high school education (93.3%). The shift most often worked by parents was first shift (50%). The annual family income reported in this study showed a relatively flat distribution across income groups with a median of 3.73.

The primary caretaker/disciplinarian of the child was the reporting parent. Of the children, 17 were females (56.6%) and 13 were males (43.3%). The majority of the children were Caucasian (63.3%) with 30% African American. Thirteen of the children were the oldest child in the family (43.3%) while 11 were the youngest (36.7%).

Table 2

*Sample Demographics*

Variable	Frequency	Percent	Cumulative Percent
<u>Parent's Gender</u>			
Female	24	80.0	80.0
Male	6	20.0	100.0
Total	30	100.0	
<u>Marital Status</u>			
Single/never married	5	16.7	16.7
Married	23	76.7	93.3
Divorced	2	6.7	100.0
Total	30	100.0	

Table 2 cont.

*Sample Demographics*

Variable	Frequency	Percent	Cumulative Percent
<u>Highest Level of Education</u>			
Middle school/Junior high	<u>1</u>	<u>3.3</u>	<u>3.3</u>
High school	<u>15</u>	<u>50.0</u>	<u>53.3</u>
Technical/Vocational school	<u>1</u>	<u>3.3</u>	<u>56.7</u>
College or beyond	<u>13</u>	<u>43.3</u>	<u>100.0</u>
Total	<u>30</u>	<u>100.0</u>	
<u>Shift that Parent Works</u>			
First shift	15	50.0	50.0
Second shift	1	3.3	53.3
Third shift	2	6.7	60.0
Varying shift	3	10.0	70.0
Works at home	3	10.0	80.0
Unemployed	6	20.0	100.0
Total	30	100.0	

Table 2 cont.

*Sample Demographics*

Variable	Frequency	Percent	Cumulative Percent
<u>Race of Child</u>			
African Amercian	9	30.0	30.0
<u>Asian</u>	1	3.3	33.3
<u>Caucasian</u>	19	63.3	96.7
<u>Biracial</u>	1	3.3	100.0
<u>Total</u>	30	100.0	
<u>Child's Gender</u>			
Female	17	56.6	56.6
Male	13	43.3	100.0
Total	30	100.0	
<u>Annual Family Income</u>			
0 to \$20,000	3	10.0	10.0
\$21,000 to \$35,000	5	16.7	26.7
\$36,000 to \$50,000	6	20.0	46.7
\$51,000 to \$75,000	6	20.0	66.7
\$76,000 to \$90,000	3	10.0	76.7
\$91,000 and over	7	23.3	100.0
Total	30	100.0	

*Analysis of Data by Research Questions*

**Research Question 1: What are the parenting styles of parents who have a child or adolescent who is overweight or obese?** Parents or legal guardians were asked to complete the Parental Authority Questionnaire (Buri, 1991), which measured for authoritarian, authoritative and permissive parenting styles (Table 3). The authoritarian parenting style had a mean of 30.63 (SD = 5.80) and median of 31.00 (range 15 to 42). The authoritative parenting style had a mean of 39.33 (SD = 4.27) and median of 39.50 (range 28 to 48). The permissive parenting style had a mean of 24.00 (SD = 4.10) and median of 24.00, (range 16 to 31). No inter-correlations were found. See Table 3.

Table 3

*Parenting Styles*

	(Mean)	(SD)	(Md)	(IQR) 25-75%
Authoritarian	30.63	5.80	31.00	2.00 – 3.00 3.00 – 4.00
Authoritative	39.33	4.27	39.50	3.00 – 4.00 4.00 – 5.00
Permissive	24.00	4.10	24.00	1.00 – 4.00 2.00 – 5.00

**Research Question 2: What cognitive restraint or disinhibition behaviors are demonstrated by parents who have a child or adolescent who is overweight or obese?** The parents or legal guardians were asked to complete the Three Factor Eating Questionnaire (Stunkard & Messick, 1985) which measured cognitive restraint, disinhibition and hunger behaviors. The cognitive restraint feeding behavior had a mean of 9.30 (SD = 5.01) and median of 9.50, (range 1 to 21). The disinhibition feeding behavior had a mean of 6.23 (SD = 3.14) and median of 6.00, (range 2 to 12). The hunger feeding behavior had a mean of 4.40 (SD = 2.77) and median of 4.00, (range 1 to 11). (See Table 4). A significant correlation was found between disinhibition and hunger ( $r = .66$  and  $p = .000$ ) using Pearson's Product Moment Correlation thus the disinhibition behavior was used solely in this research study.

Table 4

*Parental Feeding Behaviors*

	(M)	(SD)	(Md)	IQR 25 - 75%
Cognitive Restraint	9.30	5.01	9.50	.00 – 1.00
Disinhibition	6.23*	3.14	6.00	.00 – 1.00
Hunger	4.40*	2.77	4.00	.00 – 1.00

\*  $p = .001$  (two-tailed)

**Research Question 3: What is the association between parenting style and parental feeding behavior with children and adolescents who are overweight or obese?** Pearson product moment correlation found a significant correlation between the disinhibition parental feeding behavior and authoritative parenting style ( $r = .37$  and  $p = .042$ ) (Table 5).

Table 5

*Correlation of Study Variables*

	Cognitive Restraint		Disinhibition			Hunger
	r	p	r	p	r	p
Authoritarian	-.282	.131	.271	.147	.206	.276
Authoritative	.122	.520	.374	.042*-	.275	.141-
Permissive	-.030	.876	.035	.852	.125	.512

\*. Correlation is significant at the 0.05 level (2 tailed).

## V. DISCUSSION

The purpose of this chapter is to summarize this descriptive study, which examined parenting styles, parental feeding behaviors and BMI in school-age children and adolescents. The chapter starts with a discussion of the findings, comparison of the findings with current literature, limitations and suggestions for changes to the current research design. Possible implications for nursing practice and nursing education are also examined, as well as social policy and middle class culture. The chapter concludes with recommendations and implications for future research.

The study included parents or legal guardians of school-age children or adolescents who were referred to Dayton Children's: The Children's Medical Center of Dayton's Lipid Clinic for the first time. All of the parents or legal guardians of overweight or obese children or adolescents who were referred to the Lipid Clinic between January 4 and March 15, 2007, were invited to participate in this research study. No further participants were approached once the adequate sample size was obtained.

The age range of participants was 26 to 67 years with an average age of 38 years.

Eighty percent of the participants were females. The majority of the participants were

married, high school graduates with a self-reported annual income of over \$50,000. The mean age of the child or adolescent referred to this clinic was 10.23 years and the race percentiles were 63.3 % Caucasian, 30% African American, 3.3% Asian and 3.3% bi-racial.

In this study, the description of participants was not typical of those families considered to be 'at most risk' of being overweight or obese in previous literature. The majority of the participants in this research study were white, married, educated middle-class females who worked outside the home. However, some of the greatest risk factors identified in previous literature were low socio-economic status, single parent households, those of the Hispanic and African-American race, and low parental education level (Henry & Royer, 2004; NAPNAP Healthy Eating and Activity Together Initiative, 2006; Worobey, Pisuk & Decker, 2004; Sweeney, Glaser & Tedeschi, 2007). These findings indicate that the risk for becoming overweight or obese has begun to cross all cultural, racial and socio-economical lines and healthcare professionals need to be aware of this trend.

The majority of the parents in this study reported that they were working (80%) and had an annual income of more than \$51,000 (53%), 23% of the 53% reported greater than \$91,000. Middle-class citizens have the dominant culture in America (Friedman,

Bowden & Jones, 2003). The middle-class culture focuses on personal achievement and moving up the social ladder. Many middle-class women are in the work force and are reallocating their time to focus on occupational goals (Friedman, Bowden & Jones).

Although educated parents often have increased access to information on healthy nutrition through regular visits with their physician, printed materials, internet and other sources of media there appears to a conflict in what foods they want their family to consume and what actually is consumed. Working parents have less time to spend shopping and cooking healthy meals and choosing the cheap and convenient option of fast food or easy to prepare food has become easier option and the children are less likely to argue about eating the fast food (Bruno & Tarr, 2004).

Middle-class Americans of varying ethnicity are undergoing an acculturation process while moving up the social ladder and many are discarding their own traditions and values and blending into mainstream society (Friedman, Bowden & Jones, 2003).

Over 36% of the children and adolescents whose parents participated in this study were of a different race than Caucasian. Although they were not the majority, the children represented in this group were of the African American race, which has been identified as being at a higher risk for obesity than Caucasians (National Association of Pediatric Nurse Practitioner's, 2006; Henry & Royer, 2004). These children, however, did not

typically come from impoverished families but rather families that are considered middle-class Americans. It would seem that using race as predictor of ‘risk for becoming obese’ without also including the identification of whether the family is attempting to adopt the culture and values of middle-class America, would be inaccurate.

### *Parenting Styles*

The Parental Authority Questionnaire (Buri, 1991) measured three parenting style subscales. The total Cronbach alpha for parenting style in this research study was 0.600. All parents exhibited some degree of each of the parenting styles that this questionnaire measured and the scoring of the questionnaire revealed which parenting style that each parent ascribed to most.

The authoritative parenting style subscale was described as providing clear direction towards their children but allowing reason, flexibility, verbal give-and-take and warmth (Buri, 1991). The mean score for the authoritative parenting style subscale was 39.33 (SD = 4.27) and the Cronbach alpha score was 0.753. This score was the highest of the parenting styles identified in this study although there was a high variability in the values obtained within this subscale. This subscale was found to be an acceptable measure of internal consistency in its ability to measure for the authoritative parenting style as this subscale had a Cronbach’s alpha score greater than 0.7 which is based on the

general rule that a Cronbach's alpha score of .7 or higher is considered acceptable (Waltz, 1984).

The results that identified the authoritative parenting style subscale as the largest parenting group was in contrast to many studies that identify the authoritarian parenting style as a significant risk factor for childhood obesity (Hood, Moore, Sundarajan-Ramamurti, Singer, Cupples & Ellinson, 2000; Birch & Davison, 2001; Fisher & Birch, 2002; Drohan, 2002; Golan & Crow, 2004; Larsen, 2006). Researchers have previously hypothesized that the authoritarian parenting style does not allow for the child to develop their own hunger and satiety cues, therefore the child develops the pattern of overeating (Hood, Moore, Sundarajan-Ramamurti, Singer, Cupples & Ellinson, 2000; Fischer & Birch, 2002; Birch & Davison, 2001). However, the authoritative parenting subscale had the highest mean and all of the children and adolescents in this study were categorized as obese. It could be that the authoritative parenting style, with its 'give and take' approach towards disciplining sends a mixed message to older children and adolescents and lacks consistency. This lack of consistency may be attributed to a number of factors including high percentage of parents who are employed (80%) due to a higher cost of living which, in turn, may demand a more flexible, give-and-take approach towards parenting.

Working families are becoming more democratic with children and adolescents having

more independence and influence on household decisions resulting in unhealthy food choices (Roberts, Blinkhorn & Duxbury, 2003; Enten & Golan, 2008). Research shows that young children form eating behaviors as early as two years of age and the behaviors are formed through a process of modeling and positive reinforcement from the parents (St. Jeor, Perumean-Chaney, Sigman-Grant, Williams & Foreyt, 2002). If the young child learns that a certain food is unhealthy, yet the parent uses that same food as a reward for good behavior or continues to be offered that food at mealtimes, then the child receives mixed messages (Morton & Campbell, 1999).

Working parents have become more flexible in their parenting as well as family feeding behaviors as their time is limited and it is easier to bring their child to a fast food restaurant than to cook a balanced meal (Bruno et al., 2004). The availability of cheap and easy food has appealed to many working families and children have acquired a taste for this tasty, high fat diet and prefer this food over healthier alternatives (Bruno et al.). Parents, who provide healthy food choices in the home, but allow the child to control how much food is eaten provides the child the opportunity to develop his or her own hunger satiety cues which is essential in order to develop healthy eating habits (St Jeor et al., 2002). As the child grows older, if healthy eating patterns have been established early

on, the foundation has been laid for that child to continue healthy eating habits through the adolescent years and adulthood (St. Jeor et al.).

The authoritarian parenting style subscale was described as highly directive towards their children with the expectation of obeying without question (Buri, 1991). The mean score for the authoritarian parenting style subscale was 30.63 (SD = 5.80) with a Cronbach alpha of 0.734. This score identified the second-highest of the parenting styles in this study although there was high variability in the values obtained within this subscale. This subscale was found to be an acceptable measure of internal consistency in its ability to measure for the authoritarian parenting style as the Cronbach's alpha was greater than 0.7 (Waltz, 1984).

The permissive parenting style subscale was described as relatively non-controlling and using minimal punishment (Buri, 1991). The mean score for the permissive parenting style subscale was 24.00 (SD = 4.10) and the Cronbach alpha was 0.483. This score identified the smallest group of the three parenting styles in this study which was surprising as it was hypothesized by the researcher and some of the health care staff at the research site that the permissive parenting subscale would have the highest mean value as it appeared that the parents exhibited very little control over what and how much their children were eating. The permissive subscale did not have an

acceptable measure of internal consistency in its ability to measure the permissive parenting style and, therefore, makes the findings subject to question.

### *Parental Feeding Behaviors*

The Three Factor Questionnaire (Stunkard & Messick, 1985) measured three parental feeding behavior subscales, hunger, disinhibition, and inhibition. The total Cronbach alpha for the parental feeding behaviors in this research study was 0.766. All parents exhibited some degree of each of the parental feeding behavior that this questionnaire measured. The scoring of the questionnaire revealed which parental feeding behavior that each parent ascribed to most. The Three Factor Eating Questionnaire included 14 questions looking at the hunger feeding behavior, with 16 questions for the disinhibition feeding behavior and 21 questions for the cognitive restraint feeding behavior. In this research study, the Three Factor Eating Questionnaire was not a strong tool in differentiating between disinhibition and hunger feeding behaviors. Some of the questions examining hunger feeding behaviors were very similar to the questions examining disinhibition feeding behaviors. The disinhibition feeding behavior subscale was found to be highly correlated with the hunger feeding behavior subscale, therefore, the hunger feeding behavior was removed from the analysis of this

study as one scale seemed to measure both concepts and the interest was focused on the most extreme behaviors.

The cognitive restraint feeding behavior was described as a conscious mechanism for restraining food intake, such as dieters (Stunkard & Messick, 1985). The mean score for the cognitive restraint parental feeding behavior subscale was 9.30 (SD = 5.01) with a Cronbach alpha of 0.864. This score identified the most predominant of the parental feeding behaviors in this study although there was high variability in the values obtained within this subscale. This subscale was found to be an acceptable measure of internal consistency in its ability to measure for the cognitive restraint parental feeding behavior as the Cronbach's alpha was greater than 0.7 (Waltz, 1984).

The finding that cognitive restraint feeding behaviors are predominant in families with obese children is typical of the many previous studies (Golan & Crow, 2004; Drohan, 2002; Birch & Davison, 2001; Morton & Campbell, 1999). Previous research supports this finding that children or adolescents, whose parents exhibit the cognitive restraint feeding behavior, are at increased risk for becoming overweight or obese due to their inability to learn to recognize hunger cues and self regulate eating behaviors (Johnson, 2000; Golan & Crow, 2004; Drohan, 2002; Birch & Davison, 2001; Morton & Campbell, 1999).

The finding of the cognitive restraint parental feeding behavior may be attributed to a number of factors, including a high percentage of female participants (80%) who are more likely to try various controlling attempts such as dieting to reach or maintain a desirable weight (Johnson, 2000). A higher level of cognitive restraint is found among parents that have a higher educational level and income, as they have had access to more information on healthy nutrition and also have more money that allows them to make healthier food choices for their families than those parents of lower socioeconomic status (Sherry, McDivitt, Birch, Cook, Sanders, Prish, Francis & Scanlon, 2004).

As with any questionnaire that requires a participant to give answers based on a self-report, there is a risk of response bias (Polik & Beck, 2004). Healthcare professionals, who are aware of the risk factors associated with certain parental feeding behaviors such as cognitive restraint, could identify families at risk and develop individual family teaching plans that address issues related to that specific behavior.

The disinhibition feeding behavior was described as the inability to control food intake, regardless of hunger (Stunkard & Messick). The mean score for the disinhibition parental feeding behavior subscale was 6.23 (SD = 3.14) with a Cronbach alpha of 0.690. This score was the second-highest of the parental feeding behaviors identified although there was a moderate amount of variability in the values obtained within this subscale.

This subscale was found to be just slightly lower than the acceptable measure of internal consistency in its ability to measure for the disinhibition parental feeding behavior and, therefore, was not a good tool for measuring the disinhibition variable in this particular study (Waltz, 1984).

The hunger feeding behavior was described as feelings of hunger and its behavioral consequences (Stunkard & Messick, 1985). The mean score for the hunger parental feeding behavior subscale was 4.40 (SD = 2.77) and the Cronbach alpha was 0.652. This was the smallest group of parental feeding behaviors however there was minimal variability in the values obtained within this subscale. This subscale was found to be lower than the acceptable measure of internal consistency in its ability to measure for the hunger parental feeding behavior and, therefore, was not a good tool for measuring the hunger variable in this study (Waltz, 1984).

#### *Parenting Style and Parental Feeding Behavior*

Much of the previous research only looked at parenting styles or parental feeding behaviors individually as they relate to childhood obesity. This research study took into consideration both of these behaviors and a significant association between the disinhibition parental feeding behavior and the authoritative parenting style was found ( $r=.37$ ,  $p=.042$ ). (See Table 5). This finding may be attributed to the similarities between

both characteristics as they both exhibit give-and-take measures of control and flexibility in parenting and feeding behaviors.

The parent's own parenting style or feeding behaviors contribute to the family environment in which the children and adolescents learn behaviors that are considered acceptable within the context of their own family (Hood, Moore, Sundarajan-Ramamurti, Singer Cupples & Ellinson, 2000). A previous study found that if both parents' exhibit high levels of disinhibition in their feeding practices, their child is much more likely to gain excess weight early in life (Hood, Moore, Sundarajan-Ramamurti, Singer, Cupples & Ellinson). High levels of dietary restraint or disinhibition is closely associated with the cognitive restraint of eating behavior, whereas low levels of restraint or disinhibition is more closely related to the hunger feeding behavior (Hood et al.). In addition, two previous studies involving Czech children and one of Chinese American children found the authoritative parenting style to be associated with a higher BMI in children (Chen & Kennedy, 2004; Humenikova & Gates, 2008). Chen and Kennedy conclude that, parents who provide healthy food choices in their home while allowing their child to choose how much and which foods are consumed can help improve family functioning and maintain consistent parenting practices which can help to improve the overall health of a child or adolescent including maintaining a healthy weight.

### *Theoretical Framework*

SCT (Bandura, 1986), as adapted for this study, was used as the theoretical framework. The purpose of using the adapted version of the SCT was to develop an understanding of how parenting styles and parental feeding behaviors may influence or contribute to the risk of a child or adolescent becoming overweight or obese. Much of the behavior and attitudes towards eating are formed during the first decade of life. Parents are a significant influencing factor in the development of a child's behavior as the child models his or her behavior after those who are in their immediate surroundings (Birch & Davison, 2001; Golan & Crow, 2004; Hood, Moore, Sundarajan-Ramamurti, Singer, Cupples & Ellison, 2000). Parents form their own parenting styles and feeding behaviors based on their own morals, values, past lived experiences, observations and the interpretations of those experiences. These factors can have a significant impact on how the child or adolescent forms their own values, experiences, observations and interpretations towards feeding and can perpetuate the risk for overweight or obese tendencies (Birch & Davison; Golan & Crow; Hood, Moore, Sundarajan-Ramamurti, Singer, Cupples & Ellison). The child's food preferences are directly influenced by the foods that are purchased by the parent and made available to the child. Portion sizes that

are accepted and encouraged by parents can exacerbate the risk for obesity, especially if the portion sizes are larger than what is recommended.

Based on the findings of this study, the adapted version of the SCT would imply that the parents with the authoritative parenting style and parental cognitive restraint feeding behavior tend to have children or adolescents who are obese. Authoritative parents, who usually discipline in a 'give and take' manner, may be sending mixed messages to their children and adolescents that are confusing when cognitive restraint is the preferred feeding behavior and the child is denied the ability to negotiate food intake. In addition, authoritarian parents, who usually restrict their own diet through cognitive restraint feeding behaviors, subsequently restrict what their children and adolescents eat just by what food is purchased and brought into the home. This can alter the child's ability to regulate their own food intake leading to obesity (Drohan, 2002; Morton & Campbell, 1999).

### *Implications*

*Nursing practice.* All healthcare providers should be aware that the risk for becoming overweight or obese is crossing all socioeconomic, educational and cultural lines. All parents with children and adolescents exhibiting risk factors for becoming overweight or obese should have early education about the risks associated with obesity

and resources available for them. Nursing educators should focus on practical and uncomplicated approaches towards healthy nutrition that families can quickly implement around stressful work schedules.

Education that is specifically tailored toward a particular parenting style or parental feeding behavior will allow the nurse to develop a family-based plan of care that is individualized to meet the family's needs. Teaching plans that are adapted according to the preferred parental feeding behavior identified can help to address specific behaviors associated with the behavior that may contribute to the risk for overweight or obesity for their child or adolescent. Complicated recipes that require expensive ingredients and lengthy preparation times can overwhelm families and lead to decreased compliance to the plan of care.

Parents with the cognitive restraint feeding behavior should receive information regarding the need to allow the young child to learn hunger and satiety cues so that the child will learn to eat only hungry and not when forced to eat. Education to parents with the authoritarian parenting style regarding unrealistic control of what foods that the family will consume is also important. It would be futile to try to keep a child or adolescent from ever eating a piece of cake or a candy bar again. This type of control over food can lead to obsessive cravings for that food and possibly binge eating as well.

Having a home that is stocked with food and snack choices that are healthy and also convenient can help parents with the disinhibition feeding behavior to offer choices to help their children and adolescents comply with a healthier nutrition plan.

Parents with the authoritative parenting style could benefit from teaching that emphasizes consistency in disciplining so that the children do not receive conflicting messages. Emphasis on regular meal times and providing healthy snacks are essential for parents with the permissive parenting style. Education to all families that focuses on food portion sizes as well as eating foods in moderation that are high in fat or sugars, will hopefully empower families to start living healthier lives. As the family gains confidence through reinforced education and interactions from supportive and encouraging health care staff members, additional information can be integrated into the teachings such as healthier dining out options and appropriate exercise options.

*Nursing research.* There is a need for future research that looks at pediatric obesity among middle-class American families. With the cultural changes that are occurring in the predominant culture within this country, a better understanding of the effects that this may have on pediatric obesity is needed. Research is also needed to look at the acculturation process occurring within minority groups in this country as it relates to nutrition and parenting.

*Nursing administration.* Administrative changes needed at the research site are more staff members to accommodate the increased number of referred patients and decrease the wait for the appointments hopefully prevent noncompliance or ‘no shows’. Monies for advertisement to alert other medical professionals as well as families of the services that the Lipid Clinic provides would hopefully increase community awareness as well as increase referrals to the clinic.

*Social policy.* The growing epidemic of childhood obesity is spiraling out of control and state and local agencies need to become more involved in helping to combat against this problem. The state of Ohio needs to take a very close look at the school breakfast and lunch programs, with special attention given to the types of foods being served that add excessive fats and sugars to a student’s diet. Many parents do not have the time to shop and prepare healthy foods due to limited time to spend because of work schedules and other obligations (Bruno & Tarr, 2004). Schools have the opportunity to reinforce good nutrition by providing education as well as nutritional foods at two of the student’s meals a day (Story, M., Kaphingst, K. & French, S., 2006). Federal and state monies are being spent to develop healthy nutrition programs for children and adolescents such as the “Overweight/obesity” initiative in Healthy People 2010, the National Association of Pediatric Nurse Practitioner’s “Healthy Eating and Activity

Together” initiative and the Institute of Medicine’s “Committee on Prevention of Obesity in Children and Youth” (Burns, Dunn, Brady, Starr & Blosser, 2004; HEAT Initiative, 2006). Some schools have implemented a BMI screening and parents are notified by a health ‘report card’ (Story, Kaphingst & French). The Women, Infant and Children’s (WIC) program in partnership with the Food and Nutrition Service (FNS) has developed the WIC Farmers’ Market Nutrition Program that is available in certain areas of 46 states, where WIC recipients receive healthy nutrition education and food vouchers to purchase fruits and vegetables from local participating farmer’s markets (Women, Infant and Children Farmer’s Market Nutrition Program, 2007). These programs have good intentions, however, there seems to be a difference in what is being taught to the students about healthy food choices and what is being served in the schools. It seems that schools are more concerned with serving foods that the students will like and consume rather than serving foods that are healthy. Children and adolescents have acquired a taste for sweetened and caloric-dense foods that are popular among working families and middle-class America and prefer to eat ‘a la cart’ foods that some schools offer, instead of healthier food choices (Story, Kaphingst & French, 2006). Schools are finding it difficult to purchase healthy foods and use ‘a la cart’ foods that are popular and trendy to

help supplement the school's budget due to budget constraints (Story, Kaphingst & French).

The Dayton City School District's Wellness Policy was introduced in 2006 as part of a requirement of the Child Nutrition and WIC Reauthorization Act of 2004. Each school participating in the National School Lunch Program and/or the School Breakfast Program was required to develop a wellness policy that addressed student wellness and childhood obesity (Dayton City School District's Wellness Policy, 2006). The Wellness Policy included posting nutrition tips on the school website, posting nutrition tips on the school menus that were sent home with the students and a list of foods that meet the district's snack standards for parties and fundraising events (Dayton City School District's Wellness Policy). According to Dayton's City School District's Wellness Policy, the Dayton Wellness Coalition is committed to protecting children's health and supporting healthy eating (Dayton City School District's Wellness Policy, 2006), however, a typical breakfast served in this school district often includes the option of a Super Donut® and an eight ounce carton of 1% chocolate milk. The 2.2 ounce Super Donut® contains 11 grams of fat and 11 grams of sugar. The chocolate milk contains 2.5 grams of fat and 28 grams of sugar. According to the label on the Super Donut®, it conforms to the United States Department of Agriculture (USDA) Child Nutrition

program specifications and meets the requirements for fruit, vegetable and juice even though there is no fruit or vegetable of any form in the product. Serving foods such as the Super Donut® to school-age children and adolescents adds an unnecessary amount of fat and sugar to their daily diet and certainly does not seem to encourage the consumption of fruits or vegetables which are much healthier food choices. This is an opportunity for the schools to educate and serve the students nutritious food and also set an example to the parents and the community about the need for more fruits and vegetables in their daily diet. Parents often look to the schools and medical professionals as sources for healthy and appropriate nutritional messages (Bruss, Morris, Dannison & Orbe, 2005).

An increased amount of Federal and State monies should be allocated to school districts to purchase a larger variety of fresh fruits and vegetables, as many schools have limited funding to purchase additional fresh produce. It is estimated that in 2001, the United States Department of Agriculture (USDA) spent \$350 million on beef and cheese for schools and only \$161 million on fresh fruits and vegetables (Bruno & Tarr, 2004).

An overweight prevention program that specifically tries to increase the intake of fruits and vegetables in children at risk for overweight and obesity has shown effectiveness (Faith, Berkowitz, Stallings, Kerns, Storey & Stunkard, 2004). Research shows that

children develop food likes and dislikes early in life and if exposed to healthier foods instead of high-fat foods and sweetened foods, will develop healthier food intake patterns (Lederman, Akabas, Moore, Bentley, Devaney, Gillman, Kramer, Mennella, Ness & Wardle, 2004). If children and adolescents have access to fruits and vegetables and are able to include them in their diet on a daily basis, they may develop healthier food intake patterns that may set an example for parents and family to follow.

Monies should also be given to the school districts for the purpose of screening students who are overweight or obese so that early referrals to a healthcare professional can be made. Children and adolescents who are identified as being overweight and receive treatment early prior to the start of diabetes, hypertension and other lifelong co-morbidities of obesity have a much better chance for a healthier outcome (Drohan, 2002; National Association of Pediatric Nurse Practitioners, 2006). This information could be given to the parent in the form of a school 'health report card' and a follow-up appointment with the school nurse to answer questions and to receive healthy nutrition education.

Funding to support the Healthy Eating & Activity Together (HEAT) Initiative through the National Association of Pediatric Nurse Practitioner's is needed to equip pediatric nurse practitioners in primary care settings as well as in the community with the

education and materials needed to screen children and adolescents at risk for obesity and to make the appropriate medical interventions or referrals (National Association of Pediatric Nurse Practitioners, 2006). The HEAT Initiative was developed as a guideline to provide leadership and direction in an effort to prevent childhood obesity and to also change public policies (National Association of Pediatric Nurse Practitioners).

### *Limitations*

The limitations of this study were that this study was performed at one site and only the parents present at the Lipid Clinic at Dayton Children's: The Children's Medical Center of Dayton had the opportunity to participate in the research study. Due to the small sample size (30) and the use of only one location to recruit participants, the results of this study could not be generalized to all overweight and obese children and adolescents. The research study was limited to those families who could speak English and also had the ability to read and understand the consent and questionnaires based on their high reading levels. The convenience method of recruitment was used to recruit participants for this study and although the Parental Authority Questionnaire (PAQ) has been used as a self assessment by parents in past research studies, its original intent was to be used by the adolescents to assess their parent. The PAQ did not work well in this study. Another tool that measures parenting styles, either in the form of a questionnaire

or in an interview format would be a suggested alternative for future research studies.

Because the questionnaires required a self reported response, the social desirability response bias was a possible limitation as well as some parents were already feeling guilt and frustration regarding their child's increased BMI.

### *Recommendations*

Future research looking at parenting styles should include a self-assessment research tool that has a strong reliability and validity that would measure for the three parenting styles. Also, an interview including both parents and their children would be in order to do a comparison of responses as well as examining the perceptions of the parent versus the child. Research that also includes parents of school-age children and adolescents that have not been identified as overweight, as well as overweight or obese children and adolescents from additional sites could be used to compare results to this study. Having a control group would help to identify if there truly if parenting styles and parental feeding behaviors differ between children of normal weight and those identified as obese.

Several variables contribute to obesity and further research is needed to look at the controversy surrounding parenting styles and parental feeding behaviors that place a child at increased risk for obesity. Further studies need to be conducted on various

environmental influences that contribute to obesity, such as advertisements on television, newspapers and in magazines that promote fast-foods and high calorie snacks. Because children and adolescents are spending more time watching television and making more independent food choices, this is an area that demands a closer look (Hampl, Wharton, Taylor, Winham, Block & Hall, 2004; Rollins, 2004; Pinzon-Perez & Soto, 2006).

Further research is needed to look at the controversy surrounding which parenting style and parental feeding behavior places a child at more risk. This research should also include an emphasis on culture, ethnicity and the acculturation process that is occurring among many of the ethnic and minority groups in America.

### *Conclusion*

Parenting styles and parental feeding behaviors can significantly contribute to the risk of their child or adolescent becoming overweight or obese. However, much controversy is found in the literature regarding which parenting style and feeding behavior places the child at increased risk for obesity. Some studies implicate the inhibition or cognitive restraint feeding behavior as placing the child at increased risk for obesity (Enten & Golan, 2008; Birch & Davison, 2001; Hodges, 2003). Other studies implicate the disinhibition feeding behavior as placing the child at increased risk for obesity (Shunk & Birch, 2004; Fisher & Birch, 2002; Bruno & Tarr, 2004). Many

research studies implicate the authoritarian parenting style as placing the child at increased risk for obesity stating that this parenting style does not allow the child to learn their own hunger satiety cues (Hodges, 2003; Morton & Campbell, 1999; Birch & Davison, 2001). However, some studies involving minority and specific ethnic groups implicate the authoritative parenting style as placing the child at increased risk for obesity (Bruss, Morris, Dannison, Orbe, Quintugua & Palacios, 2005; Roberts, Blinkhorn & Duxbury, 2003; Humenikova & Gates, 2007; Chen & Kennedy, 2004).

This study suggests that parents who have cognitive restraint feeding behaviors and are very controlling over their own food intake can subsequently control what their child or adolescent eats just by what foods are purchased and served within the home. The authoritative parenting style can send confusing messages to their children about what behaviors are considered acceptable. Consistency in the approach that the parents take, whether it is involving discipline or feeding behaviors, is important to establish a healthy environment for the children. The risk for a child or adolescent becoming overweight or obese is no longer limited to low-income, low educated, minority families. The risk for becoming overweight or obese is crossing all cultural, educational and socioeconomic backgrounds. It is important for the nurse to identify the parenting style and parental feeding behavior of the parent who is the primary caretaker of the child or

adolescent. This will allow the nurse to develop a family-based plan of care that is individualized to meet the family's needs and promote long-term compliance.

APPENDIX A

THREE FACTOR EATING QUESTIONNAIRE

## Three Factor Eating Questionnaire

### Part 1

- |     |  |          |          |
|-----|--|----------|----------|
| 1.  | When I smell a sizzling steak or see a juicy piece of meat, I find it very difficult to keep from eating, even if I have just finished a meal.             | <b>T</b> | <b>F</b> |
| 2.  | I usually eat too much at social occasions, like parties and picnics.  | <b>T</b> | <b>F</b> |
| 3.  | I am usually so hungry that I eat more than three times a day.   | <b>T</b> | <b>F</b> |
| 4.  | When I have eaten my quota of calories, I am usually good about not eating anymore.  | <b>T</b> | <b>F</b> |
| 5.  | Dieting is so hard for me because I just get too hungry.   | <b>T</b> | <b>F</b> |
| 6.  | I deliberately take small helpings as a means of controlling my weight.  | <b>T</b> | <b>F</b> |
| 7.  | Sometimes things just taste so good that I keep on eating even when I am no longer hungry.   | <b>T</b> | <b>F</b> |
| 8.  | Since I am often hungry, I sometimes wish that while I am eating, an expert would tell me that I have had enough or that I can have something more to eat. | <b>T</b> | <b>F</b> |
| 9.  | When I feel anxious, I find myself eating.   | <b>T</b> | <b>F</b> |
| 10. | Life is too short to worry about dieting.  | <b>T</b> | <b>F</b> |
| 11. | Since my weight goes up and down, I have gone on reducing diets more than once.  | <b>T</b> | <b>F</b> |
| 12. | I often feel so hungry that I just have to eat something.  | <b>T</b> | <b>F</b> |
| 13. | When I am with someone who is overeating, I usually overeat too.   | <b>T</b> | <b>F</b> |
| 14. | I have a pretty good idea of the number of calories in common food.  | <b>T</b> | <b>F</b> |
| 15. | Sometimes when I start eating, I just can't seem to stop.  | <b>T</b> | <b>F</b> |
| 16. | It is not difficult for me to leave something on my plate.   | <b>T</b> | <b>F</b> |
| 17. | At certain times during the day, I get hungry because I have gotten used to eating then.   | <b>T</b> | <b>F</b> |
| 18. | While on a diet, if I eat food that is not allowed, I consciously eat less for a period of time to make up for it.   | <b>T</b> | <b>F</b> |
| 19. | Being with someone who is eating often makes me hungry enough to eat also.   | <b>T</b> | <b>F</b> |
| 20. | When I feel blue, I often overeat.   | <b>T</b> | <b>F</b> |
| 21. | I enjoy eating too much to spoil it by counting calories or watching my weight.  | <b>T</b> | <b>F</b> |
| 22. | When I see a real delicacy, I often get so hungry that I have to eat it right away.  | <b>T</b> | <b>F</b> |

- |     |  |          |          |
|-----|--|----------|----------|
| 23. | I often stop eating when I am not really full as a conscious means of limiting the amount that I eat.        | <b>T</b> | <b>F</b> |
| 24. | I get so hungry that my stomach seems like a bottomless pit.   | <b>T</b> | <b>F</b> |
| 25. | My weight has hardly changed at all in the past ten years.   | <b>T</b> | <b>F</b> |
| 26. | I am always hungry so it is hard for me to stop eating before I finish the food on my plate.                 | <b>T</b> | <b>F</b> |
| 27. | When I feel lonely, I console myself by eating.  | <b>T</b> | <b>F</b> |
| 28. | I consciously hold back at meals in order not to gain weight.  | <b>T</b> | <b>F</b> |
| 29. | I sometimes get very hungry in the evening or night.   | <b>T</b> | <b>F</b> |
| 30. | I eat anything I want, anytime I want.   | <b>T</b> | <b>F</b> |
| 31. | Without even thinking about it, I take a long time to eat.   | <b>T</b> | <b>F</b> |
| 32. | I count calories as a conscious means of controlling my weight.  | <b>T</b> | <b>F</b> |
| 33. | I do not eat some foods because they make me fat.  | <b>T</b> | <b>F</b> |
| 34. | I am always hungry enough to eat anytime.  | <b>T</b> | <b>F</b> |
| 35. | I pay a great deal of attention to changes in my figure.   | <b>T</b> | <b>F</b> |
| 36. | While on a diet, if I eat a food that is not allowed, I often then splurge and eat other high calorie foods. | <b>T</b> | <b>F</b> |

## Part II

Directions: Please answer the following questions by circling the number above the response that is appropriate to you.

37. How often are you dieting in an conscious effort to control your weight?
- |          |           |          |          |
|----------|-----------|----------|----------|
| <b>1</b> | <b>2</b>  | <b>3</b> | <b>4</b> |
| rarely   | sometimes | usually  | always   |
38. Would a weight fluctuation of 5 pounds affect the way you live?
- |            |          |            |           |
|------------|----------|------------|-----------|
| <b>1</b>   | <b>2</b> | <b>3</b>   | <b>4</b>  |
| not at all | slightly | moderately | very much |
39. How often do you feel hungry?
- |                    |                         |                     |               |
|--------------------|-------------------------|---------------------|---------------|
| <b>1</b>           | <b>2</b>                | <b>3</b>            | <b>4</b>      |
| only at meal times | sometimes between meals | often between meals | almost always |
40. Do your feelings of guilt about overeating help you to control your food intake?
- |          |          |          |          |
|----------|----------|----------|----------|
| <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| never    | rarely   | often    | always   |
41. How difficult would it be for you to stop eating halfway through dinner and not eat for the next four hours?

- |     | <b>1</b>  | <b>2</b>                      | <b>3</b>                            | <b>4</b>                        |
|-----|---|-------------------------------|-------------------------------------|---------------------------------|
|     | easy  | slightly<br>difficult         | moderately<br>difficult             | very<br>difficult               |
| 42. | How conscious are you of what you are eating?   |                               |                                     |                                 |
|     | <b>1</b><br>not at all  | <b>2</b><br>slightly          | <b>3</b><br>moderately              | <b>4</b><br>extremely           |
| 43. | How frequently do you avoid 'stocking up' on tempting foods?  |                               |                                     |                                 |
|     | <b>1</b><br>almost never  | <b>2</b><br>seldom            | <b>3</b><br>usually                 | <b>4</b><br>almost always       |
| 44. | How likely are you to shop for low calorie foods?   |                               |                                     |                                 |
|     | <b>1</b><br>unlikely  | <b>2</b><br>slightly unlikely | <b>3</b><br>moderately likely       | <b>4</b><br>very likely         |
| 45. | Do you eat sensibly in front of others and splurge when you are alone?  |                               |                                     |                                 |
|     | <b>1</b><br>never   | <b>2</b><br>rarely            | <b>3</b><br>often                   | <b>4</b><br>always              |
| 46. | How likely are you to consciously eat slowly in order to cut down on how much you eat?  |                               |                                     |                                 |
|     | <b>1</b><br>unlikely  | <b>2</b><br>slightly likely   | <b>3</b><br>moderately likely       | <b>4</b><br>very likely         |
| 47. | How frequently do you skip dessert because you are no longer hungry?  |                               |                                     |                                 |
|     | <b>1</b><br>almost never  | <b>2</b><br>seldom            | <b>3</b><br>at least once<br>a week | <b>4</b><br>almost every<br>day |
| 48. | How likely are you to consciously eat less than you want?   |                               |                                     |                                 |
|     | <b>1</b><br>unlikely  | <b>2</b><br>slightly likely   | <b>3</b><br>moderately likely       | <b>4</b><br>very likely         |
| 49. | Do you go on eating binges though you are not hungry?   |                               |                                     |                                 |
|     | <b>1</b><br>never   | <b>2</b><br>rarely            | <b>3</b><br>sometimes               | <b>4</b><br>once a week         |
| 50. | On a scale 0 to 5, where 0 means no restraint in eating (eating whatever you want, whenever you want it) and 5 means total restraint (constantly limiting food intake and 'never giving'), what number would you give yourself? |                               |                                     |                                 |
|     | <b>0</b>  |                               |                                     |                                 |
|     | eat whatever you want, whenever you want it   |                               |                                     |                                 |

**1**

usually eat whatever you want, whenever you want it

**2**

often eat whatever you want, whenever you want it

**3**

often limit food intake, but often 'give in'

**4**

usually limit food intake, rarely 'give in'

**5**

constantly limiting food intake, never 'giving in'

51. To what extent does this statement describe your eating behavior? I start dieting in the morning, but because of any number of things that happen during the day, by evening I have given up and eat what I want, promising myself to start dieting again tomorrow.

**1**

not like me

**2**

a little like me

**3**

pretty good  
description of me

**4**

describes me  
perfectly

APPENDIX B

PARENTAL AUTHORITY QUESTIONNAIRE

### **Parental Authority Questionnaire (PAQ)**

Instructions: For each of the following statements, circle the number on the 5-point scale (1= strongly disagree, 5 = strongly agree) that best describes how that statement applies to you and your child. Try to read and think about each statement as it applies to your child as they are growing up in your home. There are no right or wrong answers, so don't spend a lot of time on any one item. We are looking for your overall impression regarding each statement.

1. I feel that in a well-run home the children should have their way in the family as often as the parents do.\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

2. I feel that it is for my child's own good if he/she is forced to conform to what I think is right.\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

3. When I tell my child to do something, I expect my child to do it immediately without asking questions. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

4. Once a family policy has been established, I discuss the reasoning behind the policy with the children in the family. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

5. I always encourage verbal give-and-take whenever my child feels that family rules and restrictions are unreasonable. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

6. I feel that children need to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

7. I do not allow my children to question any decision I have made. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

8. I direct the activities and decisions of the children in the family through reasoning and discipline. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

9. I feel that force should be used by parents in order to get their children to behave the way they are supposed to. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

10. I do not feel that my children need to obey rules and regulations of behavior simply because someone in authority had established them. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

11. My children know what I expect of them in my family, but they also feel free to discuss those expectations with me when they feel that they are unreasonable. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

12. I feel that wise parents should teach their children early just who is boss in the family. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

13. I seldom give my children expectations and guidelines for their behavior. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

14. Most of the time I do what the children in the family want when making family decisions. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

15. I consistently give my children direction and guidance in rational and objective ways. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

16. I get very upset if my children try to disagree with me. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

17. I feel that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as there are growing up. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

18. I let my children know what behavior I expect of them, and if they don't meet those expectations, I punish them. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

19. I allow my children to decide most things for themselves without a lot of direction from me. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

20. I take the children's opinions into consideration when making family decisions, but I will not decide for something simply because the children want it. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

21. I do feel responsible for directing and guiding my children's behavior while they are growing up. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

22. I have clear standards of behavior for the children in our home, but I am willing to adjust those standards to the needs of the individual children in the family. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

23. I give my children direction for their behavior and activities and I expect them to follow my direction, but I am willing to listen to their concerns and to discuss that direction with them. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

24. I allow my children to form their own point of view on family matters and I generally allow them to decide for themselves what they are going to do. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

25. I have always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do what they are supposed to as they are growing up. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

26. I often tell my children exactly what I want them to do and how I expect them to do it. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

27. I give my children clear direction for their behaviors and activities, but I also understand when they disagree with me. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

28. I do not direct the behaviors, activities, and desires of the children in the family. \*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

29. The children know what I expect of them in the family and I insist that they conform to those expectations simply out of respect for my authority. \*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

30. If I make a decision in the family that hurts my children, I am willing to discuss that decision with them and to admit it if I have made a mistake. \*\*\*

1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

**Stephanie Smith**

---

**From:** "Stephanie Smith" <steph@gtownonline.com>  
**To:** <JRBURI@stthomas.edu>  
**Sent:** Thursday, February 09, 2006 1:15 PM  
**Subject:** Parental Authority Questionnaire

Dr. Buri,

My name is Stephanie Smith and I am a graduate nursing student at Wright State university in Dayton, Ohio. I am in the process of writing my research proposal for my thesis and I am interested in using the Parental Authority Questionnaire as a tool in my research. I would like to know if I may use your questionnaire. I look forward to hearing from you. Stephanie Smith (steph@gtownonline.com)

2/28/2006

**Stephanie Smith**

---

**From:** "Buri, John R." <JRBURI@stthomas.edu>  
**To:** "Stephanie Smith" <steph@gtownonline.com>  
**Sent:** Friday, February 10, 2006 11:19 AM  
**Subject:** RE: Parental Authority Questionnaire

Dear Stephanie:

Thank you for your interest in the Parental Authority Questionnaire (PAQ). Please feel free to use the PAQ for any not-for-profit purposes. Details concerning the scoring of the PAQ (along with some norming information) can be found in the following articles:

Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality Assessment*, 57, 110-119.

Buri, J. R. (1989). Self-esteem and appraisals of parental behavior. *Journal of Adolescent Research*, 4, 33-49.

Buri, J. R., Louiselle, P. A., Misukanis, T. M., Mueller, R. A. (1988). Effects of parental authoritarianism and authoritativeness on self-esteem. *Personality and Social Psychology Bulletin*, 14, 271-282.

Hopefully you will find this information helpful. Good luck with your research project.

Sincerely,

Dr. John R. Buri

John R. Buri, Ph.D.  
Professor  
Department of Psychology  
UNIVERSITY OF ST. THOMAS

Buri, John R." <JRBURI@stthomas.edu>  
To: Stephanie Smith  
Date: Tuesday - September 12, 2006 1:39 PM  
Subject: RE: Information regarding the Parental Authority Questionnaire

**Stephanie:**

**This has actually already been done. This was part of the study cited in the *Journal of Adolescent Research* article (vol. 4, pp. 33-49).  
So this is an appropriate way in which to modify the PAQ. I wish you continued good luck with the completion of your research project.**

Sincerely,

*Dr. Buri*

*John R. Buri, Ph.D.  
Professor  
Department of Psychology  
University of St. Thomas*

-----Original Message-----

**From:** Stephanie Smith [mailto:SmithSJ@childrensdayton.org]  
**Sent:** Tuesday, September 12, 2006 12:28 PM  
**To:** Buri, John R.  
**Subject:** RE: Information regarding the Parental Authority Questionnaire

Dr. Buri,

Thank you for your input regarding the questions I had asked regarding possible substitutions in the PAQ. I have talked with my thesis chair and with your permission, we are interested in changing the word "mother" or "father" to the words "I" or "myself", so that the PAQ can be used for the parent to do a self-evaluation. Please let me know if this would be permissible by you. Again, I appreciate your time and input. Stephanie Smith RN, BSN

Stephanie J. Smith RN, BSN  
OPDS/PACU Shift Coordinator  
Dayton Children's: The Children's Medical Center of Dayton  
641-4965

>>> "Buri, John R." <JRBURI@stthomas.edu> 09/08/2006 09:56 >>>

APPENDIX C  
AGENCY PERMISSION

**AGENCY PERMISSION FOR CONDUCTING STUDY**

THE Lipid Clinic at Children's Medical Center  
GRANTS TO Stephanie J. Smith RN, BSN

a student enrolled in a program of nursing leading to a Master's degree at Wright State University, the privilege of using its facilities in order to study the following problem:

To Conduct a Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI Percentiles in School-aged Children and Adolescents.

The conditions mutually agreed upon are as follows:

1. The agency (may) ~~(may not)~~ be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) ~~(may not)~~ be identified in the final report.
3. The agency (wants) ~~(does not want)~~ a conference with the student when the report is completed.
4. Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: 9/19/04  
Stephanie J. Smith RN, BSN  
Signature of Student

James R. White MD  
Signature of Agency Personnel/Title  
Bobbie Ann King PhD, RN  
Signature of Faculty Director

Revised 11/14/94 (Grad Cur Comm)

Back

APPENDIX D

CHILDREN'S MEDICAL CENTER IRB APPROVAL

The Children's Medical Center of Dayton IRB  
One Children's Plaza  
Dayton, Ohio 45404-1815

January 29, 2007

Stephanie Smith, RN, BSN  
The Children's Med Ctr of Dayton  
One Children's Plaza  
Dayton, Ohio 4404-1815

RE: Revision/Amendment Request dated: 1/24/2007  
Dayton Children's study number 2006038: A Descriptive Study of Parenting Styles,  
Parental Feeding Behaviors and BMI Percentile in School-age Children and Adolescents  
(Sigma Theta Tau Internations, Zeta Phi Chapter)

Dear Ms. Smith:

I have reviewed your research study for revision(s) of the study listed above. The requested revision(s) involves changes to the consent form. The consent form as submitted (1/18/2007) has been approved. The protocol has not changed since last submitted for approval. Your request is eligible for expedited review under FDA and DHHS (OHRP) regulations.

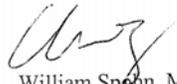
This is to confirm that I have approved your request for revision(s). You are granted permission to conduct your study as revised effective immediately. The date for continuing review remains unchanged at 1/9/2008, unless closed before that date.

If you plan to continue the study one year from now, please submit 60 days prior to termination. When the annual continuing review expires, the new consent form must be HIPAA compliant or state that a separate authorization will be used.

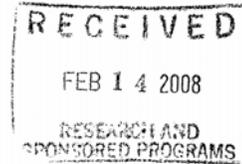
The FDA requires you to notify the IRB of any new advertisements/recruiting material, change of investigator or site location, SAEs, significant protocol deviations, patient death, or termination of the study.

Please note that any further changes to the study must be promptly reported and approved. Contact Rosemary Golden (937-641-4218; fax 937-641-3201; email: goldenr@childrensdayton.org) if you have any questions or require further information.

Sincerely,



William Spohn, M.D.  
Chairman, Institutional Review Board



APPENDIX E

WRIGHT STATE UNIVERSITY IRB APPROVAL

February 18, 2008

Assigned to: B. Laurel Elder, Ph.D.

**REQUEST FOR REVIEW UNDER  
IRB AUTHORIZATION AGREEMENT**

WRIGHT STATE UNIVERSITY  
INSTITUTIONAL REVIEW BOARD  
Assurance Number: FWA00002427

IAA Number 354- New & A1 (3/17/08) Protocol ID CMC# 2006038

Title A Descriptive Study of Parenting Styles, Parenting Feeding Behaviors and BMI in School-Age Children and Adolescents.

Principal Investigator Stephanie Smith RN

The attached protocol (and consent form, if applicable), or amendment/renewal thereof, has been approved by an IRB with which Wright State has a cooperative agreement allowing that IRB to approve the protocol without requiring WSU approval in addition. However, the agreement does allow the WSU IRB to disapprove protocols/amendments/renewals so approved.

You are requested to review the attached documents and indicate a response in one of the three check-boxes below. Then return this sheet and the protocol to the IRB Coordinator, Robyn Wilks, either at the next IRB meeting or in 201J University Hall.

**Concur** with cooperating institution's IRB approval. *B Laurel Elder Ph.D.*  
*2-25-08*

**Disapprove** because \_\_\_\_\_  
\_\_\_\_\_

Unable to perform this review, please re-assign.

**Routing instructions:**

*If concurrence:* After the IRB meeting, send a copy of this form to the cooperating institution IRB and file this form and the protocol/consent form/other institution IRB approval in the IAA file. Enter information in the IAA database.

*If disapproval:* Send a copy of this form along with a transmittal memo to the WSU IRB Chair as soon as possible. The Chair will forward the notice to the IRB Chair of the cooperating institution. The notice will request acknowledgment of receipt of the notice to be sent to the WSU IRB Coordinator (Robyn Wilks). File acknowledgment in the IAA file. Enter information in the IAA database.

*If unable to review:* Consult with IRB Coordinator to find an alternate reviewer.

APPENDIX F  
DEMOGRAPHIC QUESTIONNAIRE

### Demographic Questions

Subject # \_\_\_\_\_ Date completed \_\_\_\_\_

**1. Parent's age?**

\_\_\_\_\_

**2. Parent's gender?**

- 1.  male
- 2.  female

**3. Parent's Marital Status?**

- 1.  single/never married
- 2.  married
- 3.  separated
- 4.  divorced

**4. Parent's highest level of education?**

- 1.  Middle school/Junior. High
- 2.  High School
- 3.  Technical/ Vocational School
- 4.  College or beyond

**5. Shift that parent works?**

- 1.  first shift
- 2.  second shift
- 3.  third shift
- 4.  varying shifts
- 5.  works at home
- 6.  unemployed

**6. Primary caretaker and disciplinarian of the child?**

- 1.  self
- 2.  spouse
- 3.  grandparent
- 4.  babysitter
- 5.  other adult

**7. Number of children?**

\_\_\_\_\_

**8. What birth order is the child?**

- 1.  Oldest child
- 2.  Second oldest born
- 3.  Youngest child
- 4.  \_\_\_\_\_ child

**9. Race of child?**

- 1.  African American
- 2.  American Indian
- 3.  Asian
- 4.  Caucasian
- 5.  Hispanic
- 6.  other \_\_\_\_\_

**10. Child's Age?**

\_\_\_\_\_

**11. Child's gender?**

- 1.  male
- 2.  female

**12. Number of meals cooked in the home each day?**

\_\_\_\_\_

**13. How many snacks are eaten between meals each day?**

\_\_\_\_\_

**14. How many family meals cooked restaurants/carry out each week?**

\_\_\_\_\_

**15. Annual Family Income?**

- 1.  0 to \$20,000
- 2.  \$21,000 to \$35,000
- 3.  \$36,000 to \$50,000
- 4.  \$51,000 to \$75,000
- 5.  \$76,000 to \$90,000
- 6.  \$91,000 and over

Do not write below this line

**16. Child's Body Mass Index Percentile?**

\_\_\_\_\_

APPENDIX G  
COVER LETTER AND CONSENT

August 16, 2006

Dear Parent or Legal Guardian,

My name is Stephanie Smith, RN, BSN. I am a graduate nursing student at Wright State University College of Health and Nursing and a staff nurse at The Children's Medical Center of Dayton. As part of the requirements for completion of my master's degree, I am conducting a descriptive study of parenting styles, parental feeding behaviors and body mass index in school-age children and adolescents.

The questionnaires are multiple-choice and true false and will take approximately 20 minutes to complete. Results from this research may help to further develop health care plans that are adapted to the individual family in order to make healthy life-style changes. Participation in this research is voluntary and confidentiality will be maintained by the placement of the completed questionnaires in a sealed packet. The packet of questionnaires will be assigned an arbitrary number to be used for the purpose of keeping track of the number of participants needed for the research. No identifying information will be written on the questionnaires. Each packet of questionnaires will be sealed upon completion by the parent/legal guardian and then placed into a locked cabinet by the primary investigator. The locked cabinet within the Lipid Clinic and will be accessible only by the primary investigator. Only my faculty advisors, statistician and I will have access to the raw data.

Completion and return of the questionnaires implies your consent to participate. Once the questionnaires have been completed, there is no further obligation on your part. While you are filling out the questionnaires, you decide that you do not want to participate; you may do so immediately without prejudice.

There are no direct benefits to participation, but the research results will be used to improve the existing treatment plans in the Lipid Clinic. The risks are minimal due to the confidentiality and security measures taken to protect the participants. As a research participant your decision to whether to participate or not will not result in any loss of quality medical care or benefits for you and your child.

If you have any questions regarding the survey questions, packet or results please feel free to contact Stephanie Smith, RN, BSN, at (937) 641-4965, or faculty advisor at Wright State University, Bobbe Gray, Ph.D., RN at (937) 775-2646. Research results of this study will be available upon the completion of the study (September 2007) and may be requested by contacting the graduate student or physician at the Lipid Clinic at (937) 641-3000.

Thank you,

Stephanie Smith, RN, BSN

Primary Investigator  
Wright State University

The Children's Medical Center  
One Children's Plaza  
Dayton, Ohio 45404

**A DESCRIPTIVE STUDY OF PARENTING STYLES, PARENTAL FEEDING BEHAVIORS AND BMI IN SCHOOL-AGE CHILDREN AND ADOLESCENTS.**

**STUDY TITLE:**

You are being invited to participate in a clinical research study. Clinical research is the study of human diseases in an attempt to improve future diagnosis and treatment. In order to decide whether or not you/your child should agree to be a part of this research study, you/your child will learn enough about its risks and benefits to make a judgment. This process is called ***informed consent***. Before agreeing that you/your child will participate in this research study, it is important that you read and understand the following explanation. This consent document will describe the purpose, procedures, benefits, risks and discomforts of the study and the precautions that will be taken. It also describes the alternatives available and the right to withdraw from the study at any time. It is important to understand that no guarantee or assurance can be made as to the results of the study. Refusal to participate will not influence the availability of standard medical treatment.

You \_\_\_\_\_ are being invited to participate in this research study. This clinical research study is being conducted under the Division of Nursing.

**WHAT IS THIS STUDY ABOUT?**

It has been explained to you that you will receive questionnaires.

You understand that the questionnaires involve a research study. To be eligible to participate in a research study all patients must have the same medical condition(s) that are described in the study protocol. For patients' well being, as well as to make sure that the results of this study may be useful for making treatment decisions for future patients with similar diseases, it is important that no exceptions be made to meet the criteria that allow a person to be eligible to participate in this study.

**WHY IS THIS STUDY BEING DONE?**

The purpose of this study is to conduct a descriptive study of parenting styles, parenting feeding behaviors and BMI in school-age children and adolescents.

**HOW MANY PEOPLE WILL TAKE PART IN THE STUDY?**

Approximately 30 parents and children are expected to take part in this study. It is anticipated that up to 30 subjects will be entered locally over the next five months.

Written: August 16, 2006

## **HOW LONG WILL YOU BE ON THIS STUDY?**

The questionnaires for this research study will take approximately 20 minutes to complete. After the questionnaires have been completed, no further participation in the research is needed.

## **WHY YOU MIGHT BE WITHDRAWN FROM THE STUDY WITHOUT YOUR CONSENT?**

You will be withdrawn without your consent if your child has been diagnosed with any of the following conditions:

- The diagnosis of Prader-Willi Syndrome.
- The diagnosis of Downs Syndrome.
- The diagnosis of Autism, Asberger Syndrome, and Bipolar Disorder.
- The diagnosis of hypothyroidism
- Other medical conditions or children taking certain prescription medications as determined by the clinic physician.
- You can be withdrawn if new information about the study becomes available or if the study is cancelled by Wright State University School of Graduate Studies, or The Children's Medical Center of Dayton's Institutional Review Board.

## **WHAT WILL HAPPEN TO YOU/YOUR CHILD IN THIS STUDY?**

### **Standard Medical Tests throughout Treatment**

Your child will receive a routine physical exam including height, weight and blood pressure measurements prior to you filling out the questionnaires as part of their normal appointment procedure. This information is needed to identify your child's body mass index, which is his/her height to weight ratio. If there are other tests not mentioned above that your child's physician may need to order during the course of your child's treatment, he/she or a designee will explain these tests to you/your child. See the section below entitled **Confidentiality**.

### **Research Plan**

Your child or adolescent will undergo a routine physical examination, including height and weight measurements. This information, along with the date of birth, will be used to calculate his/her exact body mass index.

You will be asked to complete a general demographic questionnaire, parenting questionnaires and your child or adolescent will undergo a routine physical examination, including height and weight measurements.

Written: August 16, 2006

## **<WHAT ARE THE RISKS OF THE STUDY?**

There are no known side effects to completing the questionnaires or completing the physical examination.

### **HOW CAN THIS TREATMENT AFFECT PREGNANCY and FATHERHOOD?**

There are no risks involved that could affect pregnancy or fatherhood when completing the questionnaires or during your child's physical examination.

### **ARE THERE BENEFITS TO TAKING PART IN THE STUDY?**

The knowledge gained from this study may help to improve the treatment of other individuals. It is not possible to predict whether or not any personal benefit will result from this research study.

### **HOW WILL YOU/YOUR CHILD KNOW IF THERE ARE NEW DISCOVERIES ABOUT THIS RESEARCH?**

You/your child will be told of any new information learned by your child's doctors about this study that might cause you to change your mind about participating in this study or allowing your child to participate in this study. If at any time during the study, another questionnaire appears to be better than this questionnaire, all participants will be offered the option of completing the better questionnaire.

### **WHAT OTHER OPTIONS ARE THERE?**

If you decide not to participate/not to allow your child to participate in this study, your child's doctor will discuss other available, standard treatments with you/your child.

### **CONFIDENTIALITY OF HEALTH INFORMATION:**

**A separate HIPAA authorization will be used if the Informed Individual Consent Form (ICF) itself doesn't contain HIPAA compliant language.**

Strict confidentiality will be maintained throughout this research to protect your/your child's privacy. All study information will be stored in locked research files and identified by a code number. Scientific reports and publications resulting from this study will not identify individuals by name. Unfortunately, there is no guarantee of absolute confidentiality.

Protected health information (PHI) is any information by which you/your child can be identified. PHI is protected by federal privacy law (HIPAA). By signing this consent form, you/your child agrees to share your/your child's PHI with Stephanie Smith RN, BSN, James Ebert, MD and Bobbe Gray, PhD, RNC. The following health information will be collected as part of this study:

Written: August 16, 2006

The following identifiable data will be collected for the purpose conducting a descriptive study of parenting styles, parent feeding behaviors and BMI in school-age children and adolescents.

- date of birth

The height, weight and date of birth information is needed to calculate your child's BMI at the time of the first visit.

If The Children's Medical Center of Dayton and Wright State University makes additional disclosures of your health information, the federal privacy laws may not apply and your PHI may not be protected. You do not have to agree to use or disclose your health information. However, if you do not give permission, you may not participate in this study. If you sign this consent form and later decide to cancel or revoke the authorization, you must do so in writing to prevent further disclosure of your health information. If you cancel this authorization, you will be withdrawn from the study.

After the study is completed, you/your child may request access to all of your/your child's gathered health information.

The investigators/sponsor will retain your/your child's research records until your child reaches age 22 years. Your/your child's health information cannot be used for additional research without another approval from you/your child or The Children's Medical Center of Dayton's Institutional Review Board (IRB).

You understand/your child understands that your/your child's record may need to be reviewed and/or copied by The Children's Medical Center of Dayton's staff or designees in order to accomplish several hospital functions such as peer reviews required by JCAHO (Joint Commission for the Accreditation of Health Care Organizations), the organization that inspects and accredits hospitals, billing, and/or auditing for Medicare and Medicaid and insurance companies.

Information about you/your child may be disclosed to certain organizations if required by local, state or federal laws.

**Organizations that may inspect and/or copy your/your child's research medical records without your permission for quality assurance (to make sure the research is being done the way it should be) and data analysis include:  
The research advisors and statistician at Wright State University  
The Children's Medical Center of Dayton IRB**

### **WHAT ARE THE COSTS?**

There are no costs associated with this research.

**If standard treatment costs associated with the study are to be billed to insurance, other payers, the types of health information provided to them must be disclosed.**  
Written: August 16, 2006

### **WHAT ARE YOUR/YOUR CHILD'S RIGHTS AS A PARTICIPANT?**

Participation in this study is voluntary. You/your child may choose not to take part in this study. If you decide/your child decides to take part in this study, you understand/your child understands that you are/your child is free to withdraw consent for participation at any time. If you/your child choose not to participate or decide to withdraw from the

study, it will not influence you/our child's access to appropriate treatment nor jeopardize your future relationship with the study physician(s) or institution.

You may also withdraw or cancel your permission for this study to use personal health information by writing a letter to Stephanie Smith at Children's Medical Center and inform her of your decision. However, this may result in you/your child being terminated from the study but will not affect your/your child's ability to receive standard treatment.

You also understand/your child also understands that a second opinion from another physician is always an option.

### **WHOM DO YOU CALL IF YOU HAVE QUESTIONS OR PROBLEMS?**

If you/your child should have any questions regarding this treatment or should develop any problems, you have/your child has twenty-four hour access to the study physician or his/her designee at 641-3000. For questions about your/your child's rights as a research participant, you can also contact The Children's Medical Center of Dayton's IRB (937-641-4218). This is a group of people who review research to protect the rights of children enrolled as subjects.

### **<DOES PARTICIPATION IN THIS STUDY REQUIRE YOUR/YOUR CHILD'S BLOOD OR TISSUE TO BE USED FOR RESEARCH PURPOSES?**

There are no blood or tissue samples required for this study.

### **CONSENT STATEMENT**

You understand/your child understands that you have/your child has the right to have all questions about the study answered in sufficient detail for you/your child to clearly understand the answer.

If you have/your child has any questions about the research or your/your child's rights to report any study-related injuries, you/your child may contact the physician listed at the end of this consent.

You have/your child has been fully informed as to the procedures to be followed and have been given a description of the possible discomforts, risks, and possible benefits to be expected and the appropriate alternative procedures. By signing this consent form, you understand/your child understands that you are/your child is free to withdraw

Written: August 16, 2006

consent and have this form of treatment discontinued at any time without prejudice of any kind.

**My signature below indicates that:**

**I have read this form. Yes \_\_\_\_\_ No \_\_\_\_\_ or**

**The form was read to me. Yes \_\_\_\_\_ No \_\_\_\_\_**

**I have discussed this research with the graduate nursing student and/or physician at the Lipid Clinic.**

I voluntarily consent for me/my child, \_\_\_\_\_, age \_\_\_\_\_, to participate based on the information provided. I agree that someone may contact me/my child at some time in the future about taking part in more research. Yes \_\_\_\_\_ No \_\_\_\_\_

\_\_\_\_\_  
Patient (18 or over)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent/Guardian

\_\_\_\_\_  
Nurse

\_\_\_\_\_  
Parent/Guardian

\_\_\_\_\_  
Witness

**For patients 7 to 17 years of age:** The nurse and/or the staff at the Lipid Clinic have verbally explained this study to me and I have given my assent.

\_\_\_\_\_  
Patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Nurse

The patient was not able to assent because \_\_\_\_\_

Written: August 16, 2006

### **Nurse's Statement**

I have fully explained to the patient/parent/guardian the nature and purpose of the above described procedure and the risks and discomforts involved in its performance. I have answered and will answer all questions to the best of my ability. I will inform the participant of any changes in the procedure or the risks and benefits, if any should occur.

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Nurse's Signature

Contact Nurse: Stephanie Smith, RN, BSN  
(937) 641-3000 (pager 117)  
(937) 641-4965

## PETITION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

Submit to: The Children's Medical Center of Dayton's Institutional Review Board

Date: 10-26-2006

Title of Investigation: A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI Percentile in School-aged Children and Adolescents.

Principal Investigator: Stephanie J. Smith RN, BSN

Department/Address: Wright State University-Miami Valley College of Nursing and Health/160 University Hall 3640 Colonel Glenn Highway Dayton, Ohio 45435

Telephone Number: 937-775-3132

Funding Source: Sigma Theta Tau International, Zeta Phi Chapter

Duration of Funding: A one time monetary award to be used to purchase the research questionnaire, The Three Factor Eating Questionnaire, envelopes and photocopying expenses.

**As Principal Investigator, I affirm that:**  
**The IRB has received all the information necessary for its complete review of this research proposal. This study will not begin until final IRB review is received. No modifications of the study will be put into effect without prior IRB approval. I will immediately report any emergent problems, adverse medication effects or reactions. Continuing review will be submitted as required by the IRB.**

Principal Investigator: Stephanie J. Smith RN, BSN 9/19/06  
Stephanie J. Smith RN, BSN (Date)

Co-Investigator: James Ebert MD 9-19-06  
James Ebert, MD (Date)

Co-Investigator: Bobbe Gray PhD 10-25-06  
Bobbe Gray, PhD, RN (Date)

Department Head (CMC): Dr. Adam Meszoff 9/20/06  
Dr. Adam Meszoff (Date)

Title of Investigation: A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI in School-age Children and Adolescents.

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**Investigator Financial Conflict of Interest Attestation:**

1. Do you or any immediate family member (spouse, dependent child) have any financial interest or equity in excess of \$10,000 in the sponsoring private or public company whose drug, procedure, technique or device is being used or tested in this study?

Yes \_\_\_\_\_ No  NA \_\_\_\_\_

2. Do you, a spouse or dependent child have an equity interest in the sponsor exceeding 5% of the sponsor's total equity?

Yes \_\_\_\_\_ No  NA \_\_\_\_\_

3. Have you or any immediate family member received payments such as salary, consulting fees and/or gifts exceeding \$10,000 from this company within the past 12 months?

Yes \_\_\_\_\_ No  NA \_\_\_\_\_

4. Are you or any immediate family member an officer, or serve as agent of the sponsor?

Yes \_\_\_\_\_ No  NA \_\_\_\_\_

**Risk versus Benefit ratio:**

**Minimal Risk**- the probability of harm or discomfort is no greater than ordinarily encountered in daily life, or during the performance of routine physical or psychological examinations or tests.

**Greater than minimal risk**, but with opportunity for direct patient benefit or contribution to patient's well being.

**Minor increase over minimal risk** and without opportunity for direct patient benefit.

**Higher risk** but having great societal benefit- must also submit to the Secretary of DHHS.

**HIPAA:**

Does the ICF contain HIPAA compliant language? Yes  No \_\_\_\_\_

Is there a separate HIPAA authorization? Yes \_\_\_\_\_ No

IND and IDE Information:

- Does the research involve an Investigational New Drug (IND)?

Yes		No	<input checked="" type="checkbox"/>	If Yes, give IND#	Provide regulatory review status:
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Attach all relevant documentation.

- Does the research involve an Investigational Device (IDE)?

Yes		No	<input checked="" type="checkbox"/>	If Yes, give IDE #	Provide regulatory review status		
If Yes, does this IDE pose:				Significant risk:		Non-significant risk:	
(Note: the IRB will make the final determination)							

Title of Investigation: A Descriptive Study of Parenting Styles, Parental Feeding Behaviors and BMI in School-age Children and Adolescents.

### HIPAA Requirements:

- List **ALL** of the Protected Health information (PHI) intended for use or disclosure.
- Justify the needs/purposes(s) of the use or disclosure of such information.
- List all people/organizations that may receive the PHI.
- List all people/organizations that may disclose the PHI.
- Statement that if recipient further discloses the PHI, it may no longer be protected by HIPAA.
- Expiration date or event after which PHI is destroyed. If indefinite or “never”, so state.
- Explain how confidentiality of the PHI will be assured.
- Explain right to refuse to sign. Indicate that refusal to sign HIPAA authorization, if separate, will prevent subject from entering the study.
- Mention right to revoke authorization and that it must be in writing.
- Signed copy of the HIPAA authorization must be given to the subject/guardian/parent, if separate from ICF.

***If you are applying for expedited review, please check the following FDA/OHRP criteria, which apply to your study:***

\_\_\_ **Category 2-** Collection of blood samples from children no more than twice weekly, and no more than 50ml or 3ml/kg body weight per draw.

\_\_\_ **Category 3-** Prospective collection of biological specimens for research purposes by noninvasive means for which could not be considered potentially sensitive (e.g., DNA).

**X** **Category 4 -** Collection of data by noninvasive procedures routinely employed in clinical practice, except X-Rays.

\_\_\_ **Category 5 -** Research involving non-sensitive materials (data, documents, records, specimens) that have been previously collected or will be collected solely for non-research purposes.

\_\_\_ **Category 6 -** Collection of non-sensitive data from voice, video, digital or image recordings made for research purposes.

\_\_X\_ **Category 7**- Research on non-sensitive group characteristics or behavior employing survey, interview, quality assurance methodologies.

\_\_\_ **Category 8** - Continuing Review of previously approved research where future enrollment is closed; or, all subjects have completed all research-related interventions and remain on the study purely for long-term follow-up; or, where no new subjects have been enrolled and no additional risks have been identified.

\_\_\_ **Category 9** - Research that did not initially qualify for expedited review, but the full IRB decided that no more than minimal risks are present, and no additional risks have been identified. **Please remember: A member of the medical staff or nursing practice research committee must serve as principal or co-investigator of any study at The Children's Medical Center of Dayton. In addition, a Department Head and the Vice President of Medical Affairs must review and sign the protocol prior to submission to the Institutional Review Board (IRB) for approval.**

## References

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