

Are Parents of Normal Weight Children More Aware of Their Child's Activity Level  
than Parents of Overweight Children?

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## *ABSTRACT*

### *Background*

Childhood obesity is becoming an epidemic in North America and around the world (Deckelbaum & Williams, 2001). Obesity is second only to smoking for contributing to total mortality, and it is estimated that \$117 billion will be spent annually for health care costs related to this problem (Fitzgibbon & Stolley, 2004). A study in 2001 approximated that 22 million children were overweight worldwide, with numbers in the United States doubling over the past three decades.

### *Research Question*

Activity level in the overweight pediatric population has been frequently studied as evidenced by the numerous results the literature review revealed. A search for articles about parental perception of general health, weight status, dietary intake, screen viewing and inactivity also returned a large number of hits. However, our search did not lead to any reports of parental perception of their overweight child's activity level. This made us wonder: are parents aware of how much physical activity their children receive? Is there a difference between the parental awareness of normal weight children versus overweight children?

### *Methods*

A descriptive correlational study was conducted by drawing a convenience sample of 64 children ages six to 12 years and their parents/guardians. The participants are parishioners at a church in Canton, MI. Each dyad was asked questions about activity level and the amount of time spent doing certain activities. The responses were

compared between the parent/guardian and their child, as well as between parents/guardians of normal weight and overweight children.

### *Results*

No difference was revealed between parent/guardian and child reports on minutes spent playing with physical activity, which is a general measure. Minutes reported watching television, playing computer and video games, and doing homework were significantly different when the parent/guardian's answers were compared with the child's.

Parents/guardians who rated their child as very active were accurate at reporting their child's activity level; according to pedometer results, their children are very active.

Parents/guardians who rated their children in the other categories were not accurate about their child's activity level and therefore have a different perception of their child's activity level. No statistical relationship was found between the difference in the amount of minutes that the parent/guardian reported and the amount of minutes that the child reported compared with the child's BMI.

### *Conclusion*

The data collected through this study and the participation of the children and their parents/guardians shows that there is a need for and an interest in more research to be conducted about childhood obesity and physical activity of children. This growing health problem requires more attention of pediatric health care providers and parents/guardians alike.

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*CHAPTER I*

## Introduction

*Defining the Problem*

Childhood obesity is becoming an epidemic in North America and around the world (Deckelbaum & Williams, 2001). Obesity is second only to smoking for contributing to total mortality, and it is estimated that \$117 billion will be spent annually for health care costs related to this problem (Fitzgibbon & Stolley, 2004). A study in 2001 approximated that 22 million children were overweight worldwide, with numbers in the United States doubling over the past three decades. The problem affects children from preschool into adolescence, all racial and ethnic groups (Deckelbaum, et al., 2001) and all socioeconomic classes (Ebbeling, Pawlak & Ludwig, 2002). Girls are more affected than boys (Deckelbaum, et al., 2001). At least 11% and possibly as many as 25% of U.S. children and adolescents are overweight, depending on the definition of overweight that is used (Hill & Trowbridge, 1998).

*Health Consequences*

Obesity is one of the most serious health problems facing the youth of the United States, and evidence suggests that the problem is worsening rapidly. All indications are that the current generation of children will grow into the most obese generation of adults in U.S. history (Hill, et al., 1998). Childhood obesity is a multisystem disease with physical and psychological effects (Ebbeling, et al., 2002).

Disease processes that were once known as adult health problems are now increasing in the pediatric population. Cardiovascular disease risk factors such as hypertension, dyslipidemia, chronic inflammation, increased blood clotting tendency,

endothelial dysfunction, and hyperinsulinemia have been identified in children as young as five years of age. Type 2 diabetes is also prevalent in the pediatric population, accounting for as many as half of all newly diagnosed cases in some populations, and bringing with it a host of other health complications. Pulmonary disorders such as sleep apnea, asthma, and exercise intolerance are increasingly reported in children (Ebbeling, et al., 2002). Obesity related liver disease in children is associated with hepatomegaly from deposition of excess fat in the liver cells (Coulston, 2003). Orthopedic and skeletal problems, such as osteoarthritis, have been identified in overweight children. Adolescent girls have reported menstrual abnormalities (Rich, DiMarco, Huettig, Essery, Andersson & Sanborn, 2005).

Overweight children are stereotyped as unhealthy, academically unsuccessful, socially inept, unhygienic, and lazy, which promotes development of a negative self image. This can lead to low self esteem (Ebbeling, et al., 2002) and increased rates of depression (Grey, Berry, Davidson, Galasso, Gustafson & Melkus, 2004) which is exhibited through sadness, nervousness, eating disorders, and high risk behaviors. Some of these disease processes limit the child's activity tolerance, therefore creating an ongoing cycle of poor health, increased weight gain and decreased activity (Ebbeling, et al.).

### *Contributing Factors*

Body weight is determined by numerous mechanisms including genetics and early life factors, dietary intake, family and home environment, medications, school environment, and physical activity. Any of these factors can increase food consumption or decrease energy expenditure enough to contribute to obesity (Ebbeling, et al., 2002).

Maternal obesity may increase the transfer of nutrients through the placenta which result in permanent changes in appetite, neuroendocrine functioning, and energy metabolism. Children who were bottle fed as infants tend to have a higher rate of childhood obesity than those who were breast fed. Dietary intake of foods that are high in fat, sugar, and carbohydrates, coupled with low nutritive value contribute to the increasing childhood obesity rates. Large portion size and availability of fast food are also related (Ebbeling, et al., 2002).

Parent-child interactions and the home environment can affect behaviors increasing the risk of obesity. Trends of eating out in restaurants and more watching of television contribute to the problem. Parental support of children is associated with increased participation in physical activity by the child. School contribution to the rising weight crisis is due to decreased time spent on physical education, lack of playground facilities, and lunch programs without healthy choices (Ebbeling, et al., 2002). The most commonly used medications associated with weight gain in children are corticosteroids, anticonvulsants, and antipsychotics (Schwimmer, 2004).

Lack of physical activity and excessive inactivity are major components of childhood obesity. Television viewing and playing video and computer games are particularly at fault. Watching television is thought to not only decrease physical activity, but also encourages poor dietary habits by displaying commercials for unhealthy food choices and by providing the opportunity to passively consume excessive amounts of energy dense foods. A study by Ebbeling, et al. showed an increased risk for childhood obesity of 12% per hour of television watched daily (2002).

*Importance in Nursing*

As primary care providers working with families, nurse practitioners will frequently encounter obesity both in children and adults. This requires education and awareness of the growing problem. Treatment of obesity in pediatric patients can prevent the lifelong health consequences associated with chronic obesity.

“Healthy People 2010” is the list of health objectives for the United States set by the U.S. Department of Health and Human Services. Obesity is listed as one of the major problems to be addressed in order to improve the health status of the country. There is a specific goal set to reduce obesity in children and adolescents ages six to 19 years old from the baseline of 11% to 5% by the year 2010 (2001).

## CHAPTER II

### Review of Literature

#### *Theoretical Framework*

According to Higgins and Moore (2000) micro-range theory is defined as a set of working hypotheses that test health-related person-environment interactions. This theory supports the use of hypothesis testing as a sufficient theoretical framework when the hypothesis is directly related to nursing practice. Therefore, the results of research studies conducted under micro-range theory, also known as practice theory, allow nurse practitioners to utilize this gained knowledge as an addition to their daily practice.

The hypothesis for this research study was that parents of normal weight children are more aware of their child's activity level than parents of overweight children. By testing this hypothesis nurse practitioners can gain valuable insight into a potential contributing factor to childhood obesity.

#### *Weight Measurement Tools*

There are several methods used to measure weight and screen for overweight. Inconsistencies with the use of different methods lead to difficulty when comparing the data among studies. Within one type of measurement, use of inconsistent parameters to define obesity also decreases the ease of comparing results (Guillaume, 1999).

Some methods of body fat measurement use scans to differentiate between fat mass and fat-free mass. Computed tomography and magnetic resonance imaging may provide more precise results, but are costly compared to body mass index (BMI) measurements (Hall, et al., 2006). Dual energy x-ray absorptiometry measures the amount

of photon absorption into the different types of body tissue. This procedure exposes the child to radiation and is also more costly than BMI measurement (Goran, 1998).

Densitometry is a method of body fat measurement using water displacement in a tank. This is not practical in the pediatric population, as it may be scary and requires patients to exhale all the air from their lungs and then hold still under water for several seconds. The Bodpod is a similar method but uses air displacement instead. It may have increased ease of use in the pediatric group because it is simpler, quicker and does not require submersion. Both of these procedures are much more costly than measuring BMI (Goran, 1998; Styne, 2005).

Bioelectrical impedance analysis measures body fat based on the electrical resistance of conductive tissues in the body to a tiny current. This procedure may be difficult with children because it may be scary. Another limitation is that the results actually yield the amount of total body water, which must be calculated in to fat-free mass (Goran, 1998).

Skin fold measurements, while simpler and less invasive than some of the other methods discussed may not be accurate measures of body fat. Studies have been unable to cross- validate results gained from this method (Goran, 1998).

Body mass index (BMI) is thought to be the best currently available estimate of fatness. BMI should be used only as a screening tool and not a diagnostic tool. Although quite reliable, there are limitations to using BMI in the measurement of overweight in children for several reasons. First, body composition varies according to age, gender, and ethnic differences. Second, body composition can change while weight and BMI stay the same, for instance during a time of increased physical activity. Third, BMI and fat mass



are not strongly correlated and wide variations in body fat can occur with the same BMI (Hall & Cole, 2006) because this measurement does not differentiate between fat mass and fat-free mass (Styne, 2005). Finally, the extent of health risks does not solely correlate to total fat mass, but instead is closely correlated with intra-abdominal or visceral fat (Hall, et al.).

The Center for Disease Control (CDC) considers BMI as a reliable indicator of body fatness for most children (2006). Although BMI does not directly measure body fat, it can be considered a strong alternative to direct measurement such as underwater weighing and radiographic testing. BMI is an inexpensive and easy to perform method of screening for unhealthy weights that can lead to future health problems.

BMI must be calculated according to gender and age of the child. The BMI is then graphed on the gender-appropriate growth chart from the CDC in order to obtain the percentile ranking. Percentiles are the most commonly used indicator to assess size and growth patterns in children. The percentile indicates the relative position of the child's BMI number among children of the same gender and age. The CDC defines weight in children according to a four category system. Underweight is defined as a child who ranks in less than the fifth percentile. Healthy weight is defined as a child who ranks in the fifth to less than the 85<sup>th</sup> percentile. At risk for overweight is defined as a child who ranks in the 85<sup>th</sup> to less than the 95<sup>th</sup> percentile. Overweight is defined as a child who ranks in the 95<sup>th</sup> percentile or higher (CDC, 2006).

### *Parental Perceptions*

The literature review revealed that general health, dietary intake, physical activity, screen viewing and inactivity, and weight status are aspects of parental perceptions that have been studied.

### *General Health*

Parents' perception of their children's general health has not been well studied as evidenced by the lack of research found in the literature search. One study was found and it showed that 81% of a group of mostly Hispanic parents with overweight children thought their child was healthy. Some offered further explanation and of these, 83% defined their child's wellness as a lack of illness (Rich, et al., 2005).

### *Dietary Intake*

Parental perception of dietary habits in children was not a common theme in the literature review. A study by Moag-Stahlberg, Miles, and Marcello (2003) questioned 615 parents of children in the Chicago area who were grouped into two categories by age- "younger children" and "older children." They found that parents overestimated hunger as the main motivator for eating in young children and underestimated boredom or depression as a motivator. It was also suggested that these parents underestimated the amount of food eaten while watching television or playing computer and video games as well as the intake of after dinner snacks. Parents also have misconceptions about the food choices their older children make while not at home. Parents reported that the kids were not purchasing many meals or snacks except for school lunches while the kids stated that they purchase food from a variety of places, such as vending machines or snack bars (2003). In another study, parents in Australia shared that they believe their

second and fifth grade children know which foods are healthy but they may not understand the consequences of making unhealthy selections (Hesketh, Waters, Green, Salmon & Williams, 2005).

### *Physical Activity*

While activity in the overweight pediatric population has been frequently studied, the perception of the parents on their overweight child's activity level has not been thoroughly studied. The literature search did not lead to any reports on this aspect of children's activity level. The previously mentioned study in Australia shows that parents' perception of playgrounds being unsafe for children limits the amount of outdoor physical activity that children receive (Hesketh, et al., 2005).

### *Screen Viewing and Inactivity*

The literature contains several studies that discuss screen viewing, such as television watching, and playing computer and video games, as well as inactivity in overweight children. The Rich, et al. study showed that parents were clear about the amount of television their child watched daily and the need to limit the number of hours (2005). This study did not have a control against which to compare the parents' perceptions, however, such as keeping a log or asking the children how many hours were spent screen viewing. One study including parents from various socioeconomic levels and geographic areas found that children between the ages of two and five years generally spend more than three hours daily watching television, which exceeds the recommendation by up to 100%. These same parents state they know habits are established during the preschool years, but this amount of television viewing is not a problem because it increases their child's activity level by allowing them to participate

with interactive shows. Further, these parents did not recognize screen viewing as a risk for obesity and state they are not concerned about the amount of television being viewed (Meizi, Irwin, Sangster-Bouck, Tucker & Pollett, 2005). This article did not lay out the recommendations for television viewing in children. The Hesketh, et al. study supports the thought that parents know television viewing discourages physical activity, but found that these same parents believe some computer games or television shows to be educational. These activities are “brain healthy” instead of “body healthy” and therefore are acceptable activities (Hesketh, et al., 2005).

### *Weight Status*

There were several studies found reflecting parental perception regarding weight status of their children. A study by Jeffery, Voss, Metcalf, Alba, and Wilkin found that out of 277 parents surveyed only a quarter of the parents recognized overweight in their children. In the obese group 90% of the parents considered their child’s weight to be “about right.” Parents were more likely to describe daughters as overweight than sons (2004). The Rich, et al. study, which included only children at or above the 95<sup>th</sup> percentile for weight, asked parents if they were concerned about their child’s weight. Of the 76 parents surveyed, half did not express concern about the child’s weight. Reasons given for this lack of concern included: they did not believe their child was overweight, they thought their child’s overweight was due to a familial trait, they thought their child would outgrow their overweight, they felt their child was eating well and was physically active, they believe that their child “looked fine”, or they believed that their child was tall or big boned. This study reported no significant difference in concern about weight of sons and daughters (2005). A study by Etelson, Brand, Patrick, and Shirali (2003)

surveyed 83 parents who were seen in a pediatric clinic serving 70% Caucasian families about their four to eight year old child's weight status. Of the group with overweight children, only 10.5% of the parents recognized the problem, although all parents stated that overweight is something to be concerned about as a health risk. All of the parents were asked to rank several health risk factors in order of concern in their child. The factors included were overweight, history of sunburns, late toilet training, the presence of a classmate with AIDS, being exposed to passive tobacco smoke in the home, prolonged television watching, and reluctance to read aloud in school. Of these, overweight was ranked second only to tobacco smoke exposure with no difference noted between parents of overweight children and the rest of the parents. This study did not assess the reasons for the misperceptions (Etelson, Brand, Patrick & Shirali, 2003). A study found that only 1.9% of parents with overweight three to five year olds and 17.1% of parents with obese children in the same age group identified the problem. Ethnic background was not given as a variable in the study results (Carnell, Edwards, Croker, Boniface & Wardle, 2005).

### *Readiness to Change*

A study by Rhee, DeLago, Arscott-Mills, Mehta, and Krysko-Davis (2005) examined parental readiness to make changes to help their children lose weight. This group stated that their study was the first and only to date that researched this aspect of childhood obesity, and the literature review supported this. The Prochaska transtheoretical model (as cited in Rhee, et al., 2005) was the tool applied and it was used for the first time to examine a parent's readiness to change behaviors for his or her child.

The study was performed in a pediatric practice in Philadelphia and included 151 parents who were 95% African American or Latino, and mostly female. The majority

had a high school degree or less and was on public assistance. These participants were selected because their children were between the ages of two and 12 years old and were considered overweight or at risk for overweight with a BMI in the 85<sup>th</sup> percentile or higher for age and gender.

A self-administered questionnaire was used to determine the parents' perception of the child's weight, as well as their perception of their own weight, their current practices regarding healthy behaviors, and their future intentions for changing behaviors. A Likert scale was used for the parents to judge weight status from "very underweight" to "very overweight." Questions were asked to determine if parents thought that obesity in general was a health problem, or if their child's weight was a problem. Additional questions included information regarding food choices, activity level, and whether or not their doctor had mentioned the child's weight as a problem.

Further questions involved the parents' stage of readiness to change. These questions asked about "how likely they were to make changes in the next six months" and if they were "thinking about making lifestyle changes to help their children lose weight." An algorithm was used to determine parents' stage of change based on their responses. Parents were then placed into categories such as the preparation/action stage of change, the contemplation stage of change, and the precontemplation stage of change, based on Prochaska's transtheoretical model (as cited in Rhee, et al., 2005).

The results showed that while 62% of the children had a BMI of at least the 95<sup>th</sup> percentile, 44% of the parents were in the precontemplation stage. Parents in the contemplation stage totaled 17%, with 38% in the preparation/action stage of change. Factors associated with being in the preparation/action stage were having a child eight

years of age or older, believing their own weight or their child's weight was above average, and perceiving that their child's weight was a health problem.

### *Research Tools*

During the literature review, several tools were found that determined parents' perception of their child's weight status. In general there were two types of tools used. One type of tool was a questionnaire, and several studies used this format to obtain information via phone surveys, internet surveys, focus group discussions and written surveys. The other type was a visual tool. A visual analog scale was used which allowed the parent to mark their child's weight on a line with one end labeled "extremely underweight" and the other "extremely overweight" (Etelson, et al., 2003). Another visual tool used pictures to rate activities and foods as healthy or unhealthy (Hesketh, et al., 2005). A third tool displayed pictures of different body types and asked the parent to choose the one which matched their child's (Edmunds, 2005).

### Conclusion

The review of literature revealed a large body of research regarding pediatric obesity. As discussed throughout the chapter, the causes of pediatric obesity and the potential future consequences of this health problem have been studied. Research showed that parents' readiness to make behavior changes depended on the perception of their child being overweight. However, there has been no research to show whether or not parents perceive their children as overweight and underactive. This knowledge gap lead the researchers to ask: "Are parents aware of the activities their school aged children engage in during the time they get out of school until they go to bed? Do parents perceive their overweight children to be overweight?" A research study looking at these

factors will increase the small amount of knowledge health care providers have in this growing area of health care. The results can assist family nurse practitioners in treating this health care epidemic.



### CHAPTER III

#### Methods

##### *Study Design*

A descriptive correlational design was used to answer the following research question: Are parents of normal weight children more aware of their child's activity level than parents of overweight children? The researchers were interested in learning if there is a relationship between the child's weight status and parent's perception of their child's activity level. This information was ascertained by comparing answers given by parents/guardians and their children when asked questions about the child's activities.

Based on the definition that "the study has been conducted after variations in the independent variable have occurred" the study is a nonexperimental, correlational design (Polit & Beck, 2004, p. 188). The dependent variable for the study is the child's weight status and the independent variable is the parent perception of activity level.

##### *Sampling*

This study used nonprobability sampling to obtain a convenience sample from children who attend a church in Canton (Polit & Beck, 2004). The inclusion criteria for the study were age of the child and the measurement of height and weight being taken (Polit & Beck, 2004). The parent/guardian of children six to twelve years of age who attend the church were approached about participating. There was no gender, socioeconomic or racial inclusion criteria.

##### *Setting and Procedure*

The data were collected in a church in Canton, Michigan. The parish secretary/event planner was asked to identify appropriate families for the study based on

the age requirement set forth. She then provided these families with a copy of the research introductory letter (Appendix E) and provided them with information about the dates of the study and in what room the study would be conducted. She also told them “If you are interested in participating in the study, or would like more information about the study, please proceed to the designated room after mass”.

The designated room was a quiet, private place for parents/guardians and their children to be seated with the researchers. There was an opportunity for any questions to be answered by the researchers before obtaining informed consent.

Once parents/guardians gave consent (Appendix H) and the children gave assent (Appendix F) the information collecting began as follows. The children had their height and weight measured. The parents/guardians were asked to answer questions about demographic data including their age, ethnicity and gender (Appendix A), as well as the same information about their child (Appendix G).

Each parent/guardian was asked to answer questions (Appendix B) about how many hours their child spent doing certain things, such as watching television, riding their bike, or playing games the previous day. A blank space was provided for them to write their answers in minutes and hours. The next section of the parent’s tool consisted of two Likert-type scales asking about their child’s weight status and activity level with five answer choices ranging between two extremes.

The children were also asked verbally (Appendix C) to self report how much time they spent during the same time frame doing the same activities. They were asked to answer by pointing to the appropriate location on a 10cm visual analog scale with one end being defined as “no time” and the other end being defined as “a lot of time.”

The children were given a pedometer and asked to wear it the day after meeting with the researchers at the church during the after school hours. “After school” is defined for this study as the time from when the child gets home from school until they go to bed for the night. The child and parent/guardian were given instructions on the use of the pedometer. The parent/guardian was asked to write the total number of steps recorded on the pedometer on a self addressed stamped postcard (Appendix D) and mail it to the researchers.

The study required about 10 minutes of time during data collection. The participants received a \$5 gas card as compensation for their time and the child was allowed to keep the pedometer.

After obtaining the child’s height and weight, their BMI was calculated using the CDC BMI calculator. This was accessed on the internet at [cdc.gov](http://cdc.gov) and required the researcher to input height and weight in order to provide the BMI.

The CDC’s definition of overweight and not overweight is based upon a percentile system. In order to calculate which percentile a child’s weight falls into, his or her BMI should be plotted on a graph based on age and gender. Therefore, to form the two groups in the study the children’s weight percentiles were calculated. Any child whose weight fell under the 95<sup>th</sup> percentile was placed in the normal weight group and any child whose weight fell at or above the 95<sup>th</sup> percentile was placed in the overweight group. This allowed the formation of the two study groups for use in data collection to answer the research questions.

### *Instrument Development*

While performing the literature review, the researchers assessed many research instruments used in other studies. None of these tools matched the needs of this research study; therefore the questionnaires used in this study were designed by the researchers to directly obtain the desired information. The questions were designed by the authors of the study to elicit specific information using commonly accepted statistical measurements such as the analog scale and Likert-type scale.

All questionnaires were internally consistent in that they were presented to each parent/guardian and child under identical circumstances and were only administered one time. The tools were examined by a statistician and two elementary school teachers to ensure content validity and age appropriateness for the study population before being used with the children and parent/guardians. The researchers also piloted the questionnaires before beginning data collection with children in the age range of the study and found the tools to be age appropriate. Therefore no changes were made to the tools after the pilot testing.

### *Data Analysis*

The SPSS package was used for data analysis with the help of Brady West, MA, statistician and computer system consultation at the University of Michigan-Flint and University of Michigan-Ann Arbor. The type 1 error for this study was set at alpha 0.05.

Descriptive statistics were used to report the demographic findings. Gender and ethnicity are nominal data. The mode and percentage for gender and ethnicity in the children and parents/guardians were analyzed. Age is ratio data and the data were analyzed for the mean and standard deviation of the children and parents/guardians.

The amount of time spent doing certain activities as reported by the parent/guardian and the child is ratio data and was analyzed to answer the following two questions: how do the parent's answers differ from their child's answers and how do the parent's answers differ between the overweight child and normal weight child groups?

Before analyzing the data, the amount of time reported in minutes by the parent/guardian and the amount of time reported in centimeters on the visual analog scale by the child were converted in order to be comparable. The total number of minutes reported by the parent for all activities was considered as the gold standard. Then the total number of centimeters reported by the child across all activities was recorded, and the proportion of this total due to each activity was calculated. These proportions reported by the children were then multiplied by the total number of minutes reported by the parent to obtain a child-level estimate of the amount of time spent in a given activity. This enabled comparisons of the child reports with the parent reports.

Then, in order to answer the above questions a paired sample *t*-test was performed on the data for each activity comparing the parent's answer to their child's answer. Then a two sample *t*-test comparing the answers from parents of normal weight children and the parents of overweight children was performed.

The data from the Likert-type scales about the child's weight status and activity level is ordinal data treated as interval. The researchers used descriptive statistics to analyze the data for a percent and mode.

The pedometer readings are ratio data and descriptive statistics were used to analyze a mean and standard deviation. Then a test of homogeneity of variances was run to test a relationship between the pedometer reading and the parent's answer to the

Likert-type scale reporting the child's activity level. This allowed the researchers to assess any relationship between the child's actual activity level and the parent's perception of their activity level.

## CHAPTER IV

### Results

#### *Demographic Data*

The final study sample consisted of 59 normal weight children and their parent/guardian and five overweight children and their parent/guardian.

Of the 64 children in the study 37 (57.8%) were female and 27 (42.2%) were male. There were four ethnic groups represented in the study: two (3.1%) were African American, three (4.7%) were Asian/Pacific Islander, 58 (90.6%) were Caucasian, and one (1.6%) was Hispanic (Figure 1). Per the study requirement the children ranged in age from six to 12 years, with a mean of 9.36 years and standard deviation of 1.72.

The total sample contained more female parents/guardians (n= 44, 68.8%) than male parents/guardians (n=20, 31.3%). There were two ethnic groups represented: two (3.1%) were Asian/Pacific Islander and 62 (96.9%) were Caucasian. The age of the parent/guardian ranged from 33 years to 55 years with a mean of 41.7 years and a standard deviation of 3.77.

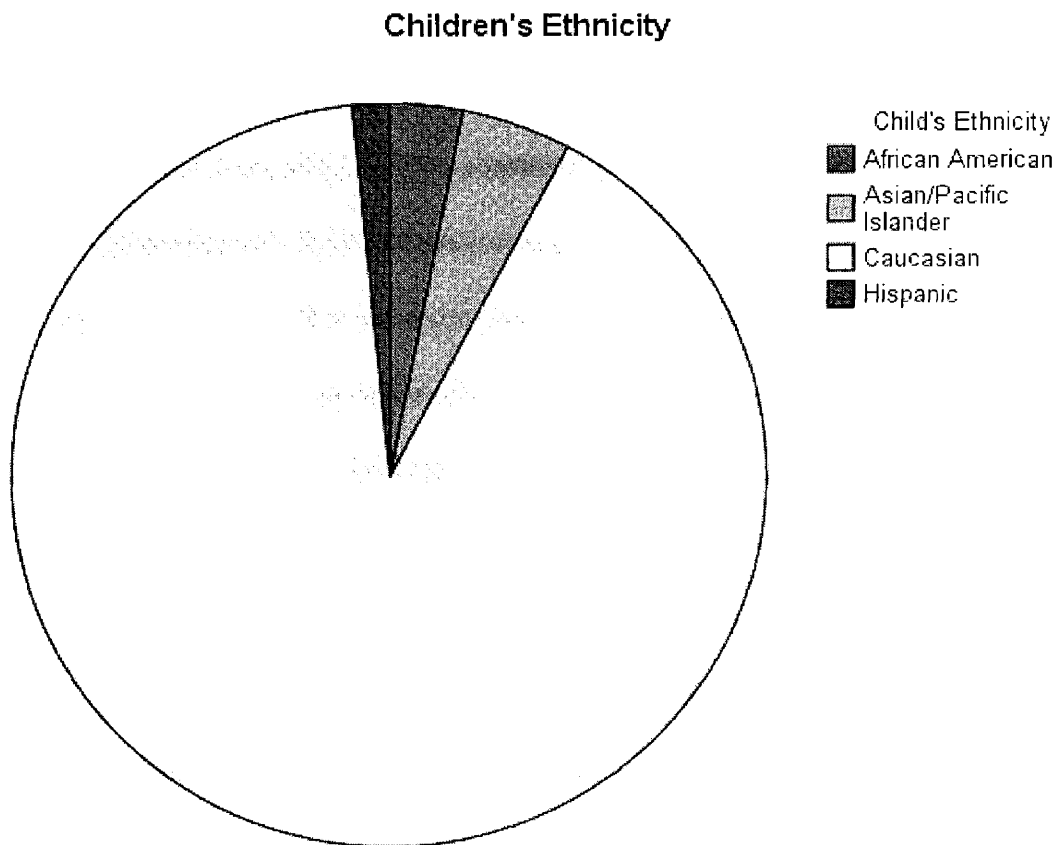
#### *Weight Status and Activity Level*

The children's mean height was 55.67 inches with a standard deviation of 4.49. The children's mean weight was 79.76 pounds with a standard deviation of 23.15. The children's mean BMI was 17.79 with a standard deviation of 3.00. The children's mean BMI percentile was 59.52% with a standard deviation of 27.06.

The response rate for the parents/guardians on the Likert-type question was 56 out of 64 (87.5%). When asked about their child's weight status four of the 56 respondents

**Figure 1: Parent/guardian's Report of Child's Ethnicity**

**N=64**





(6.3%) reported their child as underweight, 50 (78.1%) reported their child as normal, and two (3.1%) reported their child as overweight (Figure 2). When asked about their child's activity status four of the 56 respondents (6.3%) rated their child as very inactive, four (6.3%) rated their child as inactive, 21 (32.8%) rated their child as average, 15 (23.4%) rated their child as active, and 12 (18.8%) rated their child as very active (Figure 3).

There were 64 postcards with pedometer readings returned. The mean number of steps taken by the children was 3757.14 with a standard deviation of 2208.77.

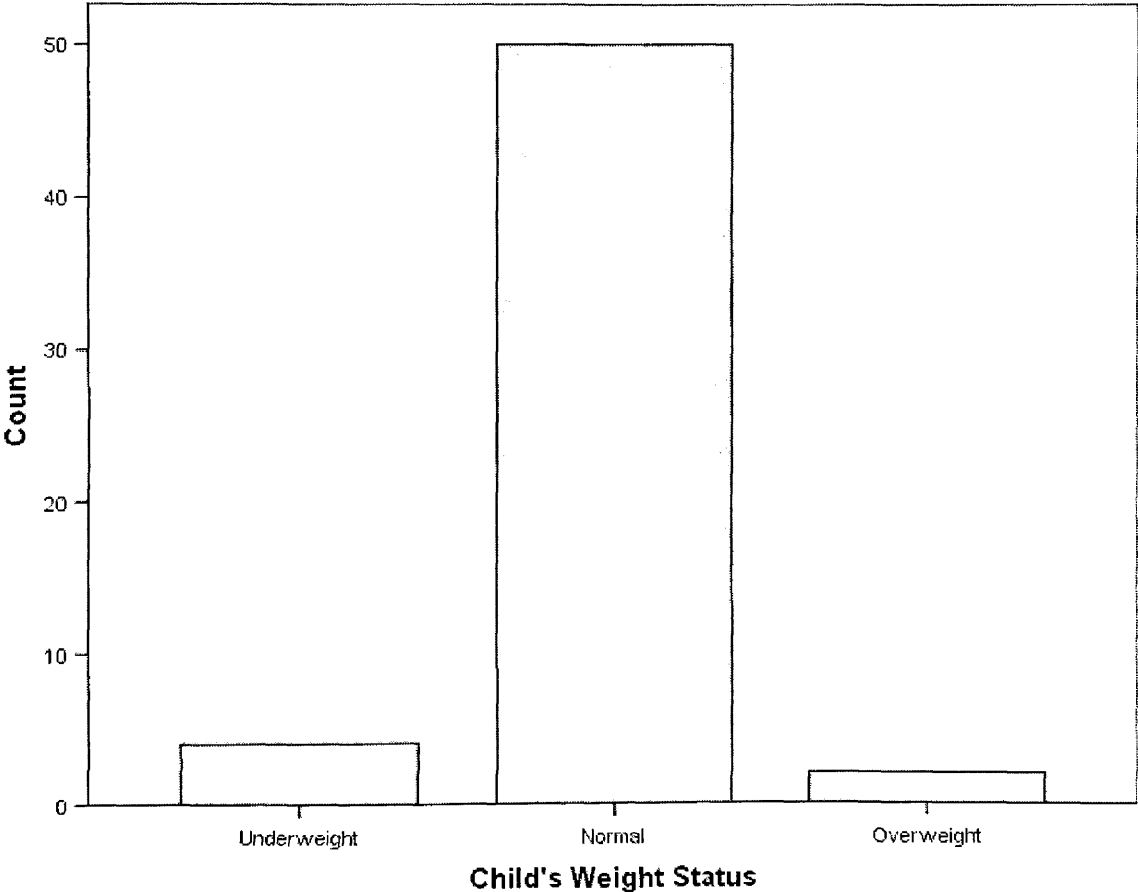
#### *To What Extent Do the Parent/guardian's and Child's Answers Differ?*

The paired sample *t*-test reveals the difference in minutes reported on each activity between the parent/guardian and child. The mean difference in minutes reported for watching TV or movie was 35.93 minutes with a standard deviation of 86.48 minutes,  $t= 3.30$ ,  $df= 62$ ,  $p= .00$ . The comparisons between minutes reported for playing video or computer games, doing homework or reading, and playing with no physical activity were found to be statistically significant. The comparison between playing with physical activity was not found to be statistically significant (Table 1). The mean differences with negative numbers reveal areas where the children reported their time spent doing an activity as higher than what their parent/guardian reported. The mean differences reported as positive numbers reveal areas where the parent/guardian reported higher amount of time spent on the activity than what the child reported.

A comparison between how the parent/guardian perceived their child's activity level on the Likert-type question was made with the child's actual reported number of pedometer steps. The four children who were rated very inactive by their parent/guardian

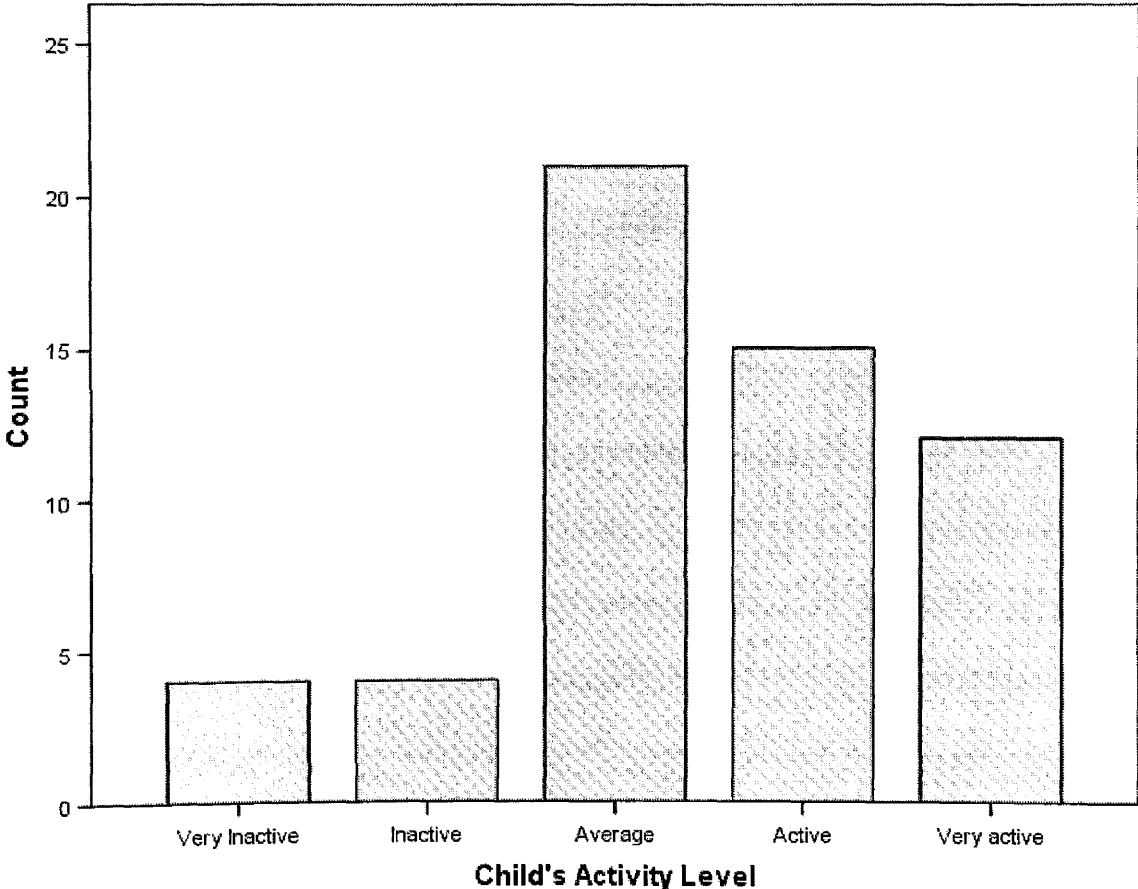
**Figure 2: Parent/guardian’s Report of Child’s Weight Status**

**n= 56**



**Figure 3: Parent/guardian’s Report of Child’s Activity Level**

**n=56**



**Table 1: Difference in Minutes Reported by Parent/guardian and Child****n= 63**

	Mean	Standard Deviation	Standard Error Mean	t	df	Significance (2 tailed)
Minutes Watching TV or Movie	35.93	86.48	10.90	3.30	62	.00
Minutes Playing Video or Computer Games	-28.69	66.78	8.41	-3.41	62	.00
Minutes Doing Homework or Reading	-27.31	58.19	7.33	-3.73	62	.00
Minutes Playing (Physical Activity)	-19.16	82.47	10.39	-1.84	62	.07
Minutes Playing (No Physical Activity)	39.24	80.82	10.18	3.85	62	.00

*Significant at the level of .05*

had a mean pedometer reading of 4174.25 steps with a standard deviation of 2383.84 steps. The four children who were rated inactive by their parent/guardian had a mean pedometer reading of 1936.50 steps with a standard deviation of 1203.15 steps. The 21 children who were rated as having an average activity level by their parent/guardian had a mean pedometer reading of 3395.81 steps with a standard deviation of 1380.52 steps. The 15 children who were rated as active by their parent/guardian had a mean pedometer reading of 2990.67 steps with a standard deviation of 1698.97 steps. The 12 children who were rated as very active by their parent/guardian had a mean pedometer reading of 5721.00 steps with a standard deviation of 599.69 steps (Table 2). A Levene test of homogeneity revealed no statistical difference in the variance reported across the different groups; statistic= 0.946,  $df_1 = 4$ ,  $df_2 = 51$ ,  $p = .45$ . However an ANOVA revealed that there is a significant difference in how parents/guardians rate their child's activity compared with the pedometer results across the five groups of activity level ( $F = 6.21$ ,  $p = 0.00$ ). A multiple comparison Tukey HSD reported no significance between the rating "very active" by the parent/guardian and the actual number of steps taken by the child. There was a significant difference reported between the other activity ratings and the actual number of steps taken by the child (Table 3).

*To What Extent Do the Answers of Parents/guardians of Overweight versus Normal Weight Children Differ?*

Due to unequal sample size between the normal weight ( $n = 59$ ) and overweight ( $n = 5$ ) groups neither nonparametric nor parametric testing would be statistically powerful enough to report a difference between the two groups. Therefore the results of

**Table 2: Number of Pedometer Steps by Activity Group****n= 56**

	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Standard Error</b>
Very Inactive	4	4174.25	2383.84	1191.92
Inactive	4	1936.50	1203.15	601.57
Average	21	3395.81	1380.52	301.26
Active	15	2990.67	1698.97	438.67
Very active	12	5721.00	2077.39	599.69
Total	56	3736.91	1996.16	266.75

**Table 3: Very Active Rating Compared with Other Categories of Activity****n= 56**

<b>Activity Level</b>	<b>Activity Level</b>	<b>Mean Difference</b>	<b>Significance</b>
Very Active	Very Inactive	1546.75	0.519
	Inactive	3784.50	0.003
	Average	2325.19	0.004
	Active	2730.33	0.001

the paired sample *t*-test were inconclusive. Instead the researchers chose to test for any correlation between the child's BMI and the discrepancy between the number of minutes doing activities reported by the parent/guardian and the child. First the overall discrepancy of the reported number of minutes for all activities was tested for a relationship with the child's BMI. The Pearson's correlation revealed no statistically significant relationship;  $p = .16$  (Table 4). Then the same test was run with the discrepancy between the reported number of minutes watching TV or movies and the child's BMI. This also revealed no significant relationship;  $p = .20$  (Table 5). The test was also run with the discrepancy between the reported number of minutes doing homework and the child's BMI. There was no significant relationship reported;  $p = .97$  (Table 6). No relationship was found between the child's BMI and the difference in the number of minutes reported doing activity.



**Table 4: Correlation between Overall Discrepancy and BMI**

		Child Body Mass Index	overall_disc
Child Body Mass Index	Pearson Correlation	1	-.18
	Sig. (2-tailed)		.16
	N	64	63
Overall Difference in Reported Minutes	Pearson Correlation	-.18	1
	Sig. (2-tailed)	.16	
	N	63	63

**Table 5: Correlation between TV/Movie Discrepancy and BMI**

		Child Body Mass Index	tmov_diff
Child Body Mass Index	Pearson Correlation	1	.16
	Sig. (2-tailed)		.20
	N	64	63
TV/movie difference in Reported Minutes	Pearson Correlation	.16	1
	Sig. (2-tailed)	.20	
	N	63	63

**Table 6: Correlation between Homework Discrepancy and BMI**

		Child Body Mass Index	hw_diff
Child Body Mass Index	Pearson Correlation	1	.01
	Sig. (2-tailed)		.97
	N	64	63
Homework difference in Reported Minutes	Pearson Correlation	.01	1
	Sig. (2-tailed)	.97	
	N	63	63

*CHAPTER V*

## Discussion and Summary

*Discussion of Results*

The hypothesis of the study was that parents/guardians of normal weight children are more aware of their child's activity level than parents/guardians of overweight children. In answering the first research question, "To what extent do the parent/guardian's and child's answers differ?" the paired samples *t*-test revealed that parents/guardians were not aware of the amount of time spent by the child doing activities in four of the five categories about which they were asked. There was no difference between parent/guardian and child reports on minutes playing with physical activity, which is a general measure. Minutes reported watching television, playing computer and video games, and doing homework were significantly different when the parent/guardian's answers were compared with the child's.

The ANOVA revealed that parents/guardians who rated their child as very active were accurate at reporting their child's activity level; according to pedometer results, their children are very active. Parents/guardians who rated their children in the other categories were not accurate about their child's activity level and therefore have a different perception of their child's activity level. It may be possible that very active children are gaining their parents' attention by being so active.

In answering the second research question, "To what extent do the answers of parents/guardians of normal weight versus overweight children differ?" a Pearson's moment correlation showed no statistical relationship between the difference in the amount of minutes that the parent/guardian reported and the amount of minutes that the

child reported compared with the child's BMI. Therefore the answer to the question is that the weight category of the child is not a factor in how accurate the parent perceives their activity level. The parents/guardians of the normal weight children were no more accurate than the parents/guardians of the overweight children when reporting time spent doing activities.

Based on the results of this study, the researchers were unable to adequately test the hypothesis because of unequal sample size between the overweight and normal weight children. The study was designed with the intention of gaining insight into a potential contributing factor of childhood obesity. Using the micro-range theory, these study results could have provided nurse practitioners with information to apply in practice (Higgins & Moore, 2000).

#### *Validity of the Study Conclusions*

An article summarizing the findings of the Avon Longitudinal Study of Parents and Children sites several potential risk factors for childhood obesity. These include infant feeding behaviors, family characteristics and demographics, and lifestyle choices such as sleep, sedentary behavior, and dietary patterns. The authors also reiterate that there is information known about childhood obesity that requires more research to be done in order to get a handle on the growing problem. Such information includes that obesity is common in children and its prevalence is still increasing, risk factors for childhood obesity are not well established and that existing preventive strategies are largely unsuccessful (Reilly, Armstrong, Dorosty, Emmett, Ness, Rogers, Steer & Sherriff, 2005).

Another article reported that parental training is one important component of family-based behavioral treatment programs for childhood obesity. Parents are in a unique position as the main caregiver and can control the home environment to promote healthy behaviors in their children. Other important factors include nutrition, physical activity and self monitoring of weight by the child. The group also found that more research is needed to assess the more effective way to train parents (Stein, Epstein, Raynor, Kilanowski & Paluch, 2005).

The goal of this study was to discover a potential contributing factor to childhood obesity: parents not being aware of what amount of physical activity in which their child participates. As stated above, the results did not lead the researchers to conclude that all parents/guardians are accurate in their perception of their child's activity level. Therefore this may not be considered as a factor related to the prevention or treatment of obesity.

#### *Internal Validity of the Study*

“The extent to which it is possible to make an inference that the independent variable is truly causing or influencing the dependent variable and that the relationship between the two is not the spurious effect of an extraneous variable” is the definition of internal validity. The validity of a study can be threatened in the ways described below (Polit & Beck, 2004, p. 213).

The history effect occurs when external events take place concurrently with the independent variable and may affect the dependent variables (Polit & Beck, 2004). This may have occurred with the study because of the tremendous amount of attention that pediatric obesity has been receiving in the media of late. There was a story on a national news show about the need for larger car seats, as the children of this generation seems to

be outgrowing the current styles that are available. The Discovery Channel aired a show about childhood obesity and the effects it will have on the body as these children age. They performed age progressions to show parents how large their children will continue to be as adults if they do not make a change now. If stories of this type continue to make noise in the media, parents may become more aware and this could change the results of the research. Overall, the researchers did not predict having a large threat from internal validity issues. The study was designed to minimize this problem by having only one encounter with the participants.

Selection threat occurs when a convenience sample is used because there is no way to tell the extent to which the sample represents any population of children. This was a threat to the study because a convenience sample of children and parents/guardians who attended mass on the day of data collection were participants.

#### *External Validity of the Study*

Research studies can be compromised by various threats to external validity. External validity “refers to the generalizability of the research findings to other settings or samples.” The ultimate goal of a research study is not just to discover relationships among variables for a specific group of people at a certain point of time, but to be able to apply the findings to other groups to improve human health and well being (Polit & Beck, 2004, p. 217).

One aspect of a study’s external validity concerns the adequacy of the sampling design. The children who came into the church where the study was taking place provided an accessible population, a population that was available for a particular study. The target population is the total group of subjects about whom a researcher is interested,

and to whom results could reasonably be generalized. One way to increase the generalizability of a study is to select study participants from two or more sites that are sufficiently different in the representation of the whole population (Polit & Beck, 2004). The study design used one site, so the external validity may have been limited. If warranted, a future study could be done using the pediatric population at two or more sites whose population is varied.

Expectancy effects happen when subjects in a study behave in a particular manner largely because of the awareness of their participation in a study (Polit & Beck, 2004). This was a possibility when the children were wearing the pedometers. The parents, aware their children were wearing pedometers and that results will be used in the study, may have encouraged their children to participate in physical activities more than usual, giving a falsely high number of steps taken by the children. Encouragement was given to the parents and the children participating in the study to maintain their usual amount of physical activity to minimize this threat.

The interaction of history effect is the chance that results could be affected by some other external event to the study (Polit & Beck, 2004). There was a small chance that a parent in our study may have heard, read or watched something in the media related to activity levels and pediatric obesity and may have encouraged their child to increase their activity level.

#### *Study Limitations and Alternative Explanations for Study Findings*

There are several study limitations that the researchers noted throughout the process of performing the study. The first is that the children may have been more active because they knew their activity was being recorded the day they wore the pedometer.

Secondly, the parent/guardian of the child may have encouraged them to be more active on the day they were wearing the pedometer in order to better the study results. Also, because the children were young they may not have been concise in reporting the amount of time spent doing activities or may not have used the pedometer properly. Another limitation is the history effect as discussed above; the parents/guardians may already have been more aware of the childhood obesity problem due to the news reports on television and may already have changed their child's activities due to that knowledge. We also realized that the sample size and use of a convenience sample may have hindered the fact finding we otherwise may have attained. Lastly, due to the lack of ethnic diversity in the study, ethnicity cannot be considered a factor in analysis of the results of the study.

Due to the above mentioned limitations to the study, there are some alternative explanations for the study results that must be addressed. For instance, if the children's age is a factor, would different results have been reached with an older group of children involved in the study? Would the parent/guardian's rating of activity level been more accurate with the child's pedometer reading if older children had been used in the study, assuming that older children would use the pedometers more effectively? Another possibility is the fact that the study was conducted in a predominantly Caucasian, upper middle class church. Is the obesity rate lower in this area due to higher education and socioeconomic status? If a larger study sample with equal size of the two groups had been reached would the results have been different? Is there a possibility that the hypothesis would have been supported if the parametric and nonparametric statistics were able to be run as planned?

*Implications of the Study on Practice and Future Research Recommendations*

The intent was that the study results would give nurse practitioners a place to start with history taking and information collecting when evaluating relationships about childhood obesity and parent/guardian perceptions. Because the study results did not support the hypothesis the researchers are unable to give recommendations for use of the information in practice, but can ask practitioners to be aware of the problem of obesity and to make it part of their health promotion plan for these children.

Research recommendations include replication of the study with expansion in several areas. First a repeat study could be done to include a larger sample size. Also important would be to perform the same study in a different setting with a more diverse group of children or to test two different sites simultaneously. Another possible idea would be to run the same study on a different or expanded age group.

*Summary*

The data collected through this study and the participation of the children and their parents/guardians shows that there is a need for and an interest in more research to be conducted about childhood obesity and physical activity of children. This growing health problem requires more attention of pediatric health care providers and parents/guardians alike. The researchers are not discouraged because their hypothesis was not supported, but instead feel driven to seek further information on the topic. There is a large need for more information surrounding this area of health and wellness and the future health of our children depends on research being done currently.



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Appendix A  
Parent/Guardian's Demographic Data

**Please answer the following questions about yourself:**

**What is your gender?**

Female

Male

**What is your ethnicity?**

African American

American Indian

Asian/Pacific Islander

Caucasian

Hispanic

Other (Please specify) \_\_\_\_\_

**What is your age in years?** \_\_\_\_\_

ID number \_\_\_\_\_

Appendix B  
Parent/Guardian's Questionnaire

**Please answer the following questions about your child's activities and the amount of time spent yesterday from after school until he/she went to bed.**

**1. Watching television or movies?**

\_\_\_\_\_ Hours

\_\_\_\_\_ Minutes

**2. Playing video or computer games?**

\_\_\_\_\_ Hours

\_\_\_\_\_ Minutes

**3. Doing homework or reading?**

\_\_\_\_\_ Hours

\_\_\_\_\_ Minutes

**4. Playing (with physical activity- such as riding bike, basketball)?**

\_\_\_\_\_ Hours

\_\_\_\_\_ Minutes

**5. Playing (without physical activity- such as dolls, cards)?**

\_\_\_\_\_ Hours

\_\_\_\_\_ Minutes

**6. With other activities? (please specify activity and amount of time in the space below)**

**Please rate the following statements by marking the most appropriate answer:**

**My child's weight is status is:**

Very underweight

Underweight

Normal

Overweight

Very overweight

**My child's activity level is:**

Very inactive

Inactive

Average

Active

Very active

Thank you for taking the time to answer our questions.

ID number \_\_\_\_\_

Appendix C  
Children's Tool

Questions to ask the children verbally:

**I am going to ask you some questions about what you did after school yesterday. If you did the activity that I asked you about I will ask you to make a mark on the line to show how much time you spent doing the activity.**

1. **Did you watch television or a movie?** If so, please place a mark on the line to indicate how much time you spent watching television or a movie. This end (researcher points) is for a little and the other end (researcher points) is for a lot. You may mark anywhere on the line to answer the question (researcher runs finger along line).

**A little** \_\_\_\_\_ **A lot**

2. **Did you play any video or computer games?** If so, please place a mark on the line to indicate how much time you played video or computer games. This end (researcher points) is for a little and the other end (researcher points) is for a lot. You may mark anywhere on the line to answer the question (researcher runs finger along line).

**A little** \_\_\_\_\_ **A lot**

3. **Did you do homework or read?** If so, please place a mark on the line to indicate how much time you spent doing homework or reading. This end (researcher points) is for a little and the other end (researcher points) is for a lot. You may mark anywhere on the line to answer the question (researcher runs finger along line).

**A little** \_\_\_\_\_ **A lot**

4. **Did you do other things like ride your bike or play soccer?** If so, please place a mark on the line to indicate how much time you spent playing. This end (researcher points) is for a little and the other end (researcher points) is for a lot. You may mark anywhere on the line to answer the question (researcher runs finger along line).

**A little** \_\_\_\_\_ **A lot**

5. **Did you do other things like with your dolls or play a board game?** If so, please place a mark on the line to indicate how much time you spent playing. This end (researcher points) is for a little and the other end (researcher points) is for a lot. You may mark anywhere on the line to answer the question (researcher runs finger along line).

**A little** \_\_\_\_\_ **A lot**

Thank you for talking with us.

ID number \_\_\_\_\_



Appendix D  
Postcard for Pedometer Results

**Front will read:** Suzanne Robinson, RN, student NP  
Aimee Harman, RN, student NP  
Department of Nursing  
303 East Kearsley  
Flint, MI 48502

**Back will read:** Please copy (onto the space provided) the number of steps taken by your child as listed on the pedometer after he/she has worn it for one day from the time after school until bed. Please return by mail to the researchers. Please contact us if you have any questions. Thank you.

Suzanne Robinson, RN and Aimee Harman, RN  
Nurse Practitioner students, University of Michigan-Flint  
303 E. Kearsley  
Flint, MI 48502  
810-762-3420

ID number \_\_\_\_\_

**Number of steps** \_\_\_\_\_

Appendix E  
Introductory Letter

We would like to invite you and your child to participate in a study being conducted by Suzanne Robinson, RN and Aimee Harman, RN. We are nurse practitioner students in the masters program at The University of Michigan-Flint. Our research is looking at parents' perceptions of their child's weight and activity level. The research sample will include children ages 6- 12 years who are parishioners at St. Thomas A'Becket Church. The principle investigators, Aimee Harman and Suzanne Robinson, will meet with you and your child together.

Participation is voluntary and you may withdraw from the study at any time without penalty. If you choose to participate in our study you will be asked to stay after mass today for about 10 minutes. We will measure your child's weight and height. We will ask you to fill out a questionnaire that consists of about 15 questions as well as answer questions about your demographic data. We will also verbally ask your child several questions about their physical activities. Your child will be given a pedometer to wear tomorrow after school and we will give you a postage paid postcard to mail back to us with the results from the pedometer counter.

Any information you and your child provide will be kept confidential. No identifying information, such as name or birth date, will appear on any of the materials used in the study. All of the results will be analyzed as group data and no individuals will ever be identified. For your participation in the session today you will receive a \$5 gas card and your child may keep the pedometer.

If you are interested in participating, please follow the signs to the designated room after mass today.

Sincerely,

Suzanne Robinson, RN and Aimee Harman, RN  
Nurse Practitioner students, University of Michigan-Flint  
303 E. Kearsley  
Flint, MI 48502  
810-762-3420

Appendix F  
Child Participant Assent

I have been asked to take part in a study about my physical activity.

I will be asked to answer some questions that Suzanne and Aimee ask me.

I will be weighed and have my height measured.

I am taking part because I want to. I know that I can stop at any time I want to and it will be okay if I want to stop. Nothing bad will happen if I don't answer the questions.

---

Print your name

ID Number \_\_\_\_\_

Appendix G  
Children's Demographic Data

**Please answer the following questions about your child:**

**What is your child's gender?**

Female

Male

**What is your child's ethnicity?**

African American

American Indian

Asian/Pacific Islander

Caucasian

Hispanic

Other (Please specify) \_\_\_\_\_

**What is your child's age in years? \_\_\_\_\_**

ID number \_\_\_\_\_

## Appendix H

### Informed Consent for Parents

As graduate nursing students we are conducting a research project entitled “Are parents of normal weight children more aware of their child’s activity level than parents of overweight children?”

The purpose of this research is to compare parental perception of physical activity to an objective measure of physical activity of the children. The importance of this research is to determine if parental awareness of activity level and body weight are different with normal weight and overweight children.

This research will require you and your child to sit down for a brief interview including a written questionnaire to be filled out by you and a few verbal questions to be answered by your child, as well as instructions on the use of the pedometer. Height and weight measurements will then be taken of your child. Your child will be asked to wear the pedometer the day following this interview as a measurement of physical activity during the hours from after school until he/she goes to bed. You will be given a self addressed, stamped postcard on which to write the number of steps the pedometer had counted while your child wore it. Please mail this back to the researchers as soon as possible.

The in office interview will take approximately 10 minutes and writing on and mailing the postcard will take just a few moments. In addition to the interview, your child will wear the pedometer for several hours the following day.

Although you may not receive direct benefit from your participation, professional health care providers may ultimately benefit from the knowledge gained in this study.

There are no foreseeable risks to participating in the study. Participating in the research is completely voluntary and you may choose to withdraw at any time during the project without penalty.

There will be no cost to you for participating in this study. The researchers will provide the pedometer for the children to wear as well as a \$5 gas card to the parents who agree to participate in the study at the initial interview. The children will be allowed to keep the pedometer.

We will maintain confidentiality of all information obtained during the project. First names only will be used during the interview. You and your child will not be identified in any reports on this study.

Should you have questions regarding your rights as a research participant, please contact the Institutional Review Board:

Sally Conley, Administrative Assistant  
Office of Research  
530 David M. French Hall  
Flint, Michigan 48502  
(810) 762-3383  
Email: [sjconley@umflint.edu](mailto:sjconley@umflint.edu)

One copy of this document will be kept together with the research records of this study.

Also, you will be given a copy to keep.

Adult Participant Consent

I have read and have been informed of the information given above. The researchers have offered to answer any questions I may have concerning the study. I hereby consent to participate in the study.

NOTE: A signature of a parent or a guardian is required for a minor. A minor, in the State of Michigan, is a person under the age of 18 years.

ADULT PARTICIPANT OF RESEARCH

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Consenting Signature

LEGAL REPRESENTATIVE (if applicable)

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Consenting Signature

Relationship to Child Participant:  
  
\_\_\_\_\_

DATE:  
  
\_\_\_\_\_

Thank you for your interest in our study.  
Aimee Harman, BSN, RN and Suzanne Robinson, RN  
You may contact us at 810-762-3420  
Nursing Department, William S. White Building  
303 E. Kearsley, Flint, MI 48502

ID number \_\_\_\_\_

*IRB INITIAL APPROVAL*

From: Marianne McGrath

Cc: Suzanne Robinson, Aimee Harman

Subject: Initial Study Approval for [HUM00006439]

SUBMISSION INFORMATION:

Study Title: Aimee Harman/Suzanne Robinson- Are parents of normal weight children more aware of their child's activity level than parents of overweight children?

Full Study Title (if applicable):

Study eResearch ID: HUM00006439

Date of this Notification from IRB: 5/30/2007

Initial IRB Approval Date: 4/15/2007

Current IRB Approval Period: 4/15/2007 - 4/14/2008

Expiration Date: 4/14/2008

UM Federalwide Assurance (FWA): FWA00004969 expiring on 5/10/2009

OHRP IRB Registration Number(s): IRB00000248

NOTICE OF IRB APPROVAL AND CONDITIONS: The IRB Flint has reviewed and approved the study referenced above. The IRB determined that the proposed research conforms with applicable guidelines, State and federal regulations, and the University of Michigan's Federalwide Assurance (FWA) with the Department of Health and Human Services (HHS). You must conduct this study in accordance with the description and information provided in the approved application and associated documents.



*IRB AMENDMENT APPROVAL*

From: Marianne McGrath

Cc: Suzanne Robinson, Janet Barnfather, Aimee Harman

Subject: Amendment [Ame00006685] Approved for [HUM00006439]

SUBMISSION INFORMATION:

Study Title: Aimee Harman/Suzanne Robinson- Are parents of normal weight children more aware of their child's activity level than parents of overweight children?

Study eResearch ID: HUM00006439

Amendment eResearch ID: Ame00006685

Amendment Title: HUM00006439\_Amendment - Thu Jan 10 11:52:21 EST 2008

Date of this Notification from IRB: 1/18/2008

Date of Approval for this Amendment: 1/18/2008

Current IRB Approval Period: 4/15/2007 - 4/14/2008

Expiration Date: Approval for this expires at 11:59 p.m. on 4/14/2008

UM Federalwide Assurance (FWA): FWA00004969 expiring on 5/10/2009

OHRP IRB Registration Number(s): IRB00000248

NOTICE OF IRB APPROVAL AND CONDITIONS: The IRB Flint has reviewed and approved the amendment to the study referenced above. The IRB determined that the proposed research continues to conform with applicable guidelines, State and federal regulations, and the University of Michigan's Federalwide Assurance (FWA) with the Department of Health and Human Services (HHS). You must conduct this study in

accordance with the description and information provided in the approved application and associated documents, as amended.

*INITIAL SITE PERMISSION*

From: Floyd Brinley Thursday - January 25, 2007 3:41 PM  
To: Harman, Aimee  
Subject: Re: permission for research project

Aimee,

I have reviewed your project and agree to have it carried out here at the Canton Health Center pending IRB approval.

John Brinley

Medical Director

Canton Health Center

*AMENDED SITE PERMISSION*

**From:** "Patrick Casey" <frppkc@hotmail.com>  
**To:** "cathy hulett" <cathyhulett@ameritech.net>  
**Subject:** RE: Activity Study for kids at STAB  
**Date:** Tue, 15 Jan 2008 14:42:34 +0000

*HTML Attachment* [ [Scan and Save to Computer](#) ]

I give permission for this study, to be conducted by Aimee Harman, as a project for a Master's program, to be accomplished here at St. Thomas a'Becket Catholic Church. I understand that this survey will include parents with their children, and that no undo risk to the children is involved. God Bless, Fr. Pat.