5th Grader's Weight Status Perceptions

Alice Parker Hannifin

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FIFTH GRADER'S WEIGHT STATUS PERCEPTIONS

ALICE PARKER HAMILTON
Childhood obesity is rising and children’s perceptions of their weight status may be influential. This study analyzed the responses of 18 fifth grade students regarding their perception of their weight status. The participants included 12 girls and 6 boys obtained from a convenience sample at a rural elementary school. A positive correlation between weight perception and BMI was demonstrated ($r= .804, p< 0.01$), although some misperceptions were evident. The majority of students worried about their weight even if they were at a healthy weight. Overweight children responded that healthcare providers and parents are not talking to them about their weight. Participants recognized that diet and exercise are the main reasons for overweight in children. Health implications of life-long obesity are significant. This small study showed, as other studies,
that problems in weight perception are evident at the 5th grade level.
DEDICATION

To all of the graduate nursing students, nursing educators, and university library personnel at Southern Adventist University that are interested in making a difference in other’s lives through research and assisting those that are learning how to do research.
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First of all, I would like to thank God for the health, strength, and endurance that it took to complete this thesis. Without His hand upon me daily, and His answer to prayers for myself and for those interceding for me, this paper would not have been possible.

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Chapter 1
Fifth Grader’s Weight Status Perceptions

Background and Significance of Problem

Significant research is available showing a severe epidemic of overweight and obese children in the United States. The number of obese and overweight children continues to rise, not only in the United States, but internationally. There have been very few studies that show children’s perceptions of their weight, but there are studies on parents with obese children that have provided evidence that these parents are in denial of their own weight problems or those of their children’s. Since parent’s attitudes affect children’s attitudes, it is important to look at the child’s belief patterns in regard to his or her body mass index (Jefferson, 2006).

According to the Centers For Disease Control, 30% of children in the U.S. are affected by obesity. It has become second in the list of chronic illnesses for children (Centers for Disease Control, 2008). Some of the problems associated with obesity in children include high blood pressure, social and psychological issues, hyperlipidemia, and type two diabetes. Before we can intervene with effective programs for childhood obesity, it is necessary
to understand children's attitudes and perceptions of their weights (Berry, Savoye, Melkus, & Grey, 2007).

**Problem Statement, Research Purpose and Research Question**

The number of obese children in the U.S. is rising. Mental, social, and physical health is being adversely affected. Prior to eliciting a change in nutrition, physical activity, and behavioral patterns in children, their perceptions must be evaluated. Parents of these children may be in denial that their child is overweight, and that same difficulty may be influencing children in their perception of their weight.

In one study it was found that children's perception of their weight occurs prior to adolescence (Pinheiro & Giugliani, 2006). Since children's perceptions may be incorrect prior to adolescence, it is important to do studies at various ages to determine where possible conflicts in what is real and what is perceived begin to take root in the child's mind. There are cultural issues to consider with obesity as well. There has been very little study of the children's weight perceptions in the United States.

This study is being conducted to determine children's perceptions about their weight. The question to be answered
is "How do fifth grade children perceive their weight status?"

Definition of terms

Conceptual Definitions

Perceive is a term used to describe how an individual "thinks about and defines health related experiences" (Burns, Dunn, Brady, Starr, & Blosser, 2004, p. 188).

Weight status is defined in terms of weight for height, age, and gender; and it is typically classified through the use of body mass index charts. Classification will fall into the following four categories: underweight, if BMI is less than the 5th percentile; at risk of overweight, if BMI ranges between 85th and 94th percentiles; and obese, if BMI is at or above the 95th percentile (Centers for Disease Control, 2008).

Operational Definitions

For the purpose of this study, perceive is defined as how the 5th grade child views his or her weight status and related weight issues. This will be measured through the use of a 5th Graders Thoughts About Weight Questionnaire.

For the purposes of this study, weight status is defined by measurements of height, weight and calculation of body mass index using the Center for Disease Control growth charts. If the BMI ranges between underweight and at
risk BMI ranges, which are between 5th and 84th percentile, it will be categorized as a healthy weight.

Theoretical Framework

The cognitive developmental level of a child has a significant impact on a child’s perception of his or her weight status. Cognitive development is frequently used as the framework to determine a child’s comprehension of his or her health status or lack of health. In Piaget’s theory of cognitive development, the typical 5th grade child who is in the 10-12 year old age range, is in the cognitive developmental stage of concrete operations (Burns et al., 2004). Children at this stage need to see that illness is present in order to understand the illness. These children perceive health based on what is present at the moment. Children are developing their thought patterns and using previous experience in their decision making. Once a child moves into the teenage years, he/she can begin to conceptualize health issues better in the formal operations stage of cognitive development. A child will conceive and react to their health perception based on their developmental stage (Burns et al., 2004).

This study was designed with cognitive development in mind when developing the tool for the research study, and
in the interpretation of the children’s perceptions as being in the concrete stage of cognitive development.

Assumptions of Study

This study assumes that children have issues with the importance of their weight, and that the questionnaire accurately measures them. The assumption is made that misperceptions are part of the issue in children becoming and remaining overweight or obese.

Limitations of study

The study, conducted in a rural elementary school in southeast Tennessee, is limited in application to this area. The sample size was small, and a convenience sample was used. The only participants included in the study were 5th grade students. Children used a self-report questionnaire which relied on the children to answer the questions honestly. Each of these factors represents a limitation to the study.

Summary

There is significant research showing a rise in childhood obesity. There is uncertainty as to what American children’s perceptions are about their weight. The theoretical framework of the cognitive developmental stage of the fifth grader provides a method to use in tool development and in the interpretation of the children’s
perceptions. Assumptions about the misperceptions and concerns about children having issues with their weight are addressed. The limitations are included in this study of 5th grade students.
Chapter 2
Review of Literature

Delimitations

The search for relevant literature for this study began with searching the data bases of CINAHL, PubMed, Health and Wellness Resource, and MEDLINE. Terms used in the key word searches included “obese”, “children”, “perceptions”, and “attitudes”. Further searches were conducted on the Web through the use of Google with the same keywords used for the databases.


General Literature

In the search for general literature on how fifth grade children perceive their weight, a minimal amount was found. Information was retrievable that was related to the topic which included the number of overweight or obese children, future predictions of children’s weights, causes of overweight and obese children, a survey about what the kids think, the psychological and social aspects affecting children, parents’ influence on children, and the main goals for children with obesity. A brief summary of this
information and how it pertains to the research question is provided.

**Childhood Obesity Statistics**

The number of children that are overweight and obese is significant to this study because it indicates the magnitude of the problem. The number of overweight and obese children has increased three to four times from what it was twenty-five years ago (Centers for Disease Control.com). At least 29% of kids aged 6-11 and 17% of teenagers aged 12-19 are now thought to be overweight (Centers for Disease Control.com, 2008). The estimate is that about 50% of children in the United States will be overweight by the year 2010 (Wang & Lobstein, 2006). It is estimated that there are 50 million obese children, and 150 million overweight children worldwide (World Health Organization European Ministerial Conference on Counteracting Obesity, 2006).

**Overweight and Obesity In Minority Races**

All nationalities are at risk for obesity. Minority races have demonstrated greater potential for developing obesity (Eadie, 2007). Approximately 33 percent of African American children are obese, and 1 in 4 of those same children have signs of chronic illnesses (Eadie, 2007).
Causes of Children Being Overweight

Children may have misperceptions of their weight status by not being aware of how they gained weight. The causes of overweight and obesity in children are linked to poor nutritional choices, not enough physical exercise, and hereditary factors (U.S. Department of Health and Human Services, 2007). Socioeconomic factors may be a cause due to parents with low income having less time and money to develop healthy menus.

A Survey About What Children Think

Children’s perceptions regarding their weight status were surveyed in a study of 9-13 year old children performed by The Nemours Foundation (Brown, Birch, Teufel, & Kancherla, 2006). The study included 1168 participants. The participants spoke out about why there are increasing weight problems in children. Fifty-two percent of these children felt that there are an excessive number of children that are overweight. Their data show that they believe that children do not get adequate physical exercise (29%) and have poor nutritional choices (25%) (Brown, et al., 2006). These same children, about one out of four being overweight, reported that they do not have anyone talking to them about their weight (Brown, et al., 2006).
Psychological Issues And Parental Influence

Children who may or may not accurately perceive their weight status might have psychological and social issues. The effects on children from being overweight and obese have been documented to be a factor in a child’s perception of their weight. These children have shown decreased self-esteem and social problems with their peers (U.S. Department of Health & Human Services, 2007).

The influence of parents on children and their weight must be addressed along with children’s perceptions of their weights. Children note their parents as being the source of their information regarding food and choices in their nutrition (Jefferson, 2006). Many parents do not believe that their child is overweight or obese, and this thinking leads to barriers to improving the child’s weight (Jefferson, 2006).

The Main Goals for Children That Are Obese

Children who do not perceive their weight accurately may not be dealing with their health and nutrition effectively. For children who are overweight or obese, dieting is not normally used to regulate or control weight. The usual management is to decrease or halt weight gain. This allows the child to naturally develop into a normal
weight for their age and height (U.S. Department of Health & Human Services, 2007).

Research Literature

A Gap In Literature

In searching for research material on 5th grade children's perceptions of their weight status, it became very evident that there was a gap in the existing literature. Since obesity is a global issue with children, there have been numerous countries that have contributed to research of the child’s perception of weight. One such study is on children’s perceptions of weight, exercise and health (Snethen, & Broome, 2007). This study involving children’s perceptions will be described. The countries with articles pertaining to the subject of children, their weight, and their perceptions included: China, Brazil, Hong Kong, Africa, Portugal, and the Netherlands. These countries had studies on a wide range of children and various variables that were tested. Some of the variables included perceptions of weight, perceptions of body image, psychosocial issues, parents, and dieting.

United States Studies

Studies performed in the United States concerning children’s perception of obesity are important in view of the current obesity epidemic and health-related issues.
Costs related to overweight and obesity in the year 2000 rose to a dramatic $117 billion, and those numbers continue to rise (Snethen & Broome, 2007). Deaths that are related to overweight and obesity have risen to 300,000 per year (Snethen, & Broome, 2007).

A study done in the U.S. that was specific to children's perception of their weight included a small sample of 17 children aged 8 to 12 (Snethen & Broome, 2007). The participants were English speaking, racially diverse, overweight, and had BMI’s that were greater than the 95th percentile for their age and sex. The study used a qualitative phenomenological investigative method. Interviews were taped, with sessions lasting from 30 to 60 minutes in length. Questions regarding physical exercise, personal weight issues, and nutrition were asked. This study presented four important findings. First of all, the children were aware of healthy choices, but the behaviors that they reported were not healthy. This type of behavior was viewed as being disconnected mentally. The second significant point was that there was a difference in the BMI that was determined and what was perceived by the participants. Even though the children were all overweight, approximately 30% of the children stated that their weight was normal, and 42% of the participants perceived their
weight as being less than normal or normal weight for their age and height. This was the third important factor and was viewed as the children having a body image distortion. There were social issues that were brought up concerning being bullied, seeking peer approval, and the need to have physical exercise with peers. The fourth finding was that the participants did not have regular exercise structure in their daily life (Snethen & Broome, 2007). The children’s knowledge about exercise was very limited. This study is important because it identifies that children may know what they need to do with their diet to be healthy, but that did not mean they were doing it. It was felt that the children may not be eating healthy because they do not buy the food, and it was not available for them. The children’s perspectives in the study give some understanding of the need for further study of children’s perceptions of their weight in order to provide intervention for overweight and obese children (Snethen & Broom, 2007).

Another research study focusing on weight and perceptions examined inner city African-American children age 10-19, and their parent’s perceptions of their weight and health status (Skelton, Busey, & Havens, 2006). In this study, 146 surveys were completed by children and 108 were completed by parents. The study concluded that 68% of the
parents perceived their child’s weight as average and 80% believed the current weight was good for their child’s health. It is significant that the children, with overweight issues equaling two-thirds of the sample, believed that their weight was average and that they were in good health. The child’s perceptions were highly correlated to the parent’s perceptions (Skelton, et al., 2006).

Brazilian Study

In Brazil, a cross-sectional cluster sample study of 901 student’s aged 8-11 using 43 different schools examined children’s weight perceptions (Pinehiro & Giugliani, 2006). The study attempted to identify children with normal weight, but who felt they were fat. The statistics and findings were astounding. Although three-fourths of the sample had a BMI that fell beneath the 85th percentile, 12.9% believed they were obese. More girls wanted to be thinner and perceived themselves as being fat. Both girls (17%), and boys (9%) falsely believed that they were obese. It was found that higher BMI was associated with increased need to be slimmer. The significance in this study is that the children’s perceptions of their bodies were distorted and that these children had not reached adolescence yet (Pinehiro & Giugliani, 2006).
Hong Kong Study

Asian countries are seeing an increase in rates of overweight and obese children. In Hong Kong, the second largest health issue in the secondary schools is obesity. During the school year of 2004-2005, 2000 students were referred to health care due to obesity (Cheung, Ip, Lam, & Bibby, 2007). This study involved 1088 students, 575 boys and 513 girls age 12-14, and involved evaluating BMI and weight perception. There was a significant difference between weight perception and actual weight. Girls (8.3%) with a BMI less than the 3rd percentile and girls with BMI's ranging from 3rd and 25th percentiles falsely believed themselves to be overweight. The girls who were in the 25th percentile, believed that they were extremely overweight. The boys in the study were more likely to see themselves as underweight when they were overweight (Cheung, et al, 2007).

China Study

In a study of Chinese children ages 12-14, it was also found that girls were more concerned about their weight and more likely to believe themselves to weigh more than they did (Shi, Lien, Niral Kumal, & Holmboe-Offesen, 2005). In Asian countries, being overweight is more acceptable for boys than for girls. Boys with average weights in this
study desired to weigh more. Perceptions were inaccurate with a third of the girls believing that they were overweight, when in reality, only 8.9% were actually overweight. Another 15% of the girls believed they were underweight and only 5.6% were actually underweight. Approximately 20% of boys that were either overweight or obese believed they were normal weight (Shi, et al. 2005). Twelve percent of girls and 25% of boys who were of a normal weight believed they were underweight. Again, in this study, child perceptions are not well correlated with the actual BMI’s (Shi, et al. 2005).

Portuguese Study

Psychosocial issues were found in nearly all of the studies reviewed. A Portuguese study sought to determine various psychosocial issues and perception of health and body image for 5697 students ages 11-16 that were divided into two age groups, 11-13 and 14-17 (Forseca & Gaspar de Matos, 2005). The actual study was on various issues affecting teenagers’ views of their weights, dieting, friendships, activity levels, and how they see their own bodies. The students had an average BMI mean of 19.46 and 20.68 respectively. The majority of the participants listed their body image as average. The significance was in the views the overweight teenagers listed about their body.
They reported their bodies as "overweight" (65.5%), "normal" (23.6%), and "thin" (3.2%). This study addressed whether psychosocial issues such as depression, poor self-concept and body image in children leads to being overweight or if the increased weight causes the depression, self image, and body image problems (Forseca & Gaspar de Matos, 2005).

Dutch Study

In a Dutch study of 3,841 12-13-year-olds, mental health problems and weight misconceptions were found to be problems for children ages 12-13. Many of the children in this study had complaints of perceiving that they were fat when they were not (Jansen, Van de Looij-Jansen, de Wilde, & Brug, 2008).

In a study involving children and obese peers and their relationships, it was found that normal weight boys and younger children tended to interact less with the overweight children. The girls in this same study didn’t seem to pay attention to the weight of the other child (Bell & Morgan, 2000). The study involving the Dutch children and the study with the peers and their relationships are both studies demonstrating significant psychosocial issues related to a child’s weight.
Use of Pictorial Images

Some studies used Collins Pictorial Images to assess how children perceived themselves. This is an instrument developed by a researcher named Collins that depicts seven silhouettes of children from thin to overweight. The children that are participants in studies using the pictorials are told to pick the picture that looks like them (Fisher, Lange, Young-Cureton, & Candem, 2005).

The studies using the pictorials included Portuguese, Italian, and Hispanic children. In Portugal, the boys perceived themselves as being overweight more frequently than the girls (Fonseca & Gasper de Matos, 2005). In a study of Italian children, greater than a third of the children were in the overweight range. The girls demonstrated greater concern with their body shape. This study found that in comparing the body image selected, the actual BMI’s, and the answers that the children provided on their survey’s, the children were not perceiving their weight accurately and believed their weight was less than it actually was (Gualdi-Russo, et al., 2007).

Hispanic Study

A study of Hispanic children aged 6-9 showed normal BMI’s in 40% of the sample, risk for weight problems in
30%, and those that were overweight were 30% (Fisher, et al, 2005). Weight issues existed for a total of 60% of the Hispanic children that participated. When participants picked from the Collin images representing their weight, 23% picked thin images, 75% picked normal weight images, and 2% picked overweight images. The results were clear that the actual BMIs of the children did not correlate with their weight perception (Fisher, 2005). These same children were told to pick the best body weight image, and 37% picked the thinner body images, as opposed to the average body image (Fisher, et al., 2005).

**Parental Influences On Weight Perceptions**

At an early age, children learn from their parents and the environment how to perceive their weight (Pinheiro & Giguliani, 2006). A few of the research studies involved correlating the child’s perception of weight with the parent’s perception of the child’s weight. A study done in China on children of average weight showed, 22% of the parents considered their child underweight (Shi, et al. 2006). Twenty-three percent of the time parents rated their overweight children as normal in weight. In 25% of the normal weight children, parents wanted them to gain weight. The children’s perceptions of their own weight corresponded with their parent’s perceptions (Shi, et al., 2006).
In a Brazilian study, it was found that the children were three times more likely to feel fat when they perceived that their parents wanted them to be thinner (Pinehiro & Giguliani, 2006).

*Children’s Distorted Perceptions and Dieting*

A major concern with all of the distorted perceptions of weight and body image in all of these studies is that many of the children who are not overweight are turning to dieting, and that those that are overweight are not dieting because their perception is that their weight is normal (Fonseca & Gaspar de Matos, 2005). Children who believe that they are overweight may suffer from dysfunctional eating habits and a decreased mood level (Fisher, et al., 2005). Forty percent of the girls and 31.6% of the boys in China who were not correct in their weight perceptions reported dieting. A concern is that with distorted body images and inaccurate weight perception occurring in children, eating disorders can occur in children who are still growing (Gualdi-Russo, et al., 2007). Of children in China who also had misconceived perceptions of their weights, a fourth of the children had been dieting and skipping breakfast (Shi et al., 2005). In Hong Kong, females who thought they were overweight would reduce their food intake, use pills for
weight loss, and resort to purging and using laxatives (Cheung et al., 2007).

**Summary**

Previous research has found more dissatisfaction in teenagers and less in the younger children. Findings from the studies cited in this study demonstrate that younger children are showing signs of body image distortions and weight misperceptions prior to adolescence (Fisher et al., 2005). Developmentally, these children have not reached a cognitive level to be able to think in an abstract manner. The adolescents cited in these studies should be able to think in an abstract manner in their cognitive developmental level. The evidence provided clearly shows that even teenagers have inaccurate perceptions. Since teenagers chose to adopt methods to reduce their weight, even if they are not overweight, it is clear that education is needed to clarify their perceptions (Cheung et al., 2007). Research shows that there are cultural and parental influences that affect the child’s perspectives of his/her weight and body images. Distorted body image and inaccurate weight perception is obviously a global issue (Shi, et al., 2007).
There is a need for children and adolescents to be screened and referred in the United States and other countries in order to provide

"identification, assessment, and management of adolescents who exceed a healthy weight for height, gender, and age, which would enable us to start prevention and management of adolescent overweight and obesity earlier, thus decreasing the potential for associated medical and psychological problems"

(Fonsenca & Gaspar de Matos, 2005, p. 327).

Based on the research findings, it is obvious that grade school children should receive the same identification, assessment, and prevention management as the adolescents. Considering that the teenage years come with obstacles, to eliminate or to decrease the incidence of overweight and obesity for all aged children is a task that health care professionals, parents, teachers, the children themselves, and peers can begin to address with the help of advanced nurse practitioners. Further research on perception of weight and body image is recommended at various ages in the grade schools. Further studies on parental influence and perceptions and their perception of the weight of their children is also needed.
Weight perception in 5th graders was studied using a descriptive quantitative study design. A quantitative descriptive study is one that is described and written down as it occurs along with numbers that are reported in the results (Polit & Beck, 2008).

Sample

A convenience sample was utilized. Children were weighed, measured, and surveyed as available at a school on the day of the study. It was planned that there would be at least 30 boys and girls in the fifth grade at a local elementary school that would be involved. Participants were based on the size of the class in the school and were not limited to overweight or obese children. Originally, consent forms were sent out to two classrooms, but since there was little response, three more classes had consent forms sent out. This was due to the fact that the principal required that the consent forms had to be sent back before a child could participate in the study. The sample ended up being derived from five classrooms to get as many participants as possible. A total of 18 children returned their consent forms, 12 female and 6 males.
Inclusion

This study was limited to 5th grade boys and girls of five class rooms selected by the school staff at a local elementary school, and that returned their consent forms to participate. Children who were unable to read the questions could not participate, but this was not a factor in this study. Originally, for the study, it was planned that consent forms would be sent out, but that if they were not returned that it was assumed that the child could participate if the child chose to. This statement was written on the original consent form. After approval of the forms and the study by the Internal Review Board at Southern Adventist University Human Participation Subcommittee, the principal reviewed the letter to the parents, the consent form, and the questionnaire and decided to revise the consent form. She required that the forms had to be signed and returned for children to participate in the study. With this change to the inclusion, there was limited access to the participants due to failure to get consents signed, or failure to be present on the day of the survey.
Setting

The setting was in an elementary school in a rural area of southeast Tennessee. The school was used for convenience.

Ethics

The researcher performed the study with the assistance and presence of a designated teacher from the school. Because this was a vulnerable population, steps were taken to ensure appropriate consent, privacy and confidentiality. The term obesity was not used. The term overweight was not used. Height and weight information was kept safe and not visible or heard by the other participating children in the study. A consent form was obtained from predominant caregivers of the children participating in the study. Coercion was not used for parental/guardian consent or student participation. The consent form did have written on it "My child can participate in this study. If I do not agree, I must send back this consent form stating that my child cannot participate, otherwise, if a consent form is not sent back, it will be assumed that the child can participate", but this was deleted after the principal requested that consent forms had to be returned on each child. Students who refused to participate, even after parental consent, were not forced to participate, and did
not have to be in the study. At the bottom left of the consent form was a place for the child and the parent to sign and a place to check the appropriate line indicating if the child could participate in the study or not. No name appeared on questionnaires. The child’s teacher sent the consent forms along with the child to the room designated for the study. The designated teacher was assigned to: get the children to the art room to take the questionnaire, verify that the child did have a signed consent form, that the child was who was on the consent form, and that the consents were kept separate from the questionnaires.

Instrumentation

For measurement of height, a plastic measuring tape was adhered to the wall. A cloth measuring tape was planned to be used, but was not available in the stores, and since they do tend to stretch, a plastic tape measure was used instead and was adhered to wood on the wall with duct tape. Height was measured without shoes. Digital scales were used for the participant’s weight. Weight was obtained with normal clothing, and no coats or shoes. Both measurements were obtained in a private area. After the weight and height were determined, the child’s body mass index could be calculated through the use of the Center for Disease Control growth charts. The body mass index was determined
at a later date while working on the data entry into SPSS and away from the elementary school. To measure the child's perception of weight status, a quantitative questionnaire with multiple choice, dichotomous, and fill in the blank questions was administered to the children who participated in this study. The questionnaire was given to children that were in the fifth grade. Completion of the questionnaire was performed at their elementary school. A consent form was sent to the parents, and a signed form had to be returned for a child to be able to participate in the study to complete the questionnaire and have weight and height measurement.

Procedures Used For Data Collection

Permission from the school for the project was received prior to performing the data collection. A meeting was held with a designated teacher, who met with the 5th grade teachers to determine the date to perform the data collection, the classrooms of students to be used, where to set up the area for weight and height measurement, where the questionnaires were to be completed, potential need for use of three sided cardboards to block view of participants' questionnaires on their desks, and when the consent forms to the parents would be sent out.
The week prior to the date of the survey, the teachers were contacted to determine if the consent forms had been received. Since there were not enough returned consent forms received from two classrooms of fifth graders, consent forms were sent out to three more classrooms of fifth grade children. On the day of the data collection, the private area for measurements was located in an adjoining room to the art room where the children completed the questionnaire. The private room was set up with the digital scale placed on the floor, and a plastic tape measure secured to the wall. The teachers determined which students had completed consent forms. The designated teacher decided the questionnaire would be completed in the art room, and height and weight would be measured in an adjoining room that provided privacy for each child. Questionnaires were given to each eligible child. The participants' names were not used on the questionnaires. There was not quite enough space between children so that answers could not be seen by other children, so a three-sided cardboard was placed around the top of the child's desk to assure privacy of participants' answers. Questions by the children concerning the questionnaire were answered by the researcher. This was to avoid bias in how the question was worded for the child's understanding. When the
children finished their questionnaire, they turned it over and were monitored by the designated teacher while the primary researcher measured and weighed each child individually in the adjoining room. The children were given and allowed to eat a fruit snack package for participating in the study while waiting to have their weight and height measured. One at a time, each child was called to the adjoining room by the researcher and they were assigned a number in numerical order of their appearance. The number assigned to the participant was placed on the back of the questionnaire in order to identify the form, and to avoid the participants name from being on or identified with the form. The child's weight was measured first on the digital scale and was recorded on the back of the questionnaire. The height was then measured and was also recorded on the back of the questionnaire. Once the heights and weights were collected, data collection at the school was complete. The forms were kept in a safe location in possession of the researcher until the data were recorded. All data entered into SPSS were checked twice for accuracy of entry. Once the data were recorded, the original forms were shredded.

Data Analysis

With the height, weight, and an assigned number to the participant already available on the back of each
questionnaire, the researcher went through each form and used the Centers for Disease Control growth charts to determine each child’s body mass index.

Data collected were entered into SPSS. Identifying information of the individual participants was not available to the researcher nor was it a part of the analysis.

Descriptive statistics were used to describe the sample and to address the research question about weight perceptions.

Plan For Dissemination Of Findings

Since the study has been completed, the results have been presented to the Southern Adventist University faculty and nursing students during the Master of Science in Nursing Graduate Presentation Program as a thesis. The information may be written for publication in a nursing journal. Bound copies of the thesis are available in the library and School of Nursing Learning Resource Center.
Chapter 4
Results

Introduction

The purpose of this study was to answer the question: How do fifth graders perceive their weight status? A quantitative descriptive study design was used. The instrumentation for this study included a quantitative questionnaire with multiple choice, dichotomous, and fill in the blank questions, along with weight and height measurements of each child. Body mass index was determined using Centers for Disease Control growth charts and participants' weight, height, and age data. Frequencies were used to calculate the results from the questionnaires.

Comparison of Questions

Analytic descriptions were utilized in the results. Comparison was made of the child's actual body mass index and their answer on the questionnaire that asks the child about their thoughts about their own weight: a. too little, b. just enough, c. a little bit too much, or d. a lot more than I should. A comparison of body mass index of the participant and their answer to question number six on the questionnaire asking if they worry about their weight (yes, all the time, yes, sometimes, or no, never) was also made. Another question asked the participant if they had tried to
lose weight. The response to this question was compared to their body mass index question response. In order to determine what a 5th grader’s perception of their weight was and if it correlates with their own body mass index, Spearman’s rho was used.

Sample Demographics

Number of Participants

This study was conducted in May of 2008. The fifth grade children at the elementary school that was used were about to graduate to middle school and there were lots of field trips and activities going on at the school during this time. The school had five classrooms with approximately 20 to 22 students per classroom. The initial plan was to have 30 children participate from two classrooms. Letters and consents were sent out from those classes. The consent form had to be returned for the child to be allowed to participate in the study. The response rate was low in the first two classrooms, so consents were sent out to the three remaining classrooms. Unfortunately, with so many events taking place in the school, and with students that did not get their forms turned in, there were only 18 participants, 12 girls and 6 boys. The ethnicity of the sample was not surveyed. The ages included children...
from age 10 to age 12, with one 10 year old, sixteen 11 year olds, and one 12 year old.

Description of Findings from the Questionnaire

Use of Questionnaire

To determine the results of the study, it is necessary to review the results of answers to the questionnaire which asked the participants what they think about their weight, other children’s weight, why kids are overweight, if they worry about their weight, if their friends worry about how much they weigh, if anyone had told them that they weighed too much, who it was that had told them that they weighed too much, and if they had ever tried to lose weight. These questions were important to ask to determine the childrens’ perceptions. Data from the questionnaires were entered into SPSS and frequencies were printed out in the form of frequency tables, and some correlations among the variables were made using Spearman’s rho.

Self Assessment of Weight

One of the questions on the survey asked the student to complete the sentence, “I think I weigh ____”. Options for completion were: a. too little, b. just enough, c. a little bit too much, and d. a lot more than I should. Data from the questionnaires revealed the following: 1 (6%) selected child selected a. too little, 11(61%) of the 18
children selected b. just enough, 5 (29%) selected c. a little bit too much, and 1 (6%) selected d. a lot more than I should.

Participants Body Mass Index

Body mass index was entered into SPSS for additional analysis. The information was determined through the use of the child’s height, weight, and age. The following results were obtained: 78% (14 of 18 children) of the participants had healthy weight, 6% (1) was at risk for being overweight, and 17% (3) were overweight.

Correlation of Self Weight Perception and BMI Variables

A correlation between what participant’s felt they weighed, and the child’s actual body mass index was evaluated. The Spearman rho correlation coefficient was calculated for the relationship between what the participants felt that they weighed and their body mass index and demonstrated a strong correlation ($r = .804$, $p < 0.01$). This indicates there was a significant relationship between the two variables and that there was a strong correlation between participant’s perception and reality; their weight perceptions were generally accurate.

Additional analysis of the three children that were overweight and one that was at risk for being overweight, revealed they all chose the response that they weighed “a
little bit too much". None of the overweight children chose the response "a lot more than I should". Furthermore, one participant with a normal BMI percentile of 77 felt that he or she weighed a little too much. Another participant with a BMI percentile of 61 selected the choice I think I weigh a lot more than I should". And a final participant with a BMI at the 20th percentile felt his/her weight was underweight. These three participants (77th, 61st, and 20th percentile) all had healthy weight/BMI range but not corresponding healthy weight perception.

Weight Classifications of Participants

According to data from the actual BMI’s and the BMI percentiles, the majority of the participants in this study were at a healthy weight. None of the children fell into the underweight category. There were 77.8% (14) classified as healthy weight, 5.6% (1) at risk for being overweight, and 16.7% (3) that were overweight. One boy and two girls were categorized as being overweight. There was one girl that classified herself as weighing a little too much that was in the healthy weight range. Another child felt he or she was underweight but was actually healthy weight.

Children’s Assessment of the other Children’s Weight

The participants were asked, "Do you think that there
Are a lot of boys or girls who weigh too much?" The participants were divided with 50% (9) yes and 50% (9) no on this question. One boy and 8 girls answered yes, and 5 boys and 4 girls answered no to this question.

**Why Children Believe Other Children Are Overweight**

Another question asked was, "What do you think is the reason some kids weigh too much?" Over 55% (10) believed overweight in children was due to eating the wrong foods. Approximately 28% (5) felt that weight problems were due to not getting enough exercise, 11% (2) felt that children were eating too much, and only 6% (1) checked they didn’t know on the survey.

**Children Worry About Their Weight**

The children were asked, "Do you worry about how much you weigh?" Over 22% (4) of the participants worry about their weight "all the time". Those that worry "sometimes" were 50% (9) of the sample. Nearly 28% (5) never worry about their weight. There were 9 girls and 4 boys in the study that answered yes to the question and 3 girls and 2 boys that answered no. Of the 5 children who stated that they did not worry about their weight, 1 was classified as overweight and 4 fell in the healthy weight range. Those that answered yes to worry about their weight included 10
healthy weight, 2 overweight children, and 1 at risk child.

Correlation Between BMI and Kids Worrying About Their Weight

Spearman’s rho was used to determine the correlation between participants’ BMI and if they worried about how much they weighed. A significant correlation was not found to be present \((r=-0.299, p=0.23)\). Those with higher BMI were more likely to worry about weight, though not significantly more likely.

Friends Worry About Their Weight

Participants were asked if their friends worry about how much they weigh. Nearly 78\% (14) of the participants reported that their friends do not worry about their weight, and 22\% (4) reported their friends do worry about their weight. Of the four children that reported that their friends do worry about their weight, three were girls and one was a boy.

Had Anyone Told You Weigh Too Much

The question, “Has anyone has ever told you that you weigh too much?” was asked next. The majority of participants, nearly 78\% (14), circled the answer no; 22\% (4) circled the answer yes that someone had told them that they were overweight. According to their BMI’s and of the
four that answered no to the question, only one of the overweight participants had been told he or she was overweight, and three healthy weight children had been told that they were overweight. Those choosing the no answer included two overweight, one at-risk for being overweight, and eleven healthy weight participants.

Who Said You Were Overweight

The participants were asked, "Who told you that you weighed too much?" The choices included: a. mom, dad, grandparent; b. doctor, c. friend, d. someone else, and e. no one. One boy and one girl that were classified as overweight stated that the doctor had told them, a girl that was at risk said someone else, a girl that was overweight said no one, and another girl in the healthy weight range said that a girl friend had told her. Mom, dad, and grandparent were not selected as an answer by any of the participants. There were 14 children that didn’t have anyone tell them that they were overweight, and 1 of those was overweight according to her BMI.

Had You Tried to Lose Weight

The last question that the participants were asked was if they had ever tried to lose weight. Fifty percent (9) of those answering the question said no, 33% (6) had tried to lose weight, and approximately 17% (3) felt that it didn’t
apply to them. Of the six children that had tried to lose weight, two were overweight, one was at risk for being overweight, and three were classified as being healthy weight. One of the overweight participants had never tried to lose weight.

Correlation Between BMI and Weight Loss Attempts

To determine if there was a correlation between the participant’s BMI and attempts to lose weight, Spearman’s rho was used. A significant correlation did not exist (r=0.36, p=.135). Those who weighed more were more likely to have tried to lose weight.
Chapter 5
Discussion/Conclusion

Introduction

This chapter will review the significant results obtained from this study. Results will be compared with other studies. Additionally, the chapter will address limitations of the study, examine the framework used in the study, review the instruments and procedures, and discuss what could’ve been improved in this study or in the future.

Significance of Results Obtained

The instrument used in this study was the “5th Graders Thoughts About Weight”. BMI assessments done on each participant provided important information for the study. The results were obtained by data collected from the answers to questions about the participant’s weight perceptions and with correlating their BMI’s along with some of their responses. This section will review some of the significant results from this study and will compare them with a similar study of over a 1000 participants (Brown, et al., 2006).

Weight Perceptions

This study revealed a strong correlation between participants’ perception of their weight and their BMI. This indicates their perception was accurate. Yet, when
looking at the individual responses given by the participants and their actual BMI, it was obvious that some misperceptions still exist. The three children that were overweight chose the response “a little bit too much” and none of them chose the response “a lot more than I should”. These three participants whose BMI’s were equal to or greater than the 95th percentile, who felt that they weighed a little bit too much, could have been experiencing denial, or may have just inadequately informed and educated on normal weight.

Three other participants had normal BMIs that were in the 77th, 61st, and 20th percentiles and indicated that they felt they weighed a little too much, more than they should, or that they were underweight, respectively. These results clearly reveal misperceptions with the healthy weight children as well. Both normal and overweight participants experience misperceptions.

In the study performed by Brown, (Brown, et al., 2006), 55% of the participants assessed themselves as the right weight 18% felt that they were slightly overweight. Current results are similar to that of Brown, in that the majority of the students felt that they were average weight or slightly overweight. Misperceptions were noted in the other studies as well.
Perceptions of Other Children’s Weight

Results revealed, at least half of the children felt there are a lot of boys and girls that weigh too much, and that it was due primarily to eating the wrong foods or lack of exercise. In the Brown study (Brown, et al., 2006), 44% of the participants felt that children weigh too much due to eating the wrong foods and not choosing the right ones, and 29% felt that lack of exercise was a contributing factor. The results of this study on a much smaller scale were similar to the larger study. These results demonstrate that the children are aware that there is a problem with childhood obesity, and that diet and exercise affect weight.

Children Worrying About Their Weight

The question about children worrying about their weight showed that even children with healthy weight worried about their weight either all the time or sometimes. Half of the participants worried about their weight were girls and this is also found documented in the literature that was reviewed. Brown et al. (2006) found 54% worried either sometimes, often, or all the time about their weight. One of the participants in this study, who was overweight, indicated no worry about weight at all. This is concerning. One needs to question whether the child
is aware of the health consequences of overweight or is in denial.

_Had Anyone Told You That You Were Overweight_

Another important question asked of the participants in this study was if anyone had told them that they were overweight. Four of the eleven children who answered no to the question included two who were overweight, one who was at risk for being overweight, and one who was normal weight. Those participants that circled yes to the question included only one overweight child and three healthy weight children. A concern from this data is that the overweight children and the at-risk for being overweight children are reportedly not being told that they are overweight by anyone. Parents and primary care providers may not be talking to these children about their weight issues and how it can affect their health. A child may not perceive that they are overweight or may be in denial. On the other hand, they may have been told but not heard or understood. In this study, a doctor told two of the overweight children that they were overweight, and a friend or someone else told two other children that they were overweight, and one of those participants was in the healthy weight range. Children may be told, but may not be given correct weight information. None of the children in
this study were told by their parent or grandparent that they were overweight. In the Brown study (Brown, et al., 2006), 44% of the children said that no one ever talked to them about their weight, and 31% said that their mom or dad talked to them about their weight, and the remaining 25% of the participants named a relative, friend, or someone not listed as talking to them about their weight.

_Had Tried to Lose Weight_

The participants were asked if they had tried to lose weight and six of the eighteen children had tried to lose weight. Half of these children were at healthy weight. These results lead to other questions. Did healthy weight children try to lose weight due to misperceptions about their weight? Are they healthy weight in this study due to previous weight loss?

One overweight participant in the study had never tried to lose weight. Are children aware that they need to grow to their correct size and that instead of dieting that it is best to work on diet and exercise? The results from these questionnaires show that there are some important misperceptions in 5th graders about their weight, and that further questions need to be asked.
Limitations of the Study

There are several limitations to this study. A small sample size was used and this can pose a threat to the internal validity. The sample used was a convenience sample instead of a random sample. In this study, females numbered two to one over males. Participants included fourteen healthy weight children, only three overweight, one at risk for overweight, and no underweight participants. A larger random sample would have increased the diversity of the sample and the reliability and generalization of the findings. Another limitation was that a rural elementary school was used. Results are generalizable only to similar populations if generalizable at all. The questionnaire included forced choice items. This may have influenced a response by the participants.

Framework of the Study

The framework of the study was Piaget’s Cognitive Developmental Theory (Burns, et al., 2004). Fifth graders are in the cognitive developmental stage and have not reached the formal operations stage, their perceptions are influenced by what they can see (Burns, et al., 2004).

Some of the children in this study demonstrated perceptions that were not correct. Parents, primary health care workers, or teachers may need to address these
perceptions within the context of the child's cognitive developmental level.

Review of Instrumentation, Procedures, and Consent Used

The instrument used included the questionnaire and the assessed BMI. The instrument was designed to be one page and it did contain questions that were appropriate to determine participants' perceptions of their weight. Because the results were similar to a larger study that was done, and that there was some reliability in the answers to the questions being somewhat consistent with the BMIs, the survey was determined to be good. To further evaluate the questionnaire, it would be helpful to use it again in the future for another study. Further in depth questions could be added to the questionnaire. The procedures in assessing the BMI's and in administering the survey were effective and worked well. It would have been helpful if the consents could have stated that they only needed to be returned if the child was not going to participate, if the consents had been sent out earlier in the school year, and if either all five of the 5th grade classrooms had initially received them or if a larger school had been used. Another possibility would have been to have included 4th grade students.
Further Research Needed

There is a need for further research on the perceptions of children and their weight. In determining what a child perceives about their weight, health programs can be developed to help children with their perceptions or misperceptions. A multi-disciplinary approach involving nurses, physicians, schools, and parents all working together to help children to maintain a healthy weight and lifestyle is needed. Research findings contribute significantly to forming an evidence-based practice. This information can be helpful in creating programs to assist children in developing or maintaining a healthy weight; to decrease the number of children that are overweight and obese; and to reduce the consequences that increased weight can impose on the child's life and as they reach adulthood.

Conclusion

This study of 5th graders perception of their weight status is significant. The number of participants was low, but the results were similar to another study cited in the literature that had over a 1000 participants. The results demonstrated that there are misperceptions between a child's perception of their weight and their actual BMI (although some of the students did correlate with their weight and BMI); that the majority feel worried about their
weight even if they are of normal weight; that parents and healthcare providers are not talking to overweight and at-risk for overweight children about weight issues, or that children are not getting the message; and children recognize that diet and exercise are the main reasons for weight problems.

The health implications of life-long overt obesity are significant. Addressing these issues early is imperative. Problems are evident at the 5th grade level and need to be addressed through clinical, professional and educational modalities.
References


Dear 5th Grader Parent, Guardian,

Weight problems are a significant health concern in the U.S. The ability to do something about weight is affected by parents, children, teachers, and healthcare providers. I am seeking your permission to do a study about weight involving your 5th grade child. All children can be involved regardless of their weight. The study involves the child answering questions and having their height and weight recorded. This will take place at school in a private location, so that their answers to the questions are not read by others and so that no one is able to see their measurements. A healthy fruit snack will be provided as a reward for participation.

Attached you will find a permission slip. Please return this form tomorrow. If the consent form is not returned, it will be assumed that the child cannot participate.

If you have any questions, please call the primary graduate nurse researcher, Alice Hannifin, at (423)238-3412.

Thank you so much for allowing and encouraging your child’s participation. The information will provide a better understanding of what 5th graders’ think about weight and will help teachers, and parents, and healthcare providers know better how to deal with this important health problem. – Alice Hannifin
APPENDIX B: CONSENT FORM

Permission for Authorization for
5th Graders Thoughts About Weight Questionnaire
to Be Completed and Height and Weight Information to be provided

I understand that this questionnaire is for a research project to help identify what 5th grade children think about some health care issues. This questionnaire is being given to children regardless of their weight. This study is about children's perceptions of weight and what the child knows or believes. The name of the child will not be used in the research study. The only information needed is completion of the questionnaire by the child, and height and weight measures of the child. The questionnaire completion and height and weight measurements will be performed at school. Thank you in advance for contributing to this research project.

I give consent for my child to participate in this research project with 5th Graders Thoughts About Weight Questionnaire to be completed and that the weight and height of the child may be checked and recorded for use in this project. My child's answers on the questionnaire and height and weight will be used in the research, but their name will not be. I understand that the parent cannot answer the questions or try to sway the child's answer. The researcher will be available to answer any questions that the child has in case they do not understand a question.

My child can participate in this study:

________________________________________  __________________________
Legal guardian                          Date

________________________________________  __________________________
Child's name                            Date

Please check one: My child can be in study_____ My child cannot be in study_____
APPENDIX C:

5th Graders Thoughts About Weight

1. I am a: a. girl  b. boy

2. I am _____ years old.

3. I think I weigh: Circle the answer that best describes what you think.
   a. Too little  b. just enough  c. a little bit too much  d. a lot more than I should

4. Do you think that there are a lot of boys or girls who weigh too much? Circle your answer.
   a. yes  b. no

5. What do you think is the reason some kids weigh too much? Please circle your answer.
   a. not enough exercise  b. eat too much  c. eat the wrong foods  d. I don't know

6. Do you worry about how much you weigh? Circle the answer that is true for you.
   a. yes, all the time  b. yes, sometimes  c. no, never

7. Do your friends worry about how much they weigh? Circle your answer.
   a. yes  b. no

8. Has anyone told you that you weigh too much? Circle your answer.
   a. yes  b. no

9. If the above question was answered yes, who told you that you weighed too much? Circle your answer.
   a. mom, dad, grandparent  b. doctor  c. friend  d. someone else  e. no one

10. Have you ever tried to lose weight? Circle your answer.
    a. yes  b. no  c. doesn't apply
May 9, 2008

Ms. Alice Hannifin
PO Box 784
Ooltewah, TN 37363

Dear Ms. Hannifin,

The Human Participants in Research Subcommittee has approved research application entitled “5th Grade Children’s Perceptions of Their Weight Status” that was submitted to the IRB committee. It is the understanding of the committee that you will be collecting BMI, and heights and weight data from fifth grade children. The committee understands that the purpose of the study is to understand how these children perceive their bodies and to develop interventions to counter childhood obesity.

It is our understanding that your research is being conducted through the School of Nursing and Dr. Holly Gadd is your supervising professor. All participation in your research must be voluntary and data kept in a secure location. The study is expected to be concluded by July 2008, and at the end of the study data collected must be destroyed in an appropriate manner.

Sincerely yours,

Linda Ann Foster, Ph.D.
Chair, Human Participants in Research Subcommittee
Professor, Biology Department
Southern Adventist University