FAMILY ACTIVITY AND EATING HABITS QUESTIONNAIRE

by

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Nicole Ann Donisthorpe

April 2012

DEDICATION

I would like to dedicate my master's thesis to my fiancé and to my family. Without their love and support this master's thesis would not have been possible.

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ABSTRACT

The nationwide health concern of childhood obesity directly affects the western rural state of Montana. From 1990 to 2007, the childhood obesity rate in Montana has grown from affecting nine percent of the population of children to twenty-seven present (Daphane, 1990; NICH, 2007). The study's purpose is to examine family eating and activity habits that directly impact the likelihood of a child to develop childhood obesity including activity level, stimulus exposure, eating related to hunger, and eating styles. The instrument used in this research study was the Family Eating and Activity Habits Questionnaire contained four subcategories including activity level, stimulus exposure, eating related to hunger, and eating style. The Family Eating and Activity Habits Questionnaire use a wide variety of fill in the blank questions and rating scales in order to examine each of the subcategories.

The specific target population for this study was parents who reside in the western rural state of Montana based on a convenience sample. The sample population was parents, with children between the ages of five to thirteen, who were willing to complete a parental questionnaire. The parental questionnaires were distributed in March and April of 2011 in two elementary schools. After the parental questionnaires were collected, the parental questionnaire scores were measured by adding up the mean of each score; the mother, father, child, and total family score. The central tendency of the data was analyzed and compared with the mean total score establish in the previous Family Activity and Eating Habit Questionnaire results.

In the activity level section, the M score was 21.8. The SD computed was 22.96. In the stimulus exposure section, the M score was 10.7. The SD computed was 4.05. In the eating related to hunger section, the M score was 5.5. The SD computed was 2.42. In the eating styles section, the M score was 42. The SD computed was 15.07. In the overall scoring of the survey, the M score was 80. The results of overall score indicate that the higher the total scores, the less appropriate the eating and activity patterns.

CHAPTER I CHILDHOOD OBESITY

Introduction

Nutrition is essential for growth, development, health, and well-being of a child. However, the combination of excess nutrients and a lack of energy expenditure can potentially cause a harmful health condition known as childhood obesity (Coxall et al., 2008). Across the United States (US) and world-wide, the growing numbers of children affected with childhood obesity has reached an epidemic status (National Initiative for Children's Healthcare Quality (NICH), 2007). According to the Center for Disease Control and Prevention (CDC), the average US childhood obesity rate for the year 2007-2008 is 17%, significantly higher than in years past (2010). Due to the fact that childhood obesity is directly associated with significant health risks, treatment and prevention of childhood obesity has become a primary concern for the US children, parents, and health care systems.

Problem

The nationwide health concern of childhood obesity directly affects the western rural state of Montana. From 1990 to 2007, the childhood obesity rate in Montana has grown from affecting nine percent of the population of children to twenty-seven present (Daphane, 1990; NICH, 2007).

Purpose

The study's purpose is to examine family eating and activity habits that directly impact the likelihood of a child to develop childhood obesity including activity level, stimulus exposure, eating related to hunger, and eating styles. Further research will examine if there is a relationship between family patterns and obesity in the children.

Background

Childhood obesity is simply defined as a "chronic condition characterized by an excessive or abnormal increase in the accumulation of the fat cells in the body" (Hagerty et al., 2004, p. 481). The increases in the numbers of fat cells are attributed to the imbalance of caloric intake and energy expenditure. This imbalance exists due to a combination of causes and contributing factors (Hagerty et al., 2004).

Childhood obesity is a result of contributing factors including an imbalance of genetic, behavioral, and environmental factors (CDC,2007). The most prominent genetic factor is the presence of a family history of obesity (Byrne et al., 2009). Behavioral factors include unhealthy eating habits, inactivity, and inadequate sleeping cycles (Mayo Clinic, 2010). Lastly, environmental factors include race, ethnicity, socioeconomic status, and parental influence (Koplan et al., 2005).

There are serious health risks attached to the diagnosis of childhood obesity as overweight children have an increased risk for developing elevated cholesterol, asthma, joint problems, depression, and anxiety (Berkowitz & Borchard, 2009). If a child is moderate to severely overweight, the health issues can include: "increased growth in

puberty and then stunting, early onset of puberty in females, obstructive apnea, pancreatitis, gall bladder disease, hypertension, polycystic ovary syndrome, and long-term damage to the cardiovascular system" (Berkowitz & Borchard, 2009, para. 9). As childhood obesity progresses into adult obesity, the risk of stroke, diabetes, coronary heart disease and cancer increase (Rowen, 2009).

Childhood obesity not only damages the body physically, but it can also cause psychological issues in children as well. Decreased self-esteem, increased rates of sadness, loneliness, and nervousness are all mental health conditions that are associated with being overweight (Strauss, 2000). Children affected by childhood obesity also have a greater likelihood to smoke and drink alcohol when compared to other children who fall within a normal BMI (Strauss, 2000).

Theoretical Framework

In order to enrich and further develop the research topic of childhood obesity, Dorothea Orem's Self-Care and Self-Care Deficit Nursing Theories (Bandfield & Berbiglia, 2010) was used to guide the study's research. Dorothea Orem created the nursing theories known as Orem's Self-Care and Self-Care Deficit Nursing Theories, to "provide a conceptualization of the distinct helping service that nursing provides" (Bandfield & Berbiglia, 2010, p. 266). Overall, Orem's Self-Care and Self-Care Deficit was helpful in the connection of childhood obesity as her vast nursing experience and her outlook on the self-care of a person helped shape childhood obesity questions presented on the study's parental survey.

Definitions of Concepts

Several concepts are crucial to the basis of this study's research. This section will define five terms in order to provide a greater understanding of the theoretical and operational definitions vital to research development and reader comprehension. The definitions are included in the following subsections.

Childhood Obesity

Childhood obesity is "a condition characterized by excessive body fat related to an imbalance of energy input and expenditure" (Mayo Clinic, 2010, para. 1). Childhood obesity is measured by the body mass index (BMI) which "is a measurement of weight in relation to height that can be calculated using either English or metric units" (CDC, 2007, para. 1).

Activity Level

In this study the activity level is broken into two subtopics: sedentary behavior and physical activity. Sedentary behavior is "a pattern of behavior or level of physical inactivity that is relatively inactive or below the threshold for initial health effects to occur, such as a lifestyle characterized by a lot of sitting" (Booth & Chakravathy, 2002, p. 1). In this study, sedentary behavior will be measured by hours of sedentary behaviors per week including hours spent watching TV and playing video games and will represent a positive value. Physical activity "refers to bodily movement that works muscles, uses energy, and enhances health" (DHHS, 2008, p. vii). In this study, physical activity will be measured in hours spent in exercise/lesisure classes or time spent riding bicycles,

walking, swimming, gymnastics, dance, tennis, and other forms of exercise which will represent a negative value.

Stimulus Exposure

In this study the stimulus exposure focuses on the presence of non-nutritious snacks and sweets in the home. Nutrition is “the set of processes by which nutrients and other food components are taken in by the body and used which contribute to growth and development and influence recovery from illness and disability” (Coxall et al., 2008, p. 44).Stimulus exposure will be measured by counting the presence of non-nutritious snacks, sweets, cakes, ice-creams, and popsicles found the in the home.

Eating Related to Hunger

Hunger is commonly defined as the uneasy or painful sensation caused by a lack of food (Merriam-Webster, 2012). This study will measure the connection between hunger and the choice of eating through multiple choice questions answered by the parent.

Eating Styles

Eating is defined as the process of taking food or nutrition into the body through the mouth (Merriam-Webster, 2012). In this study, eating styles will be measured by the total number of reported eating behaviors such as eating while standing, eating while watching TV, reading, or working or eating late in the evening or at night.

Conclusion

As demonstrated problem, purpose, background knowledge, and theoretical framework sections, childhood obesity is a major health concern for the country of the US and the state of Montana. The quantitative research completed in this study will attempt to study the family activity and eating habits that are linked directly to the development of childhood obesity. Through a parental questionnaire the study will specifically focus on activity level, stimulus exposure, eating related to hunger, and eating styles.

CHAPTER II REVIEW OF LITERATURE

Introduction

The purpose of this chapter is to examine the relationships between childhood obesity, parental influence, and prevention techniques. The researcher hopes to obtain a greater understanding of childhood obesity by comparing and contrasting current literature as well as determining if there is existing literature available regarding childhood obesity risk factors that directly affect activity level, stimulus exposure, eating related to hunger, and eating styles.

Genetic Factors

Genetic risk factors for childhood obesity "include high birth weight, maternal diabetes, familial history of obesity, and early menarche" (Byrne et al, 2009, p. 18). A child is 40% more likely to be obese by adulthood if one parent is obese and this number increases to 80% if both parents are obese (Byrne et al, 2009). Therefore, parental obesity is one of the most significant predictor of childhood obesity.

Behavioral Factors

Behavioral factors encompass dietary practices and activity levels. Negative dietary practices involve an imbalance of caloric intake through an unhealthy diet and inadequate portion control (McBride, 2010). Children who consume diets that are dominated by foods high in energy density, high in fat, and low in fiber are more likely to

be obese and have higher BMI levels (McBride, 2010). As children increase the intake of saturated fats, sugars, and salts, his or her daily intake of fruits and vegetables significantly decreases (Coxall et al, 2008). Overall, McBride and Coxall et al. emphasize that the loss of a healthy and balanced diet directly leads to overweight and obesity.

The United States' culture highly influences the diets of American children. Using media outlets such as television and internet advisement, fast foods and processed or prepackaged foods have shifted to be the primary food source of children (Byrne et al, 2009). Portion control is also a huge dietary issue as four different articles highlighted the detrimental impact of increased portion sizes directly relating to a higher caloric intake (Byrne et al, 2009; Coxall et al, 2008; Kouta & Lazarou, 2010; McBride, 2010). The authors listed above all clearly stated that children take in more energy when presented with larger portions, thus reducing portion sizes is needed for the prevention and intervention of childhood obesity.

Activity Levels

Activity level is also an important factor in weight control (The George Washington University Medical Center, 2005; Levy et Petty, 2008) Children's activity levels are dropping throughout the United States as a quarter of all American children receive less than thirty minutes of physical activity a day (The George Washington University Medical Center, 2005, para. 6). Levy and Petty attributed this increased sedentary behavior to technology such as TV, video games, computers, and other media sources (2008). Decreased time outside with recess, physical education classes, and

safety concerns in neighborhoods also contribute to sedentary behaviors (Levy et Petty, 2008). The combinations of these factors, unhealthy dietary practices and decreased activity levels, have a negative effect on children's health and contribute to growing levels of childhood obesity.

Environmental Factors

Places such as home, school, child care centers, health care centers, and communities can all significantly contribute to environment factors related to childhood obesity. Issues such as race, ethnicity, socioeconomic status, and parent influence also play a key role in the development of childhood obesity (Koplan et al, 2005). Research has shown that there is an uneven distribution of obesity throughout the United States' population of children as the overweight and obesity prevalence rate increases by more than ten percent for Mexican and African Americans children when compared to white children at five percent (Frieden et al., 2004).

Socioeconomic Status

Through ecological studies, an association has been formed between overweight and obesity in relationship to low socioeconomic status as there is a decrease in financial means to acquire healthy foods (Hayes et Oliver, 2005). This study also found that individuals who lived within walking distance from healthy food sources were more likely to obtain healthy food sources compared to those living closer to unhealthy food sources (Hayes et Oliver, 2005). Parental influence will be discussed in greater detail in

the parental influence section. Overall, if a child has one or both parents suffering from obesity, has an imbalance in diet or exercise, or has contributing environment factors such as race or low socioeconomic status, he or she will be more likely to develop childhood obesity (Hayes et Oliver, 2005).

Parental Influence

As discovered in the genetic factor section, possessing a genetic predisposition to obesity is a significant factor in the development of childhood and adult obesity (Livingstone et al, 2006). Yet, passing down a genetic factor for obesity is not where parental influence ends. The general role of parental influence on childhood obesity has also been examined. One article pointed out that a child cannot take full responsibility for eating and activity patterns (Levy & Petty, 2008, p. 612). Therefore, parents become a model of health for their children through encouraging and providing opportunities for physical activity and exercise patterns. In addition, parents also influence eating habits, food preferences, frequency of food exposure, and portion sizes (Golan, 2006).

Research has shown that if parents do not recognize childhood obesity risk factors such as family eating and activity habits, childhood obesity complications and prevention techniques, the child is more at risk for becoming obese (Alpert et al., 2009). The parents are also less likely to intervene with effective prevention and treatment interventions (Faga et al., 2005). The goal of this study is to produce quality data about family eating and activity habits in families of Montana. In turn, health care providers could use potential use the information gained through the questionnaire to target specific eating or

activity areas of concern in order to improve childhood obesity prevention techniques through parent education and health promotion.

Prevention

Due to the fact that childhood obesity has multiple causes and contributing factors, prevention measures need to be approached from several different angles including children, parents, schools, neighbors, and the health care systems. In over twenty-five articles researched, authors took many different stances on where and how childhood obesity prevention needs begin. Estabrooks and Hayman (2008) recommended that action starts with creating a clearer childhood obesity body of literature through research so that a broader examination of potential policy, program, education, and practice strategies can occur.

A three stand approach through parent intervention, school-based childhood obesity prevention and social environment changes has been suggested (2008). The school-based childhood obesity prevention programs would encompass embedding developmentally appropriate curriculum emphasizing nutrition and physical activities, advocating for healthy school lunch choices and snacks, and providing set periods of time for physical education gym classes and recess (Levy & Petty, 2008). Finally, Larsen et al, examined childhood obesity prevention through a health care provider standpoint, recommending the frequent calculation of BMI, parent education related to nutrition and exercise, and close monitoring of children with higher obesity risk factors such as genetic disposition, race, and lower socioeconomic status (2005). Throughout the prevention

methods discussion in the research articles, the common topic that emerged was the importance of parental role in prevention of childhood obesity.

Impact on Nurses

Although the importance of childhood obesity is clearly outlined as a significant concern both to society and health care communities by Healthy People 2010 and the upcoming Healthy People 2020, the scope and magnitude of childhood obesity prevention and treatment is often an overwhelming, time consuming, and expensive task for health care providers (Healthy People 2010, 2000). Treatment of morbidities caused by childhood obesity is one of the most difficult challenges currently facing those in the primary health care settings, including nurses (Drohan, 2002).

As childhood and adult obesity numbers continues to rise, nurses and other health care providers feel the burden in workload and health care costs (Drohan, 2002). Nurses must care for an increasing number of patients with essentially preventable health issues such as “hypertension, hypercholesterolemia, hyperinsulism, diabetes mellitus, asthma, and obstructive airway disease” (McBride, 2010, p. 40) that lead to chronic morbidities and, eventually, mortality.

Nurses, in the primary care setting, will also need to take leadership positions in the prevention of childhood obesity as these nurses often have the opportunity to interact with whole family systems. During these interactions, the nurses can incorporate nutrition and health promotion knowledge, behavior modification techniques, and provide supportive measures that will assist primary care providers in converting knowledge into

practice (Drohan, 2002). A few of the behavior modification techniques include nutrition and healthy living education, self-monitoring of dietary input and exercise, social reinforcement , stimulus control, and proper modeling by a primary care provider (Drohan, 2002).

Impact on Society

According to the American Academy of Pediatrics, society must prepare for an increase in childhood obesity as it will create an "unprecedented burden on children's health" (2003, p. 424). Childhood obesity, if left untreated, will develop into adult obesity as eighty percent of overweight adolescents will continue to be obese into adulthood, resulting in fundamentally preventable adult diseases (American Academy of Pediatrics, 2003).

In the US, children will be experiencing a social crisis in which life spans will be significantly reduced, therefore, putting a burden on the remaining members of society both in the loss of productivity and increased health care costs. In the US, the costs of obesity, both childhood and adult, related medical expenses as well as lost productivity are estimated at $117 billion each year (U. S. Department of Health and Human Services (DHHS), 2001). Unfortunately, these costs are expected to considerably increase as a greater number of children with childhood obesity transition into adult obesity.

Dorothea Orem's Self-Care Deficit Nursing Theory

Dorothea Orem's Self-Care Deficit Nursing Theory distinctly ties into the topic of childhood obesity by examining "the theory of self-care, which describes why and how people care for themselves and the theory of self-care deficit, which describes and explains why people can be helped through nursing" (Bandfield & Berbiglia, 2010, p. 269). By using Dorothea Orem's Theories of Self-Care and Self-Care Deficit (Bandfield & Berbiglia, 2010) as a guiding principle of thought to assess the problem of childhood obesity, the childhood obesity parental questionnaire will have a set structure grounded on the research and understanding of the Self-Care Deficit Nursing Theory.

Through her theories, Orem connected the dots between the conditioning factors of self-care needs of the individual, the defect of the individual, self-care, a self-care agency and finally the nursing agency (Gaffney & Moore, 1996). Orem continued to expand on concept of self-care by determining that "people have the innate ability, right, and responsibility to care for themselves and it encompasses those activities one initiates and performs to maintain life, health, and well-being" (Clark, 1986, p. 127). In respect to childhood obesity, since children are dependent on their primary care provider, it becomes the parents' responsibility to provide self-care in respect to nutrition, exercise, and healthy life style choices. In order to provide self-care to a child, a parent needs to have the proper education about childhood obesity since the prevention of childhood obesity is significantly reduced if the parent does not obtain, or comprehend, knowledge related to childhood obesity (Golan, 2006).

Literature Related to Combinations of Concepts

Childhood Obesity and Parental Influence

During the literature search for childhood obesity and parental influence, two common themes surfaced from the articles found: parental obesity prevention techniques for childhood obesity and the importance of parental childhood obesity education. However, there is a large gap in research and knowledge related to current parental practices to reduce the likelihood of childhood obesity or parents' knowledge deficit related to childhood obesity as no research was found regarding these topics. Parents are the main agents of change when it comes to preventing and overcoming childhood obesity.

One qualitative study highly recommend addressing the growing problem of childhood obesity through family-based, parental guided interventions in order to change food consumption patterns, reduce sedentary activities and increase physical activity (Golan, 2006). Another article suggested researched strategies that parents should follow including, "providing healthy foods, encouraging and making available developmentally appropriate physical activity, reducing the time that children spend with technological devices, monitoring the children's exposure to advertisements, taking a proactive role in their children's life, and finally presenting as a positive role model" (Levy & Petty, 2008, p. 612-613). All the recommendations listed in the parental influence articles place the parents at the front line of defense against childhood obesity.

Although a parent might be a first line of defense against childhood obesity, parents are useless without education in relationship to nutrition, exercise, and childhood

obesity. It is best to begin parent education at the earliest levels of childhood. Obesity prevention education is essential during antenatal classes (Ben-Natan et al, 2009). Another critical time period is during the first two years of a child's life as parents and children will be frequently in and out of a clinic setting.

In the clinic setting, the recommended well-child check-ups become a time for teaching, the use of reinforcing anticipatory guidance, and finally a time for follow up questions related to childhood obesity (Vaughn & Waldrop, 2007) Childhood obesity parental and child education should be carried throughout elementary, middle school, and high school in order to continue to reinforcing healthy life style choices through the life span (Ben-Natan et al, 2009).

Childhood Obesity and Prevention

Throughout the United States "communities are slow to institute effective policies and protocols for prevention" (Levy & Petty, 2008, p. 609) and, often, parents, schools, and even health care providers are left undereducated about the treatment and prevention of childhood obesity. Six childhood obesity articles focused specifically on prevention of childhood obesity and each article mentioned the importance of education and awareness through a policy paradigm shift (Estabrooks & Hayman, 2008; Golan, 2006; Larsen et al, 2005; McBride, 2010; Levy & Petty, 2008; Vaughn & Waldrop, 2007).

The policy paradigm shift encourages parents, health care professionals, child care facilities, and schools to reduce the childhood obesity population through a push for a change in government, parenting, food production, healthcare, education, and culture (McBride, 2010). McBride expanded on the policy paradigm shift by emphasizing the

need to support childhood obesity prevention programs such as Tackling Obesity through the Healthy Child Programme, a framework for action for health care professionals and parents in which prevention techniques can be learned and applied (2010). On the individual level of prevention, research has shown that childhood obesity prevention is most effective when physical activity, dietary, and behavioral components in combination are modified (Levy & Petty, 2008).

Childhood Obesity and Dorothea Orem's Self-Care Deficit Nursing Theory

On the initial search of literature related to Dorothea Orem and her body of work, ten different articles were yielded. The ten articles highlighted her efforts to conceptualize nursing, provided literature rooted in her Self-Care Deficit Nursing Theory (Bandfield & Berbiglia, 2010), and offered reflections and analysis of her nursing theory. Despite the body of knowledge the ten articles provided, when Dorothea Orem or her Self-Care Deficit Nursing Theory (Bandfield & Berbiglia, 2010) was researched in conjuncture to childhood obesity, parental influences, or prevention, no articles were produced. However, there were articles and studies which emphasized the correlation between the Self-Care Deficit Nursing Theory and urinary incontinence, pediatric asthma, contemporary coronary care, women with diabetes, and childhood immunizations (Baker et al, 2008; Bernier, 2002; Cox & Taylor, 2005; Horan & Timmins, 2006; Kumar, 2007). Overall, there is simply no current literature relating the topics of childhood obesity and Dorothea Orem's Self-Care Deficit Nursing Theory (Bandfield & Berbiglia, 2010).

Gaps in the Literature

Throughout the review of literature, a general knowledge about childhood obesity etiology, causative factors, and health risks is gained. The review of literature did cover parental influences in the aspects of prevention and education. However, there are no articles focused on parental knowledge deficits related to childhood obesity. The literature covers prevention techniques from several different angles. Yet, there is virtually no information, literature, or studies on Dorothea Orem's Self-Care Nursing Theory (Bandfield & Berbiglia, 2010) and childhood obesity. As a whole, it is vital to continue researching childhood obesity with an emphasis on parental influence, prevention, and Dorothea Orem's Self-Care Nursing Theory (Bandfield & Berbiglia, 2010) as new studies would contribute new knowledge and data essential to the process of halting and reversing the growing epidemic of childhood obesity.

Conclusion

The goal of this research is to assess the health practices of family in Montana by evaluating activity levels, stimulus exposure, eating related to hunger, and eating styles in the form of a parental questionnaire. In addition, the research will use Dorothea Orem's Nursing Theory of Self Care (Bandfield & Berbiglia, 2010) to structure parental survey questions. The Self-Care Nursing Theory (Bandfield & Berbiglia, 2010) will also help analyze and target which parental knowledge deficit areas need to be addressed relating to childhood obesity awareness, prevention, and intervention. With the information gained through this study, a childhood obesity knowledge gap can be decreased, allowing

the United States to take one step forward towards decreasing childhood obesity rates through parental prevention education.

CHAPTER III METHODOLOGY

Introduction

The purpose of this study is to examine family eating and activity habits that directly impact the likelihood of a child to develop childhood obesity including activity level, stimulus exposure, eating related to hunger, and eating styles. Chapter three will discuss the proposed quantitative research study by expanding on several methodology subtopics. This first subtopic will be the population and sample in which the researcher will describe the overall population, target population, and the sample to be included in the research. The design of the study will define the variables of the study and describe how each one will be measured. In the procedure for data collection section the researcher will detail the methods and procedure as well as a specific time frame of the study.

In the instrumentation section, the research will expand on the population and sample the instrument which will be used, the settings in which the instrument will be used, the reliability of the instrument, and the validity of the instrument. A discussion of Rights of Human Subjects and the consent process will be conducted in order to identify how the researcher will protect the rights of the human subjects and how consent will be obtained from each participant. Finally, the planned statistical analysis will emphasize the researcher's statistical analysis in relation to the research question.

Population and Sample

Excessive weight during childhood stems from several interacting factors including parental practices and familial environment (Brand et al, 2003). Since parental influence plays an important role in childhood obesity, this study's overall population of interest is parents. The specific target population for this study is parents who reside in the western rural state of Montana. The sample population is parents, with children between the ages of five to thirteen, who are willing to complete a parental questionnaire in order to assess family activity and eating habits that are related to the development of childhood obesity.

Through a G*Power analysis, the researcher was able to determine the appropriate sample size needed for the research study (Buchner, 2007). The researcher entered the following input parameters which included; a two tailed test, the effect size of 0.5, an alpha error probability of 0.05, and lastly power as 0.99. A two tailed test was used as the researcher used two alternative hypotheses, one negative and one positive (Stockburger, 1996). The effect size of 0.5 was used as the questionnaire administered, Family Eating and Activity Habits Questionnaire, has established reliability and validity. Please see reliability and validity section for greater details. The power of 0.99 and an alpha error probability of 0.05 was used as the researcher wanted to use the greatest power value and the lowest alpha error probability in order to increase the significance of the results obtained through the study. The G*Power analysis computed that 58 questionnaires would need to be completed and analyzed to order to achieve statically significant research results (Buchner, 2009).

Due to the size of the western rural state, the sample size will be based off a convenience sample in which the participants will be recruited at the convenience of the researcher (Herek, 2009). Parents will be recruited to complete the Family Eating and Activity Habits Questionnaire through a school district in Montana. The recruitment process will be discussed in greater detail in the procedure for data collection section.

Study Design

This research design is an quantitative study in the form of a parental questionnaire targeting parents of children ages five to thirteen in Montana. The parental questionnaire will be an anonymous, self-administered questionnaire to identify the factors that facilitate childhood obesity and monitor the environmental factors and family behavior (Golan & Weizman, 1998). The questionnaire will focus on factors that impact the likelihood of a child to develop childhood obesity including questions that pertain to activity level, stimulus exposure, eating related to hunger, and eating style and each of these scales will be converted into a measureable research variable (Golan & Weizman, 1998). Through the help of Dorothea Orem's Self Care Nursing Theory, the parental questionnaire used will directly link to the issues of maintaining life, health, and wellbeing of children (Banfield & Berbiglia, 2010).

The scoring of the Family Eating and Activity Habits Questionnaire will be a complicated process as the parent and the child will receive a score from the questionnaire. Each of the scales will be graded and scored differently. Questions in scale number one (questions one-four) may receive positive points or negative values based on

whether the activity is a factor in the development of childhood obesity (Golan & Weizman, 1998). The sum of each scale will be added together and the higher the total scores the less appropriate the eating and activity pattern (Golan & Weizman, 1998). The instrument, Family Eating and Activity Habits Questionnaire, will be discussed in further detail in the instrumentation section.

Procedure for Data Collection

The data collection process began by first gaining verbal and written permission from the Montana school district to conduct the questionnaire. The researcher contacted the school district in December 2010 and gained verbal and written permission at the end of December 2010. The researcher contacted the superintendent and two principals in order to gain administrative support and promote participation in the research study. Once permission is gained from both sites, the participant recruitment began. The parental questionnaires were distributed in March and April of 2011 in two elementary schools. The researcher had childhood obesity parental questionnaire stations set up at each elementary school during Parent Teacher Conferences.

The parents were encouraged by the teachers and administrator of the elementary school to stop by to complete the childhood obesity questionnaire before or after his or her child's parent teacher conference. Each parent received a cover letter and consent form. The cover letter contained instructions for the questionnaire. The consent form will be discussed in more detail in the Consent Form section of this chapter.

If the researcher had not collected the desired number of completed parental questionnaires on completion day, the researcher would have extended the childhood obesity parental questionnaires to another elementary school in order to meet the desired sample size. Once the desired amount of parental questionnaires was collected, the researcher began the analysis process. The researcher was advised and aided in the analysis process by a thesis board containing three members.

Instrumentation

Parental Questionnaire

The instrument used in this research study was the Family Eating and Activity Habits Questionnaire. This questionnaire tool was created in 1998 and two studies steamed from the questionnaire. The first study involved forty mothers who were recruited as shoppers from a local grocery store. The mothers were asked to complete the questionnaire with one child in mind. The child was weighed to determine if he or she was obese. Both the obese and non-obese questionnaires were used in the research. The second study used the questionnaire on sixty parents who were involved in a clinical intervention program for childhood obesity who were twenty percent over the expected weight per age, height, and sex. All parent participants in both studies had children between the ages of six to eleven. (Golan & Weizman, 1998).

The Family Eating and Activity Habits Questionnaire has four subcategories including activity level, stimulus exposure, eating related to hunger, and eating styles. The questionnaire contains four items related to activity level, eight items related to

stimulus exposure, four items related to eating related to hunger, and thirteen items related to eating styles. The activity questions deal with the frequency the parents and children engage in physical activity as well as sedentary behavior (Golan & Weizman, 1998). The stimulus exposure questions deal with "presence and visibility of snacks, sweets, cakes, and ice-cream in the house; boundaries of child's autonomy in buying or taking these foods" (Golan & Weizman, 1998, p. 772). Eating related to hunger questions determine the family's association between eating and hunger even asking what they would suggest the child do if he or she is hunger between mealtimes (Golan & Weizman, 1998). Finally, the eating style questions determine if the child and parents "[eat] while watching TV or doing homework or reading, following stress, and between meals" (Golan & Weizman, 1998, p. 772).

The Family Eating and Activity Habits Questionnaire use a wide variety of fill in the blank questions and rating scales in order to examine each of the subcategories. An example of a fill in the blank question would be: How many hours per week on average do you watch television and or play computer games (Golan & Weizman, 1998)? The parent would then write or type the number on hours in the space provided on the questionnaire. An example of question with a rating scale would be: To what degree can your child eat snacks or sweets without your permission- 0-Never, 1-Almost never, 2-Sometimes, 3-Frequently, or 4-Always (Golan & Weizman, 1998)? The parent would then select which number most appropriately represents his or her child. There are four multi focus questions on the Family Eating and Activity Habits Questionnaire in which the parent is asked to analyze the mother, father, and child at the same time. An example

of a multi focus question would be: When you are alone and are not busy, do you get bored- 0-Never, 1-Almost never, 2-Sometimes, 3-Frequently, or 4-Always (for Mother, Father, and Child) (Golan & Weizman, 1998)? The parent would then select three different numbers, one for self, spouse, and child.

Each one of these subcategories of the Family Eating and Activity Habits Questionnaire fall directly under Dorothea Orem's Self-Care universal requisites in which she focuses on the basic needs of a human including; "maintenance of sufficient intake of air, water, and food, the balance between activity and rest and finally the prevention of hazards to human life wellbeing" (Banfield & Berbiglia, 2010, p. 269). It will also pertain to health deviation self-care as parents need to be aware of and attending to the effects and results of pathologic conditions, such as childhood obesity (Carol, 2001).

Reliability

Reliability is "the degree to which an instrument consistently measures whatever it is measuring" (Irby & Lunburg, 2008, p. 182). The best way to define reliability for this particular study would be to undergo the test-retest reliability. The test-retest reliability "compares the instrument's results from an initial test with repeated measures later on" (Cobby & Gilchrist, 2003, para 7). The Family Eating and Activity Habits Questionnaire were administered on two occasions, three weeks apart to a pilot population. The "total score for the test-retest r was 0.85 ($P<0.01$)" (Golan & Weizman, 1998, p. 773) which indicates that the questionnaire is reliable. The instrument would gain a degree of

reliability if there is an agreement over repeated tests where the variables being measured remain unchanged (Cobby & Gilchrist, 2003).

Another way to establish reliability is using Cronbach's alpha statistics which is a tool to "determine the internal consistency or average correlation of items in a questionnaire instrument to gauge its reliability" (Santos, 1999, para 1). This tool was not used in the Family Eating and Activity Habits Questionnaire. However, the Cronbach's alpha can be calculated with the assistance of the SPSS statistical analysis computer software, located on each of Montana State University campuses. When applied this study, a Cronbach's alpha would indicate if the questionnaire instrument will elicit consistent and reliable response even if questions were replaced with other similar questions.

Validity

Validity determines whether "an account is valid or true, if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise" (Winter, 2000, para 4). In order to gain validity, a series of studies would need to be established to determine construct validity providing justification of the instrument and appropriateness of the questionnaire interpretations (Irby & Lunburg, 2008). The Family Eating and Activity Habits Questionnaire established content validity by using a team of "ten experts in epidemiology, pediatric medicine, internal medicine, health education, nutrition, psychology, and sociology to evaluate the questionnaire for content validity" (Golan & Weizman, 1998, p. 772). Each expert was asked to comment on

completeness of criteria, clarity, and suitability of scoring (Golan & Weizman, 1998). After reviewing the expert comments the questionnaire was modified as eight questions were deleted and the remainders were modified through shortening and clarification.

The Family Eating and Activity Habits Questionnaire also looked at concurrent validity in order to determine questionnaire's ability to differentiate between obese vs. normal weight children's behaviors (Golan & Weizman, 1998). This was done by comparing the mean scores of the questionnaires of obese children with non-obese children. The study found that "scores of the obese children were significantly higher than those for the normal-weight children and the total family score was also higher in families with an obese child" (Golan & Weizman, 1998, p. 773).

Discussion of Rights of Human Subjects and Consent Process

Institutional Review Board (IRB) and Human Subjects Certificate

The rights of human subjects will be taken into high consideration throughout all parts of the research process. This research received approval from the Montana State University Institutional Review Board (IRB) as the researcher will completed and submitted an IRB form to ensure that the research was conducted according the ethical standards. Approval was also gained from the assistant superintendent of a school district in Montana. The researcher received a Human Subjects Certificate, a web-based training course, from the Collaborative Institutional Training Initiative (CITI) entitled, "Social and Behavioral Responsible Conduct of Research Course" (2010). A copy of the certificate completion can be found in Appendix A.

Informed Consent

Research participants were given a written description of the study which will highlight the study purpose, participant criteria, study agenda, study risks, benefits of the study, cost of participation, payment for participation, confidentiality of records, participation obligation, study funding, and finally authorization for the participant. The researcher included full disclosure as all vital information pertaining to the research study such the description of the study, participation, risks, and benefits will all be clearly outlined (Office of Human Subjects Research (OHSR), 2006).Throughout the informed consent the researcher specifically emphasized the importance of autonomy, privacy, and confidentiality.

The researcher highlighted that the choice to participate in the study is an autonomous decision and the participant will be able to withdrawal from the study at any time. The researcher protected the participants' rights to privacy and confidentiality by keeping the parental questionnaires anonymous by numbering each questionnaire. The questionnaires and informed consents were kept in a locked file cabinet and will be destroyed after the results have been recorded and analyzed. The researcher, thesis chair, and Montana State University IRB chair contact information was available to the participant with instructions to contact these sources for questions or to request additional information about the study.

Each questionnaire distributed had an informed consent form attached to the front of his or her packet with instructions to read carefully and sign. If a parental questionnaire packet returned with an incomplete informed consent form, then the

questionnaire results was discarded and did not contribute to the study's research results. An outline of the informed consent components and format can be found in Appendix B.

Planned Statistical Analysis

In this section the researcher will describe the statistical analysis that was used to examine family eating and activity habits that directly impact the likelihood of a child to develop childhood obesity including activity level, stimulus exposure, eating related to hunger, and eating styles. After the parental questionnaires were collected, each score of a parental questionnaire scores was measured by adding up the mean of each score; the mother, father, child, and total family score. The central tendency of the data was analyzed and compared with the mean total score establish in the previous Family Activity and Eating Habit Questionnaire results.

A test-retest reliability study was done to determine reliability of the questionnaire. The results from the parental questionnaire and the results from the statistical analysis will be reported in great detail in chapter four.

Limitations

The first potential limitation of this research is risk of a small sample size of the parental surveys that would not produce statistically significant data. Due to the fact that the parental surveys will be distributed in Montana, a state with a low population, local community support will need to be gained in order to rally potential survey participants. By finding a community gate keeper, such as an administrative members of the school

district, and by emphasizing the practical importance of the research, permission and support was received and created a larger participant pool (Dibartolo & McCrone, 2003).

The second potential limitation to this study is not producing a diverse parental participant sample. This study attempted to overcome this limitation by accessing a sample that included various socioeconomic statuses as well as included a wide range of children age groups. By approaching two elementary schools in a public school system in Montana, the survey sample found a better representation of the overall population as the questionnaire targeted lower, middle, and high socioeconomic groups. Those socioeconomic groups were based on the school districts' data related to the number of families who qualify for the free and reduced lunch program.

Conclusion

The methodology of this research study has been presented in this study through the description of the population and sample, study design, procedure for data collection, instrumentation, discussion of Rights of Human Subjects and Consent Process, limitations, and lastly the planned statistical analysis. The chapter four will present the researching finding by presenting the data collected through the parental questionnaires.

CHAPTER IV RESULTS

Introduction

The goal of the quantitative study was to explore health practices related to increased rates of childhood obesity by surveying and isolating family health practices. The Family Eating and Activity Habits Questionnaire was broken down into four separate scales: activity level, stimulus exposure, eating related to hunger, and eating style and scored accordingly (see Chapter III: Methodology). Although the mother, father, and child all received an individual scores for the survey, this chapter will outline the family score for each of the four scales and the overall family score of the questionnaire through measures of central tendency.

In this chapter, the central tendency data will be presented in terms of mean, median, mode, range, outliers, and standard deviation. The mean will be referred to as M, median will be referred to as Mdn, mode will be referred to as m, range will be referred to as R, and standard deviation will be referred to SD. Select questions from each scale will be selected and analyzed by the researched to further focus on specific family activity and eating habits.

Data

Questionnaire Results

Within the two Montana elementary schools chosen, two hundred and fifty questionnaires were distributed during parent teacher conferences. The researcher

received seventy-seven questionnaires back; however, three questionnaires were discarded due to incompletion. 11/74 surveys were completed by single mothers. The single mother family scores were calculated the same as the families with both a mother and a father. The results of the questionnaire prove to be statically significant as the G*Power analysis, as explained in Chapter III: Methodology, computed that 58 questionnaires would be needed and the researcher was able to collect and analyze 74 questionnaires. The questionnaires collected provide a representation of family eating and activity habits with children ages five to twelve years old.

Activity Level

In the activity level section, the M score was 21.8. The Mdn score was 18.5 and the m score was 31. The R was -14 to 85 with a low outlier score being -14 and the high outlier score was 85. The SD computed was 22.96. The most hours a child and parent watched television and/or played computer games was thirty hours per week with the least amount of hours being zero hours per week. The most hours a child engaged in activity per week was twenty-seven hours per week and the least amount of hours was zero hours per week. The most hours of activity a parent engaged in activity was fifteen hours per week and the least was zero hours per week.

Stimulus Exposure

In the stimulus exposure section, the M score was 10.7. The Mdn score was 11 and the m score was 11. The R was 2 to 20 with a low outlier score being 2 and the high outlier score was 20. The SD computed was 4.05. The largest number of snacks and

sweets combined found in the households was twelve items and the least amount of snacks and sweets found was one. On question number eleven, to what degree can your child eat snacks and/or sweets without your permission- twenty-three parents answered never, whereas one parent answered always.

Eating Related to Hunger

In the eating related to hunger section, the M score was 5.5. The Mdn score was 5 and the m score was 5. The R was 2 to 16 with a low outlier score being 2 and the high outlier score was 16. The SD computed was 2.42. On question number fourteen, 36/73 out of the parents stated that the child would eat when the food was offered by the mother/father instead of when he/she asks for it. 47/73 parents stated that if the child was not hungry they suggested that 1) the child will eat later, 2) sit at the table with the rest of family, but would not eat or 3) would sit at the table, but would eat less.

Eating Styles

In the eating styles section, the M score was 42. The Mdn score was 41 and the m score was 39. The R was 11 to 80 with a low outlier score being 11 and the high outlier score was 80. The SD computed was 15.07. In scale number four, 47/74 parents stated that the mother, father, and child sometimes, frequently, or always ate while watching television, reading or working. Other than the dining room or kitchen, the most common room to eat was the living room or TV room. 42 mothers, father, and children claim to sometimes, frequently, or always eat in the living room or TV room with six families stating they always eat in the TV room.

Overall Scoring

In the overall scoring of the survey, the M score was 80. The Mdn score was 77.5 and the m was 71. The R was 21 to 165 with a low outlier score being 21 and the high outlier score was 165.The SD was 32.61. The results of this section will be discussed in greater detail in Chapter IV: Discussion, remembering that the higher the total scores, the less appropriate the eating and activity patterns.

Test-retest Reliability

To establish reliability, to researcher chose the test-retest reliability method over Cronbach's alpha statistics. The test-retest reliability method was chosen due to the fact that Cronbach's alpha statistics had not been used in analyzing the Family Eating and Activity Habits Questionnaire in the past. During the original analysis of the Family Eating and Activity Habits Questionnaire, the mean total score for the questionnaire was 0.84 with a range of 0.78-0.90 (Golan et Weizman, 1998). During a second reproduction of the study, the mean total score for the questionnaire was 0.85 although a range was not included (Golan et Weizman, 1998). During this study, when the researcher converts the total score into a percentage, the mean score for the questionnaire was 0.80; however, the range of total scores was broader being 21-165.

Conclusion

Overall, the Family Activity and Eating Habits Questionnaire was distributed and completed by 74 parents in two Montana elementary schools. The results were analyzed using central tendencies and select questions were chosen for further evaluation. The

implications of the results of the Family Activity and Eating Habits Questionnaire will be discussed in further detail in Chapter V: Discussion.

CHAPTER V DISCUSSION

Activity Level

In the activity level section, the questionnaire focused primarily on active and sedentary behaviors of a family. The results of the questionnaire analysis showed that the more hours per week the family spent engaging in physical activity and leisure time classes, the less likely the child would be to develop childhood obesity. Shockingly, the most hours a child and parent watched television and/or played computer games was thirty hours per week. The results from the questionnaire are similar to the national average of time spent watching TV.

The average hours of TV kids, 8 to 18 years old, spend watching TV a week is nearly 28 hours a week (Kaiser Family Foundation, 2012). Yet, The American Academy of Pediatrics (AAP) recommends that children older than two years old watch no more than one to two hours a day of quality TV programming with a total of no more than 14 hours a week (Kaiser Family Foundation, 2012). Parents need to be aware of the link between increased hours watching television and childhood obesity and encourage children to be active. Parents can set a positive example for children when it comes to restricting TV hours per week and engaging in adequate amounts of physical activity.

Stimulus Exposure

In the stimulus exposure section, the questionnaire determined that all of the families had at least one or more snacks/sweets present in the house. To make matters

worse, when asked to what degree can your child eat snacks and/or sweets without your permission- twenty-three parents answered never, whereas one parent answered always. First and foremost, parents need to take responsibility for the child's eating habits. Parents need model healthy eating behaviors and attitudes by selecting healthy snack options to have available at home and by monitoring snack consumption (Department of Health, 2012). As with eating meals, snacks need to be consumed in moderation. Parents may need more education related to health snack options, which can be found through numerous sources such as MyPyramid from mypyramid.org (Department of Health, 2012).

Eating Related to Hunger

In the section eating related to hunger, the questionnaire focused on issues related to hunger or food insecurity. Childhood food insecurity has been associated with being overweight and obese even when controlling factors such as age, race, gender, and family poverty index (Casey et al., 2006). 36/73 or nearly 50% of the parents stated that the child would eat when the food was offered by the mother/father instead of when he/she asks for it. Parents need to be able to recognize hunger ques and teach children how to understand his/her own hunger ques. Children must also be taught to eat until they satisfy their hunger, but not to eat beyond hungry. 47/73 parents stated that if the child was not hungry they suggested that 1) the child will eat later, 2) sit at the table with the rest of family, but would not eat or 3) would sit at the table, but would eat less. 47/73 parents

had the appropriate response to their child. An inappropriate response would be to have the parent convince the child to eat with the rest of the family.

Eating Styles

In the eating styles section or scale number four, 47/74 parents stated that the mother, father, and child sometimes, frequently, or always ate while watching television, reading or working. Other than the dining room or kitchen, the most common room to eat was the living room or TV room. 42 mothers, father, and children claim to sometimes, frequently, or always eat in the living room or TV room with six families stating they always eat in the TV room. To prevent childhood obesity, parents need to go back to the basics and establish snack times, daily family meals, and serve family style meals. Families should eat solely in the kitchen and dining room without the presence of a TV. If a distraction such as TV, computers, books, or work is present the parent is less likely to pay attention to the feeding consumption of him/herself as well as the child.

Overall Scoring

Taking into account the four scales, including activity level, stimulus exposure, eating related to hunger, and eating style, a total score for the Family Activity and Eating Habits Questionnaire can be gained. In the overall scoring of the survey, the M score was 80 or 0.8 percent. The results of the questionnaire is simple- the families which score higher than 80 for a mean score have less appropriate eating and activity patterns and are more likely to have children that develop childhood obesity. The families who have a

score less than 80 have more appropriate and healthy activity and eating habits. The families with a score higher than 80 should then be targeted for education regarding better activity and eating habits as well as be provided with general information regarding childhood obesity.

Suggestions for Future Use

If the researcher were to repeat the Family Activity and Eating Habits questionnaire process, several different considerations and modifications would be made. The first suggestion is based on esthetics, as the researcher would edit the format of the questionnaire to be more reader friendly especially on scale number four. With clear cut lines separating the eating behaviors in scale four, the researcher would be able to more easily analyze the data. The researcher would take the Family Activity and Eating Habits Questionnaire one step further to use it as a comparison tool. The researcher could compare obese and non-obese family scores. The research could also use the questionnaire to determine changes in answers in regards to weight loss.

Conclusion

Childhood obesity has become a national epidemic that is directly associated with significant health risks. Parents are on the front line of prevention, leading by example in regards to activity level, stimulus expose, hunger ques, and eating styles. The Family Activity and Eating Habits Questionnaire provides a solid base of questions to simply observe family health care practices as well as monitor changes in family habits. Overall,

the Family Activity and Eating Habits Questionnaire can be used establish unhealthy family health practices that can be linked to a greater likelihood of a child developing childhood obesity.

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APPENDICES

APPENDIX A

HUMAN SUBJECTS CERTIFICATE

Human Subjects Certificate, a web-based training course, from the Collaborative Institutional Training Initiative (CITI) entitled, “Social and Behavioral Responsible Conduct of Research Course”

CITI Collaborative Institutional Training Initiative: Students Curriculum Completion Report
Learner: Nicole Donisthorpe (username: n_donisthorpe)
Institution: Montana State University
This course is appropriate for students doing class projects that qualify as "No More Than Minimal Risk" human subjects research.
Basic Course Passed on 10/18/10

(Ref # 5123533)

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

APPENDIX B

SUBJECT CONSENT FORM

SUBJECT CONSENT FORM FOR PARTICIPATION IN HUMAN RESEARCH AT MONTANA STATE UNIVERSITY

Study Title: Family Activity and Eating Habits Questionnaire

You are being asked to participate in a study that is observing activity and eating habits in families of Montana.

Study purpose
The purpose of this study is to gather information related to activity level, stimulus exposure, eating r/t hunger, and eating styles.
This information may help us better understand the education needs of parents in order to increase childhood obesity prevention measures in a western rural state.

Participant criteria
Parents of a western rural state who have one or more children between the ages of five and thirteen who are willing to complete a parental questionnaire related to childhood obesity.

Study agenda
If you choose to participate in this study, you will be asked to complete at twenty question questionnaire about childhood obesity and return the questionnaire back to your child's school via Wednesday envelopes.

Study risks
There is minimal risk involved in this study. Every attempt will be made to maintain your privacy and confidentiality. No names will be used in the analysis or reporting of this research.

Study benefits
Participating in this study will provide no direct benefits to you. This study may allow insight to information related to childhood obesity.

Cost of participation
There is no cost involved in participation in this study.

Payment for participation
There is no financial reimbursement for study participation.

Participant questions
You are encouraged to ask any questions you may have about this study. The following contact information may be used at any time during this study;
1. Nicole Donisthorpe (Researcher) at nicole.donisthorpe@msu.montana.edu, or
2. Karen Zulkowski (Thesis chair) at karenz@montana.edu

Questions about rights of human subjects can be directed to Mark Quinn (Chair, MSU Institutional Review Board) @ (406) 994-4707.

Confidentiality of Records

No personal and identifiable data will used for publication. All consent forms and questionnaires will be destroyed after 2 years.

Participation Obligation

Participation in this study is completely voluntary. You may withdraw from this study at anytime. Any data gathered to that point will be destroyed.

Study Funding

This is an unfunded study that is being completed as a portion of the Montana State University Masters of Nursing program requirements.

Authorization from Adult Participants

AUTHORIZATION: I have read the above and understand the discomforts, inconvenience and risk of this study. I, _____ (name of subject) agree to participate in this research. I understand that I may later refuse to participate, and that I may withdraw from the study at any time. I understand that I may contact the research, Nicole Donisthorpe, if I wish to receive a copy of this consent form for my own records.

Signed:

_____

Witness:

_____

Investigator:

_____

Date:

_____