

California State University, San Bernardino

CSUSB ScholarWorks

Theses Digitization Project


John M. Pfau Library

2005

Parental perceptions of their child's weight and health

Julie Vy Pham

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd-project>

 Part of the [Nursing Commons](#), and the [Nutrition Commons](#)

Recommended Citation

Pham, Julie Vy, "Parental perceptions of their child's weight and health" (2005). *Theses Digitization Project*. 2934.

<https://scholarworks.lib.csusb.edu/etd-project/2934>

This Thesis is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

PARENTAL PERCEPTIONS OF THEIR CHILD'S
WEIGHT AND HEALTH

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Nursing

by
Julie Vy Pham
December 2005

PARENTAL PERCEPTIONS OF THEIR CHILD'S
WEIGHT AND HEALTH


A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

by

Julie Vy Pham


December 2005

Approved by:


Ellen Daroszewski, RN, PhD, Chair,
Nursing

6/9/05
Date


Susan Lloyd, RN, PhD, CNS


Anita Kinser, RN, EdD

ABSTRACT

Childhood obesity is a major health problem facing children in the United States. How parents view their children's weight is an important consideration for health care professionals. The purpose of this study was to explore parental perceptions of their children's weight and health. Furthermore this study examined the relationship between being told by a provider and or school that their child was overweight and acknowledging their child was overweight. This study also described parental feeling or worry with an overweight or obese child. This was a descriptive, cross-sectional, quantitative study. The sample included 44 parents over the age 18 years of age with one child less than 18 years of age. Questionnaires were administered to a variety of participants. The mean and standard deviation were calculated using the standard Statistical Package for the Social Sciences (SPSS, 11.0 Version). The findings revealed that 30.2 percent of parents were worried over their children's weight. However, only 17 percent of parents considered their child, overweight. A subgroup analysis demonstrated that 100 percent of parents who were informed by their provider and or school their child was overweight also acknowledged their child as overweight.

ACKNOWLEDGMENTS

It is my privilege to acknowledge the California State University San Bernardino graduate nursing department and to thank my thesis committee, Dr. Susan Lloyd, and Dr. Anita Kinser, for their assistance and expertise. A special thank you to Dr. Ellen Daroszewski. This thesis would not have been possible without her support and insightful guidance whose encouragement helped shape this thesis into a proud accomplishment. A special thanks to my colleague and friend Annabelle Sandoval for her endless positive words of support and endorsement through this challenging time, and who stood by my side through it all.

•

DEDICATION

This study is dedicated to my loving husband, Vincent Dao. Thank you for your unconditional support, understanding and patience of a stressed wife. I love and appreciate my family for instilling in me the importance of an education and the value of succeeding in life. Thank you to my dad, mom and two wonderful brothers: Luan and Chuong Pham who have always supported and gave me strength on furthering my educational goals. Thank you all for believing in me.

TABLE OF CONTENTS

ABSTRACT iii

ACKNOWLEDGMENTS iv

LIST OF TABLESvii

CHAPTER ONE: INTRODUCTION 1

 Statement of the Problem 2

 Purpose of the Study 4

 Theoretical Framework 4

 Application of Health Belief Model 5

 Definition of Terms 6

CHAPTER TWO: REVIEW OF THE LITERATURE

 Introduction 9

 National Prevalence 10

 State and Local Prevalence 13

 Effective Weight Management Programs 15

 Parental Beliefs and Perceptions 17

 Summary 20

CHAPTER THREE: METHODOLOGY

 Introduction 22

 Participants Defined and Data Collection 22

 Description of the Process 23

 Method 24

 Instrument 25

 Analysis 26

CHAPTER FOUR: RESULTS AND DISCUSSION	
Introduction	27
Parental Demographics	27
Child Demographics	29
Parental Perceptions	30
Subgroup Analysis	32
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS	
Introduction	36
Conclusions	37
Limitations of the Study	41
Recommendations	42
Summary	43
APPENDIX A: INSTITUTIONAL REVIEW BOARD	45
APPENDIX B: MODEL	47
APPENDIX C: INFORMED CONSENT	49
APPENDIX D: SURVEY	51
APPENDIX E: SPANISH SURVEY	55
REFERENCES	59

LIST OF TABLES

Table 1. Participant Demographic Variables	28
Table 2. Child Demographic Variables	30
Table 3. Participant Perception Variables	32
Table 4. Subgroup Analysis of Participants Who Were Told By the Provider or School Their Child was Overweight and Also Saw Their Child as Overweight	34

CHAPTER ONE

INTRODUCTION

According to Healthy People 2010 (2002) overweight and obesity are the top ten leading health problems in the United States. Healthy People 2010 emphasizes the importance of health promotion and disease prevention, and encourages wide participation in improving health in the next decade. One indicator for Healthy People 2010 is to decrease the proportion of children and adolescents who are overweight and obese from a reported baseline of 11 percent to a goal of five percent. Although Healthy People 2010 reports a baseline of 11% the incidence of overweight and obesity in children may actually be up to three times greater.

One in four children is overweight in the United States (American Academy of Pediatrics, 2005). Overweight can profoundly impact physiological and psychosocial well-being. Physical health for overweight and obese children raises the risk of illness of high blood pressure, high cholesterol, asthma, type 2 diabetes, and heart diseases. Obese children may suffer from stigmatization, discrimination and lowered self-esteem (American Obesity Association, 2001). The public health

challenge is to promote healthier weights and good nutrition among children.

Statement of the Problem

Overweight and obesity are major contributors to many preventable causes of death. On average, higher body weights are associated with higher death rates. The number of overweight children, adolescents, and adults has risen over the past four decades. Total costs (medical cost and lost productivity) attributable to obesity in adults and children alone amounted to an estimated \$99 billion in 1995 (Centers for Disease Control and Prevention, 2002). As determined by the American Academy of Pediatrics (2005) the prevalence of childhood obesity is estimated to be 25 to 30 percent. Furthermore, the prevalence of obesity has increased by 54 percent in children six to 11 years of age and by 39 percent in adolescents 12 to 17 years of age. The prevalence of severe obesity increased eight percent and 64 percent within these groups, respectively. Hispanics, Native Americans and Blacks have a greater percentage of obese children. Compared to 1999-2002, when 16 percent of children and adolescents aged six to 19 years were overweight or obese in contrast to 11 percent from 1988-1994 (National Center for Health Statistics,

2005). Obesity is a result of a complex variety of social, behavioral, cultural, environmental, physiological, and genetic factors (Must, 1996).

While there has been an enormous amount of research conducted on physiological, behavioral and genetic factors with weight there are however relatively few research studies that have examined the social and psychological perceptions and beliefs among parents, the caregivers, of their child's weight and health. The need for research into attitudes and behaviors of parents and children related to overweight has been identified as an important and needed area for research (Hodges, 2002). Parental recognition of obesity is necessary factor in effecting nutritional and lifestyle changes for children (Myers & Vargas, 2000). Parental perceptions and beliefs play a role in shaping parental feeding behaviors (Golan & Weizman, 2001). It also influences the nature and amount of physical activity in which children engage in (Kalakanis, Goldfield, Paluch, & Epstein, 2001). Parental perceptions play a critical role in recognition, acceptance and successful management of obesity.

Purpose of the Study

The purpose of this study is to explore parental perceptions of their child's weight. This study has three aims: To 1) Explore parents perceptions of healthy and unhealthy weight for their child, 2) Examine the relationship between being told by a provider and or school that their child is overweight and acknowledging their child is overweight, 3) Describe parental feelings or worry with an overweight or obese child.

Theoretical Framework

The Health Belief Model (HBM) by Becker and Maiman (1975) was used in the study to support the exploration of parental perceptions regarding children's weight (see Appendix B). The HBM postulates that health-seeking behavior is influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat. The major components are perceived susceptibility, perceived severity, perceived benefits and costs and motivation and enabling or modifying factors.

Perceived susceptibility reflects individual's feelings of personal vulnerability to a specific health problem. Perceived severity or seriousness of a given

health problem can be defined as the degree of emotional arousal created by the thought of having the disease or by the medical or clinical or social difficulties that individuals believe a given health condition would create for them.

While perceived benefits are beliefs about the effectiveness of recommended actions in preventing the health threat and barriers are perceptions concerning the potential negative aspects of taking action such as expense, danger, unpleasantness, inconvenience and time required. Time and cost spent on making changes for a healthier lifestyle. Modifying factors include sociodemographic factors. Cues to action is the individual's perception of the levels of susceptibility and seriousness provide the force to act. The benefits minus the barriers provide the path to action. These cues can be internal or external.

Application of Health Belief Model

The application of the Health Belief Model (HBM) to this study was used to assist in understanding parental perceptions on their child's weight and health. Perceived susceptibility within the study can be defined as parent's perceptions of their child's susceptibility to obesity.

Increase susceptibility leads to possible comorbidities related to elevated blood pressure, cholesterol and heart disease. Perceived severity for the parents can be understood as any feelings of worry or not worry regarding their child's weight. In addition, perceived benefits can be framed as acknowledging and accepting the overweight problem with their child. This can further be supported by changes among the families lifestyle. On the other hand, perceived barriers maybe parents' believing that there is no problem, dislike, or stigma of labeling their child as overweight or obese therefore no actions are required. The study's modifying factors encompasses age, gender, ethnicity, years of education, household income, healthcare coverage, and number of children. Within the study, cues to action can be seen as the internal level of worry parents may have with their child's weight.

Definition of Terms

Childhood overweight - According to the CDC (2002), overweight refers to an increased body weight in relation to height when compared to acceptable or desired weight. Individuals with a BMI of 25 to 29.9 are considered overweight. A child is considered overweight or obese when his or her body mass index

is at or above the 95th percentile for age and gender.

Childhood obesity - Individuals with a BMI over 30 are considered obese. A child is considered overweight or obese when his or her body mass index is at or above the 95th percentile for age and gender as defined by the CDC (2002).

Perceptions - An attitude or understanding based on what is observed or thought. With the Health Belief Model (HBM) a person's perception is influenced by the level of perceived amount of threat posed by a health problem and the value associated with actions aim at reducing the threat. Therefore the recognition of the problem's seriousness.

Healthy - Stresses the absence of disease and often implies energy, strength and well being. It encompasses physiological, psychosocial, emotional and spiritual well-being. The HBM would define this as no to low susceptibility to disease.

Unhealthy - Being in a state of ill health; sick. Causing or conducive to poor health; unwholesome. Unhealthy would be described in HBM as high susceptibility to a disease or condition and elevated level of

seriousness that the condition would create difficulties.

Worry - To feel uneasy or concerned about something; be troubled. The Health Belief Model would view worry as an internal cue to take action and the emotional result of the perceived seriousness of the disease

Body Mass Index (BMI) - BMI is a common measure expressing the relationship (or ratio) of weight-to-height. It is a mathematical formula in which a person's body weight in kilograms is divided by the square of his or her height in meters (i.e., $wt / (ht)^2$). The BMI is more highly correlated with body fat than any other indicator of height and weight. The BMI is a single number that evaluates an individual's weight status in relation to height. BMI is generally used as the first indicator in assessing body fat and has been the most common method of tracking weight problems and obesity among individuals.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

Overweight and obesity are serious health problems that have reached epidemic proportions not just locally and state-wide but on a national basis. Obesity leads to significant morbidity, decreased quality of life and possibly decreased life span (Myers & Vargas, 2000). The goal of treatment in overweight children is aimed at achieving a healthy weight without effecting linear growth and to prevent comorbidities. Research has shown effective treatment of childhood weight management centers on family support, increased physical activity, healthier dietary choices, behavior modification and ongoing follow-up. When parental involvement was lacking or not included the treatment of childhood overweight and obesity were significantly poor (Epstein, Valoski, Kalarchian, & McCurley, 1998). Helping families understand obesity and recognize the problem while working effectively with them toward treatment and prevention represents a complex issue. Parental recognition of obesity is necessary factor in effecting dietary and life style changes. Consequently parental acknowledgment and acceptance that their child is

overweight is vital if interventions are to be initiated and successful. However, there is a lack of substantial research into attitudes and behaviors of parents and children towards exercise, eating, and childhood obesity (Hodges, 2003).

National Prevalence

In a recent study Hedley, Ogden, Johnson, Carroll, Curtin, and Flegal (2004) examined the most updated National Health and Nutrition Examination Survey (NHANES). NHANES includes a series of cross-sectional nationally representative health examinations surveys beginning in 1960. Sample size of 4,258 children and adolescents were surveyed. Twenty six percent were White, 30% Black and 35% Mexican Americans. A household interview and physical examination were conducted for each participant. During the physical height and weight were measured as part of a comprehensive set of body measurements. When earlier national health examination surveys were reviewed overweight children and adolescents findings were relatively stable from 1960 to 1980 at four to five percent.

However from NHANES II (1976-80) to NHANES III (1988-94) the prevalence of overweight nearly doubled to

11%. Currently NHANES estimates that overweight (1999-02) is at 16%. Therefore since 1994 the overweight in youths has not leveled off or decreased and is increasing to even higher levels. These findings suggest the likelihood of another generation of overweight adults who are at risk for overweight and obesity related health conditions such as elevated blood pressure, adverse concentrations of blood lipids, non-insulin dependent diabetes, cholelithiasis, sleep apnea and orthopedic abnormalities (Maynard, Galuska, Blanck, & Serdula, 2003).

Ogden, Fyar, Carroll, and Flegal (2004) investigated mean body weight, height and Body Mass Index in the US from 1960 to 2002 from a nationally representative sample of U.S. participants using a complex stratified cluster sampling design and found that national estimates from the National Health Examination and National Health and Nutrition Examination Surveys revealed mean weight and BMI have increased for both sexes and year of ages. For six to 11 year old children mean weight increased from approximately 65 pounds in 1963-5 to almost 74 pounds in 1999-02. This is a nine-pound increase among girls and boys. As for 12-17 year old teens the mean weight of boys increased to 15 pounds from 125 to 141 pounds. The girls

in the same age group increased to 12 pounds from 118 to 130 pounds while height showed only modest increases.

Another study supporting the increased prevalence of childhood obesity, (Stauss & Pollack, 2001) analyzed four to 12 year old children born to women enrolled in the National Longitudinal Survey of Youth (NLSY) to monitor overweight trends in children from 1986-1998 in the U.S. Data on the NLSY children were collected every two years and a growth data were available for 8,270 children. The subjects consisted of a nationally representative sample of African Americans, Hispanics and poor Whites. Strauss and Pollack (2001) found that from 1986-1988 the data supported increase prevalence of overweight children for African Americans and Hispanics 120% and Whites 50%. Additionally by 1998 21.5% of African American children, 21.8% of Hispanics and 12.3% of White children were overweight. Due to different and multiple types of weight measurements in use the results for this study may not reflect the current standardization measurement tool in use today. These studies reaffirm the national crisis with childhood obesity. Currently more researchers are examining how obesity is impacting health closer to home.

State and Local Prevalence

California Teen Eating, Exercise and Nutrition Survey (CalTEENS) is the first comprehensive statewide diet and physical activity survey conducted among California adolescents. This study by Forester, Fierro, Gregson, Hudes, Oppen, and Sugerman (2000) implemented a telephone survey of eating and exercise habits of randomly selected 1,213 adolescents ages 12-17 year olds. The ethnic breakdown for the sample was weighted against the 1990 census for California. It was 45% White, Eight percent African Americans, 35% Latino and 11% Asians/ others. Telephone surveys were conducted between February and April 1998 to assess overall wellness and the apparent rising rates of chronic disease risk factors being reported in young people, especially obesity, type 2 diabetes, high blood cholesterol, and high blood pressure. CalTEENS focuses on the modifiable lifestyle practices that increase these risk factors of poor diet and physical inactivity. Findings revealed that only two percent of adolescents met five basic recommendations for healthy eating and obtaining adequate physical activity outlined in the California Daily Food Guide (1990). Nearly one out of three adolescents was at risk or was already overweight, twice the expected rate with rates highest

among Latino and African Americans teens. Twice as much time was spent by teens watching TV or playing video games as being physically active. Since the survey is self-reported information, adolescents may underestimate their weight and inflate their height. Therefore the possibility the data ascertained may not reflect a child's habit since it was a single day's information.

Specifically San Bernardino County and Orange County, obesity is on the rise. San Bernardino County, California 13.7% of children less than five is obese which is above the statewide figure of 13.5% (California Food Policy Advocates, 2002). In the County of Orange in 2002 children from ages of less than five was at 15.4%. While from the ages of five to 20 were considered overweight at 21.1% compared with the state average of 16.2 and 20.8 respectively (Orange County Annual Report, 2004). Hence there is no indication that the prevalence of obesity among children is decreasing. In fact all indicators point to the levels of overweight are higher than ever among children and remain a major public health concern. With that decreasing quality of life and health are associated with this preventable epidemic; hence a comprehensive weight management is fundamental for the success of combating childhood obesity.

Effective Weight Management Programs

Epstein, Myers, Raynor, and Saelens (1998) conducted a meta-analysis on 32 studies of treatment of pediatric obesity. The researchers reviewed randomized controlled studies categorizing the different treatment methods. Diet, activity, behavior change, and treatment efficacy were analyzed. The goals of the meta-analysis were to identify characteristics of successful treatment. The findings showed that application of behavioral choice therapy, individualization of treatment and family support played a significant factor in maintenance and reduction of weight.

Epstein, Valoski, and Wing (1990) conducted a study using a prospective, randomized, controlled design, looking at the effects of behavioral family-based treatment on percent overweight and growth over ten years in obese six to 12 year old children were examined and the results demonstrated the effectiveness of combined parent-child intervention program. Limits of the study are that this is only generalizable to parents and children who sought out a weight management program.

Parents exert powerful influences on their children especially physical activity, diet, and psycho-social variables. One study measured whether parental activity

was a determinant of activity level and pattern in obese children (Kalakanis, Goldfield, Paluch, & Epstein, 2001).

Seventy-one families participated in the family based childhood weight control program. Outcomes demonstrated that parental activity levels are strongly correlated to children's activity level because children model their parent's behavior. In addition children and parents live in a shared family environment that provides both cues and social support for similar activity levels. The results are bounded by individuals volunteering for weight loss program and may differ from patterns of obese participants not seeking weight loss (Kalakanis, Goldfield, Paluch, & Epstein, 2001).

These studies provide evidence that family support and change is delivered through the parents. A need to emphasize healthy lifestyle and a family based management of childhood obesity is essential to be successful. Hence a lack of parental involvement would promote poorer outcomes. Therefore the parental recognition of weight problems is required before health intervention can be initiated.

Parental Beliefs and Perceptions

Maynard, Galuska, Blanck, and Serdula (2003)

quantified maternal misclassification of child weight status and examined determinants associated with maternal perceptions of child weight status. The investigators looked at data from the third National Health and Nutrition Examination Survey (1988-1994). The sample included 5500 children from the ages of two to 11 with maternal interview data. Results revealed that 32.1% of mothers reported their overweight child as "about the right weight." Younger children had significantly greater odds of maternal underclassification of children's overweight status. While children at risk for overweight, mothers reported 14% to be overweight, whereas 29% considered daughters to be overweight. Maternal misclassification of at risk children as overweight was significantly greater for daughters, older children and children with mother who had lower BMI. Some limitations with this study is the data from 1988-1994 was not current and BMI as indicator of adiposity in children is limited.

Prevention efforts should begin early in life and involve parents according to Baughcum, Chamberlin, Deeks, Powers, and Witaker (2000). To determine what factors are associated with mothers' failure to perceive when their

preschool children are overweight a cross-sectional survey was implemented at offices of private pediatricians and WIC clinics. Six hundred twenty-two mothers with children from 23 to 60 months of age participated. Mothers were asked if they considered themselves or their children overweight. Findings revealed 79% of mothers failed to perceive their overweight child as overweight and among the 99 mothers with overweight children, low maternal education was associated with failure to perceive their children as overweight after adjusting for low family income, maternal obesity, age and smoking. Some restrictions with the study were that not a single protocol for obtaining anthropometric measurements was applied to all study sites. Furthermore wide spread emphasis in the U.S. on weight concerns and dieting may lead mothers to underreport weight and refrain them from labeling their overweight child as overweight.

Gable and Lutz (2000), conducted a convenience study of 65 parents and child pairs using parent completed survey and child body mass index to examine the possible family process that put children at risk and to illustrate the household environment and parenting beliefs. Participants were 15 fathers and 50 mothers with 65 six to ten-year old children recruited at the annual community

health fair. The parents were primarily White Americans (83%), six percent Black, five percent Asian/Pacific Islander, three percent Hispanic and three percent combination of races. There was a correlation between less hours of active play and significantly watching more television. Also the parenting beliefs and attitudes between the obese and non-obese children revealed parents of obese children reported a greater tendency toward inappropriate expectations of the child's nutrition. A number of limitations exist for this study, for example the parents self-reports may be biased and parents may have under reported to survey questions. The method of recruitment of the subjects from health fair may indicate that parents had concerns about the child's health and may have affected the survey responses. Also the small sample size of 65 may reduce generalization to the target population.

Myers and Vargas (2000) sampled 200 parents, mainly Hispanic origin (95%), one percent African-Americans and 1.5% American Indian. They were identified by convenience sampling method when they visited the health center for WIC or Child Health Services. Criteria for inclusion were parents with a child between ages of two to five above the 90th percentile for weight and height. The purpose of the

study was to increase the understanding about parent perceptions and beliefs about childhood obesity and their own child's obesity by means of a brief parent questionnaire. Thirty-five percent of parents of obese children did not perceive that their child was obese. The interviewer had to make an observational judgment in regards to the staff's perception of the child's obesity at the health center and which may lead to bias if the interviewer misinterprets the staffs' response to the child.

Summary

The literature review demonstrates that there is a markedly increasing prevalence of overweight and obesity in the last two decades in the U.S. The findings reveal continuing disparities by sex, and between racial/ethnic groups in the prevalence of overweight and obesity. Adverse health effects, hypertension, asthma, hyperinsulinemia, orthopedic problems, social rejection and low self-esteem are consequences associated with overweight and obesity.

Effective interventions in weight management included key features of gathering family support and parental involvement. The studies suggest the whole family system

is crucial in impacting better outcomes. It is vital for parental acknowledgment and recognition of the overweight problem before actual interventions can begin. Therefore further studies must be conducted on parental perceptions and beliefs on overweight and obesity. The early recognition of children who are overweight or at risk for becoming overweight is important because prevention and treatment strategies may be implemented in life.

CHAPTER THREE

METHODOLOGY

Introduction

A descriptive quantitative survey was designed to explore and examine parental perceptions of their child's weight and health.

Participants Defined and Data Collection

The eligibility criteria for the study required participants to be adults (over the age of 18 years of age) who were parents with one or more children 18 years of age and younger. Participants would be self-selected volunteers recruited through convenience and snowball sampling techniques. Flyers were first circulated to key contacts within the community of Orange County and San Bernardino. The questionnaire was distributed over several weeks in residential neighborhoods in San Bernardino, hospital settings in San Bernardino and on one Saturday at an Orange county health fair. The individuals were invited to complete the questionnaire if they met the eligibility criteria of the study. Oral informed consent was given to all participants (see Appendix C). A brief summary of how to complete the survey was given. The parents were informed the process was voluntary and would take ten to

15 minutes to read the directions and answer the simple question on their socio-demographics and yes/no questions regarding parental perceptions on their child's weight. Upon verbal consent the participants were given a pen/pencil and questionnaire to complete. Each individual was given their own clipboard and privacy to fill out the survey. After the participants completed the survey to place it in the box or hand back to the research assistant and then they were given a packaged pedometer as a thank you. All of the participants completed the questionnaire independently using the English or Spanish version. Before any data was collected the Institutional Review Board of California State University, San Bernardino, approved the study (see Appendix A).

Description of the Process

A non-experimental, cross-sectional, quantitative design was utilized to collect data. Participants were available at an Orange county health fair, through hospital work settings in San Bernardino, residential neighborhoods and individuals known to other sample members who were referred because they met the eligibility criteria. A written structured survey was developed to collect demographic data, and identify parental

perceptions on weight and health related to the four objectives of the study (see Appendices D & E).

Method

The method used to collect the data consisted of a specifically constructed measurement tool used in this project. Initially a literature review was conducted in relation to parental perceptions and since few studies were available at the time a questionnaire was developed focused on the aims of the study related to perceptions, weight, health, acknowledgment of concern, and provider/school recognition of weight issues. Reliability and validity testing were done on the questionnaire. Three mothers tested the tool for a short test-retest reliability by completing the instrument twice in one day. The results of the second administration was exactly the same compared to the first. An experienced pediatric nurse practitioner of 20 years reviewed the tool for content validity. Revisions were made to the measurement tool as a result of the testing to assure for consistency and accuracy of responses. Then the tool was reviewed again by the pediatric nurse practitioner. She verified for content validity.

Instrument

A questionnaire was designed for the study (see Appendix D). The questionnaire was created for parents over the age of 18 years with children under 18 years of age. The questionnaire was translated into Spanish since Orange County and San Bernardino County had a significant population of Spanish speaking members and the study did not want to limit data to those who only read English (see Appendix E). The questionnaire was divided into two parts. The onset of the questionnaire collected the participant's demographic data included gender, age, ethnicity, marital status, and years of schooling, household income, health care coverage, and number of children. The second part asked each participant to answer questions for each child. Demographic data and parental perceptions were collected for each child the participants completed a survey for. Questions focused on the child's age, gender, current weight, a series of pictures from which the participant selected one which represented the child's current weight and another picture from which the participant selected the one which represented a healthy weight. From the left, picture one represented the child who is slim, the second picture characterized a child who was a normal weight. The third picture corresponded to an overweight child and the

fourth picture depicted an obese child. Eight dichotomous questions were created to generate data in relation to the parent's perceptions regarding their child's weight and health.

Analysis

The data was extracted and coded for analysis. The standard Statistical Package for the Social sciences (SPSS, 11.0 Version) was used to analyze the data. The category components of the survey resulted in frequency and percentages. Cross tabs were used to obtain the means and standard deviation for each component of the survey that were continuous numerical.

CHAPTER FOUR
RESULTS AND DISCUSSION

Introduction

This was a descriptive, cross-sectional, quantitative study. It was designed to explore parental perceptions regarding their child's weight and health. A total of 44 parents participated in this study by completing the study survey. The participants had the mean age of 36.48 (SD = 8.69) with the youngest being 20 years of age and the oldest 53 years old (see Table 1). A majority were mothers. Thirty-eight (86.4%) identified themselves as female and 6 (13.6%) were male. The ethnicity of the participants included 17 (38.6%) Hispanic, 20 (20.5%) White, 20 (20.5%) Asian, four (9.1%) Black, one (2.3%) Native American, and three (6.8%) Other. Over half of the participants were married (25, 56.8%) and nine were divorced (20.5%), seven were single (15.9%), with two who were separated (4.5%). Mean family size was 2.77 and ranged from one to five.

Parental Demographics

Over 90% of children lived with the participant who completed the survey on a fulltime or part time basis. On average most participants graduated high school having

Table 1. Participant Demographic Variables

Participants (n = 44)		
	<u>M</u>	<u>SD</u>
Age	36.5	8.7
Years of Schooling	12.7	3.3
Number of Children	2.8	1.3
	<u>Frequency</u>	<u>Percentage</u>
Ethnicity		
Hispanic	17	38.6
Black	4	9.1
White	9	20.5
Asian	9	20.5
Native American	1	2.3
Other	3	6.8
Gender		
Female	38	86.4
Male	6	13.6
Marital Status		
Married	25	56.8
Single	7	15.9
Divorced	9	20.5
Separated	2	4.5
Household Income		
0-10,000	6	13.6
10,001-20,000	2	4.5
20,001-30,000	6	13.6
30,001-40,000	4	9.1
40,001-60,000	11	25
60,001-80,000	4	9.1
80,001-100,000	3	6.8
> 100,000	8	18.2
Healthcare Coverage		
Yes	42	95.5
No	2	4.5

12.72 mean years of education with a minimum of five years to a maximum of 17 years. Most of the participants had healthcare coverage (42, 95.5%). Family income ranged from \$0-10,000 to greater than \$100,000. The largest percentage of families (25%) had an income of \$40,000-60,000.

Child Demographics

The 44 participants reported on 88 children with an average of two children per participant and a range of one to five. The average age of the children was 9.2 (SD = 4.8). The children had a mean weight of 82.5 pounds (SD = 53.3) (see Table 2). Forty-nine of the children were boys (55.7%) and 39 were girls (44.3%). Seventy nine of the children lived with the participant who completed the survey on a full time basis (89.8%), four live with the participant who completed the survey, part time (4.5%), and five did not live with the participants who completed the survey at all (5.7%).

Table 2. Child Demographic Variables

Participants' Children (n = 88)		
	<u>M</u>	<u>SD</u>
Age (years)	9.2	4.8
Weight	82.5	53.3
	<u>Frequency</u>	<u>Percentage</u>
Gender		
Female	39	44.3
Male	49	55.7
Child live with parent		
Full Time	79	89.8
Part Time	4	4.5
No	5	5.7

Parental Perceptions

Participants' responses to the survey questions regarding their children (n = 88) demonstrated that 31 (35.2%) of participants perceived that picture number 1 (slim) best represented their child, 36 (40.9%) number 2 (normal), 14 (15.9%) number 3 (overweight), and five (5.7%) (obese) (see Table 3). When asked what picture was the healthiest weight for their child, 21 (23.9%) reported picture number 1 (slim), 56 (63.6%) reported picture number 2 (normal), seven (8%) reported picture number 3 (overweight), and one (1.1%) reported picture number 4 (obese).

The final eight questions of the survey examined parental perceptions on their child's weight and health (see Table 3). Ninety three percent of the participants believed it was not okay for their child to be overweight. Seventeen percent of the participants did believe that their child was currently overweight. Findings also indicated 13.6% of the participants believed that their child's weight was unhealthy. On the other hand, 84.1% of the participants thought that their child was healthy.

Participants were asked if they worried that their child was overweight with 30.2% answering "yes" and 69.2% answering "no". The opposite of worry was asked: did participants not worry over their child being overweight. Participants responded "no" at 52.3% and 45.5% responded "yes". Lastly participants were invited to answer whether the school and or a provider told them that their child was overweight. The data demonstrate 6.8% of providers and 1.1% of schools told participants their child was overweight.

Table 3. Participant Perception Variables

Actual Children (n = 88)		
Category	<u>Frequency</u>	<u>Percentage</u>
What picture best represents your child's weight?		
Slim	31	35.2
Normal	36	40.9
Overweight	14	15.9
Obese	5	5.7
What picture do you believe is the healthiest weight for your child?		
Slim	21	23.9
Normal	56	63.6
Overweight	7	8
Obese	1	1.1
Dichotomous	<u>Yes (%)</u>	<u>No (%)</u>
Do you believe it is okay for your child to be overweight?	2.3	97.3
Do you believe your child is overweight?	17	83
Do you believe that your child's weight is unhealthy?	13.6	86.4
Do you believe that your child's weight is healthy?	84.1	15.9
Do you worry about your child being overweight?	29.5	68.2
Do you not worry about you child being overweight?	45.5	52.3
Did the school tell you your child is overweight?	1.1	96.6
Did your provider/doctor tell you your child is overweight?	6.8	89.8

Subgroup Analysis

A subgroup analysis (n = 6) was done to examine the relationship between being told by a provider and/or

school that their child is overweight and recognizing their child as being overweight (see Table 4). The study results revealed of the six participants who had been told by their provider and or school that their child was overweight, all 6 (100%) of the participants also saw their child as being overweight. None of the participants believed it was okay to be overweight. More over, all six of these participants worried over their child being overweight.

This subgroup responses to the picture survey questions regarding their children indicated that four (66.7%) of the participants perceived picture number 4 (obese) best represented their child, and two (33.3%) perceived picture number 3 (overweight). When asked what picture was the healthiest weight for their child four (66.7%) of the participants reported picture number two (normal), and two (33.3%) of participants reported picture number three (overweight) (see Table 4).

Table 4 further contains the socio-demographic characteristics of the subgroup. The mean age for these children is 13 and average weight is 194 pounds. Most of children who were identified as overweight in this subgroup were boys (four, 66.7%) while (two, 33.3%) were girls. A majority were Asian (four, 66.7%), one (16.7%)

was Black and one (16.7%) was White. All of children lived with the parent who was completing the survey full time and most of them came from divorced families (four, 66.7%).

Table 4. Subgroup Analysis of Participants Who Were Told By the Provider or School Their Child was Overweight and Also Saw Their Child as Overweight

Participants' Children (n = 6)		
	<u>M</u>	<u>SD</u>
Continuous		
Age of Child (years)	13.17	2.3
Weight of Child	194.7	85.7
	<u>Frequency</u>	<u>Percentage</u>
Categorical		
Gender of Child		
Female	2	33.3
Male	4	66.7
Ethnicity		
Black	1	16.7
White	1	16.7
Asian	4	66.7
Parental Marital Status		
Married	2	33.3
Divorced	4	66.7
Child lives with parent		
Full Time	6	100
What picture best represents your child's weight?		
Overweight	2	33.3
Obese	4	66.7

Categorical	<u>Frequency</u>	<u>Percentage</u>
What picture do you believe is the healthiest weight for your child?		
Normal	4	66.7
Overweight	2	33.3
Parental Perceptions and Beliefs Questionnaire Item		
Dichotomous	<u>Yes (%)</u>	<u>No (%)</u>
Do you believe it is okay for your child to be overweight?	0	100
Do you believe your child is overweight?	100	0
Do you believe that your child's weight is unhealthy?	100	0
Do you believe that your child's weight is healthy?	0	100
Do you worry about your child being overweight?	100	0
Do you not worry about you child being overweight?	0	100
Did the school tell you your child is overweight?	16.7	83.3
Did your provider/doctor tell you your child is overweight?	100	0

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

Introduction

One in four children is overweight in the United States (American Academy of Pediatrics, 2005). Over the past four decades obesity continues to be on the rise in the nation (Hedley, Ogden, Johnson, Carroll, Curtin, & Flegal, 2004). Obesity can have adverse physical, emotional, and social impact on children's lives, placing youth at risk for chronic illnesses such as coronary heart disease, diabetes, and high-blood pressure (Epstein, Myers, Raynor, & Saelens, 1998). Particularly, in San Bernardino and Orange County, California obesity rates are greater than the averages for the nation (CDC, 2005). There has been extensive studies conducted on physiological, behavioral and genetic factors with weight, few studies have examined the social and psychological perceptions among parents, regarding their child's weight and health. Future research is needed into attitudes and behaviors of parents and children (Hodges, 2002).

The purpose of this study is to explore parental perceptions of their child's weight and health. A questionnaire was used to capture demographic data, to

explore parental perceptions of their child's weight, to explore parent's perceptions of healthy and unhealthy weight for their child, to examine the relationship between being told by a provider and or school that their child is overweight and acknowledging their child is overweight, and to describe parental feeling or worry with an overweight or obese child. Parents are the main responsible caregiver and source of authority and influence on their children. Exploring parental perceptions is critical to understanding the increase prevalence of this epidemic among children.

Conclusions

Data from 44 participants who reported on 88 children was collected. Over 70% of the participants were minorities. The largest percentage of participants had a high school education and earned on average a middle class income. A majority of the participants had health care coverage. The average child weighed 90 pounds and was nine years old. Over half of the children lived with the parent completing the survey on a full time basis. According to Becker and Maiman's Health Belief Model (HBM) (1975) these are the study's modifying factors.

The survey consisted of ten questions regarding perceptions of the parent. The initial picture questions in the survey reflected that most of the participants visually perceived that their child was slim to normal in size. A majority also perceived that a healthy weight was slim to normal. A small percentage less than ten percent considered overweight to obese as healthy. It can be concluded that some participants still do not understand overweight and obesity is a health problem. Baughcum, Chamberlin, Deeks, Powers, and Whitaker (2000) speculated that the reason may simply be parents are not aware this is a major health risk associated with being overweight or parents choose not to acknowledge or address it. This conforms with the Health Belief Model (HBM) (1975) that parents may perceive that their susceptibility is low due to lack of understanding on what it means to be overweight.

A large number of parental participants believed it was not okay to be overweight and a tiny number believed it was okay to be overweight. This further confirms many people regard overweight as a health issue however some still do not consider being heavy as a serious medical condition. Seventeen percent of participants believed that their child was actually overweight also deemed being

overweight as unhealthy at 13.6%. These percentages are further validated when participants responded that no they did not believe that their child's weight was healthy at 15.9%. These percentages are fairly consistent with each other, suggesting that those parents who perceived their child as overweight understand overweight and obesity has a negative impact on the health of their child and quality of life. Overweight children have significant and complex physical, psychological and social difficulties that can significantly affect them throughout their lives (Epstein, Myers, Raynor, & Saelens, 1998). For these participants their perceived seriousness according to HBM is high due to the clinical, medical, social challenges that these parents believe obesity has created for them.

Furthermore the analysis surprising generated data that most participants were clearly worried over their child being overweight with percentages as high as 30.2% said "yes" and this was further confirmed by 53.2% of participants responded by selecting "no" to: do you not worry over your child being overweight. It can be concluded that being heavy is a health concern for most participants and participants who did not perceive their child as overweight still had current worries about their child's weight. Applying Becker and Maiman (1975) Health

Belief Model, worry was viewed as the parent was troubled over their child's weight and is an internal cue to take action. It is the emotional result of the perceived seriousness to being overweight. Research has shown education on practical health promotion and overweight prevention can help to give parents more control over how to combat this important problem and decrease worry (Borra, Kelly, Shirreffs, Neville, & Geiger, 2003).

On the other hand, when surveyed, only 17% of those same participants actually acknowledged that their child was overweight. This percentage is much lower than the national or even county averages of 25 to 30 percent of children whose body mass index is over the 95th percentile specific to age and gender (AAP, 2005). Therefore the results are in agreement with current research that families under-classify their child being overweight (Baughcum, Chamberlin, Deeks, Powers, & Whitaker, 2000).

A lack of acknowledgment of their child falling within higher body weight implies participants may be hesitant to label their child as obese. Obesity can be viewed as a stigma and have a profound affect on the parent and child psychosocially. For one, parents may be concerned they are not good parents because their child has a problem with obesity and secondly the child maybe

marginalized and criticized among their peers.

Alternatively, mothers and fathers may believe that young children may out grow being overweight. Furthermore being overweight may signify good health and parental competence. These are all barriers against taking action as indicated by the Health Belief Model.

Of the 17% of participants who acknowledged their child as overweight 100% of participants had been informed by a provider that their child had a weight problem. Signifying that increasing awareness with families on what overweight means and the associated risk is an important beginning to recognition and acceptance of the health condition. Therefore within the Health Belief Model, this subgroup's perception of vulnerability and threat was very high, minus their barriers provided enough worry to take action. In 2000, Baughcum, Chamberlin, Deeks, Powers, and Whitaker, suggested that parents must first recognize and accept their child's overweight problem as the first step to becoming change agents.

Limitations of the Study

The study has some limitations. First weight was based on estimate self reports by parents and height measurements were not requested on the survey. Second the

widespread emphasis in the United States on weight concerns and dieting may have led parents to under report weight and cause families to refrain from labeling their overweight child as overweight. This may explain the small percentage of participants who identified their child as overweight. In addition this study is not generalizable to the whole population because of the small sample size in the study.

Recommendations

The challenge to public health, schools and all health care professionals is to assist diverse families on the recognition and understanding about overweight and obesity on their children's lives. Further research into exploring, parental feelings of worry should be more closely investigated because a greater percentage of parents in the study confessed having feelings of unease and anxiety with their child being overweight, which maybe a better reflection of parental perception of the overweight problem than strictly weighing or asking do you think your child is overweight. Further exploration of why parents did not perceive their child to be overweight is recommended because the survey had mainly closed ended questions and did not allow for qualitative exploration.

Additionally, cultural differences regarding race and ethnicity may need to be examined for parental perceptions regarding weight and health. Over eighty percent of parents were minorities who acknowledged they had an overweight child in the questionnaire. Advanced practice nurse (APN) are key players in assessing and determining whether families recognize overweight and obesity in their child to effectively educate and plan care. APN can make the best recommendations for program planning and implementation on how to address overweight and obesity not only with one child but within school based nutrition and physical activity programs, local and state health care agencies, family resource centers and policy development.

Summary

For parents to involve themselves in childhood obesity prevention, they must first be cognizant when their child is becoming overweight and be concerned with the consequences. Many parents may not perceive their child as overweight (Hodges, 2003). Health care professionals must increase parental awareness about what is obesity and the prevention of this health problem. As health care professionals it is important to help parents

understand the interplay of familial influences in the disease process (Epstein, Valoski, & Wing, 1990). Parents have powerful impact on their children. They serve as both a source of authority and a role model for their child. Therefore change is delivered through the parents emphasizing healthy lifestyle, family based management and prevention (Golan & Weizman, 2001). By helping parents understand the interaction of these multiple influences, the health care system and advanced practice nurse can better guide and support parents in effective promotion of healthy behaviors in their children.

APPENDIX A
INSTITUTIONAL REVIEW BOARD

**Institutional Review Board (IRB)
California State University, San Bernardino
Ph: (909) 880-5027 Fax: (909) 880-7028**

February 7, 2005

Ms. Julie Pham
c/o Dr. Ellen Daroszewski
Department of Nursing
California State University
5500 University Parkway
San Bernardino, California 92407

**CSUSB
INSTITUTIONAL
REVIEW BOARD**
Exempt Review
IRB# 04040
Status
APPROVED

Dear Ms. Pham:

Your application to use human subjects, titled, "Parental Perceptions of Body Mass Index on Their Child" has been reviewed and approved by the Institutional Review Board (IRB). Your informed consent document is attached. This consent document has been stamped and signed by the IRB chairperson. All subsequent copies used must be this officially approved version. A change in your informed consent requires resubmission of your protocol as amended.

You are required to notify the IRB if any substantive changes are made in your research prospectus/protocol, if any unanticipated adverse events are experienced by subjects during your research, and when your project has ended. If your project lasts longer than one year, you (the investigator/researcher) are required to notify the IRB by email or correspondence of *Notice of Project Ending* or *Request for Continuation* at the end of each year. Failure to notify the IRB of the above may result in disciplinary action. You are required to keep copies of the informed consent forms and data for at least three years.

If you have any questions regarding the IRB decision, please contact Carmen Jones, (Interim) IRB Secretary. Mrs. Jones can be reached by phone at (909) 880-5027, by fax at (909) 880-7028, or by email at ccjones@csusb.edu. Please include your application identification number (above) in all correspondence.

Best of luck with your research.

Sincerely,

Joseph Lovett, Chair
Institutional Review Board

JL/ccj

cc: Dr. Ellen Daroszewski - Department of Nursing

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
INSTITUTIONAL REVIEW BOARD COMMITTEE
APPROVED 2/7/05 VOID AFTER 2/6/06
IRB# 04040 CHAIR C. Jones

APPENDIX B

MODEL

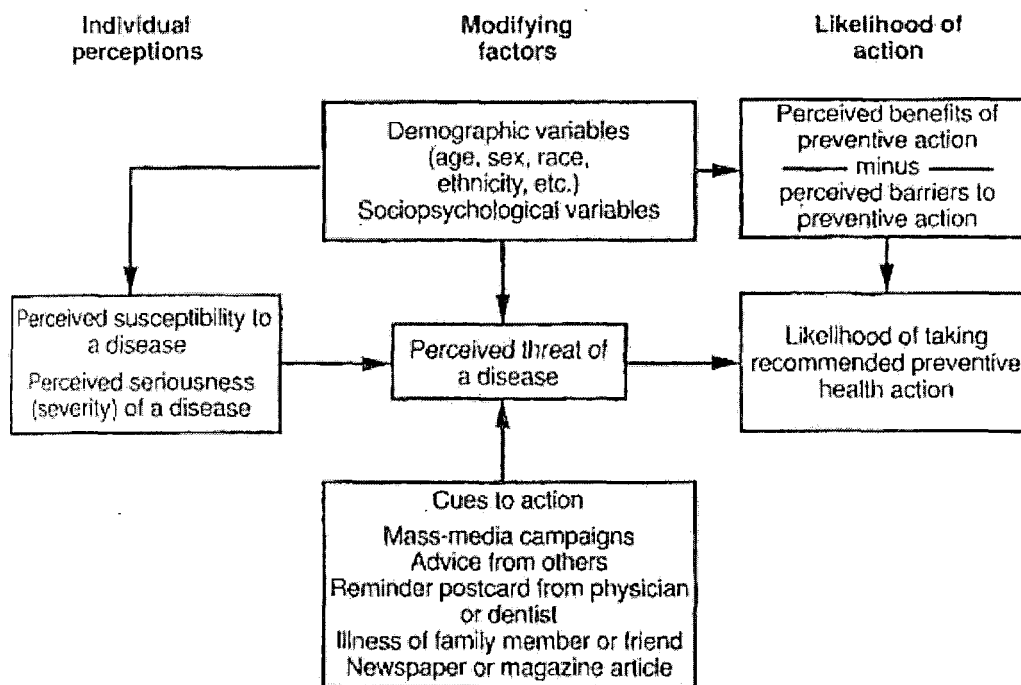


Figure 4.1 Elements of the health-belief model.
 Reprinted from Becker and Maiman (1975).

APPENDIX C
INFORMED CONSENT

Informed Consent:

The informed consent by the participant will be obtained orally. A written copy will be available in English and Spanish and will be offered to the participants. The text will read the following.

Oral Informed Consent

You have been asked to participate in a study called "Parental Perceptions on Body Mass Index on Their Child." The purpose of this study is to collect information about your views and beliefs about the weight and height of your child (children). This study is being conducted by Julie Pham, graduate nursing student, with the supervision of Dr. Ellen Daroszewski, nursing professor at California State University, San Bernardino. This study has been approved by the institutional review board at California State University, San Bernardino.

If you decide to participate in the study, you will be asked to fill out a questionnaire in English or Spanish. Participation will take 10-15 minutes. You do not need to tell us your name or any information that will identify you. We will record your gender, age, race, which is your culture that you were raised as a child, years of education, and your views about your child's (children's) weight and height. All the information collected will be kept confidential and will be used for the study. All the information will be reported in group form. You can receive the results of the group study in August 2005 when it will be completed at the Pfau library at California State University, San Bernardino or by contacting Dr. Ellen Daroszewski at (909) 880-7238.

Your participation in this study is totally voluntary. You do not have to answer any questions that you do not want to. There are no risks to participating in this study. If after you participate you feel uncomfortable about the information you gave you can have your answers back. If you have a question or concerns about your child's (children's) weight, height, or health contact the school nurse or healthcare provider. When you have finished the questions you will be invited to pick a gift from the basket as a thank you. In order to assure validity of the study, we ask that you do not discuss your answers with other participants. If you need to speak to someone regarding the study, have concerns, or feel worried, please contact Dr. Ellen Daroszewski at (909) 880-7238.

Back Translated into English by: Martha-Annabelle Sandoval

Martha-Annabelle Sandoval

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

INSTITUTIONAL REVIEW BOARD COMMITTEE

APPROVED 2/7/05 VOID AFTER 2/6/06
IRB# 04640 CHAIR C Jones

APPENDIX D

SURVEY

Child # _____

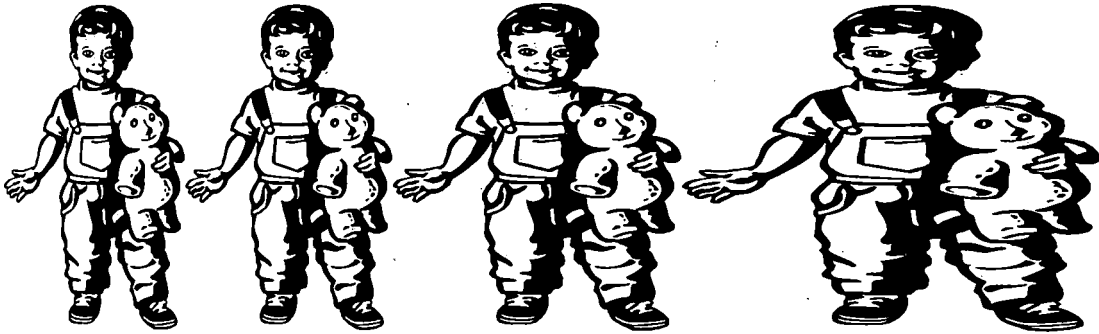
10. Age of Child # 1: _____

11. Gender of Child #1 (please circle one): Female Male

12. Does this child live with you: Full-time Part-time No

13. What is your child's weight now: _____ (If unknown, please estimate)

14. What picture best represents your child's weight (please circle a picture below)



15. What picture do you believe is the healthiest weight for your child (please circle a picture below):



16. Do you believe it is okay for your child to be overweight: Yes No

17. Do you believe your child is overweight: Yes No

18. Do you believe that your child's weight is unhealthy: Yes No

19. Do you believe that your child's weight is healthy: Yes No

20. Do you worry about your child being overweight:	Yes	No
21. Do you not worry about your child being overweight:	Yes	No
22. Did the school tell you your child is overweight:	Yes	No
23. Did your provider/doctor tell you your child is overweight:	Yes	No

Please place any comments here.

Thank you for participating, please place survey in the box. In appreciation for your time please select a small gift from the basket. (One per participant)

APPENDIX E
SPANISH SURVEY

Nino(a) # _____

10. Edad del nino(a) # _____

11. El genero del nino (porfavor circule uno): Hembra Macho

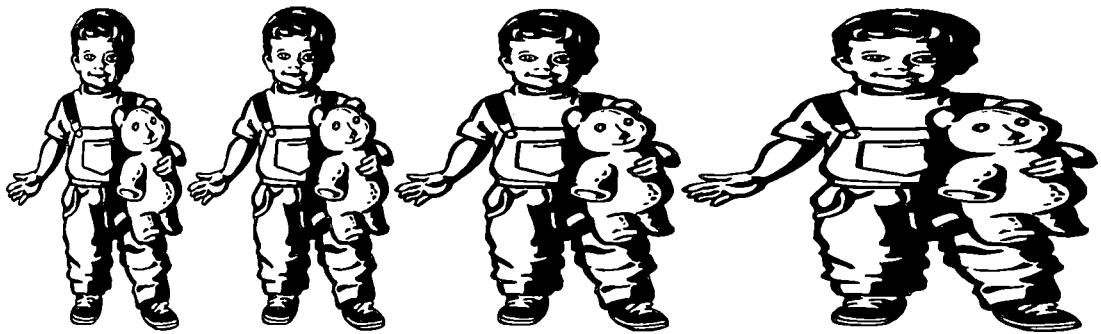
12. Vive este nino con usted: Tiempo completo Medio tiempo No

13. Cual is el peso presente de su nino _____ (si no sabe porfavor estime)

14. Cual dibujo major representa el peso de su nino (porfavor circule un dibujo)



15. Cual dibujo piensa usted que seria el peso mas sano para su nino (porfavor circule un dibujo)



16. Usted cree que esta bien que su nino(a) este sobrepeso: Si No

17. Usted cree que su nino(a) esta sobrepeso: Si No

18. Usted cree que el peso de su nino(a) esta enfermizo: Si No

19. Usted cree que el peso de su nino(a) esta sano: Si No

20. Esta preocupado que su nino(a) este sobrepeso: Si No

21. No esta preocupado que su nino(a) este sobrepeso: Si No

22. Le ha dicho la escuela que su niño(a) esta sobrepeso: Si No

23. Le ha dicho su medico que su niño(a) esta sobrepeso: Si No

Porfavor ponga cualquier comento aqui:

Gracias por su participacion. Porfavor ponga la forma en la caja. En reconocimiento por su tiempo porfavor escoja un regalo pequeno de la canasta. (Uno por participante)

REFERENCES

- American Obesity Association. Retrieved February 13, 2005, from http://www.obesity.org/subs/fastfacts/obesity_what2.shtml
- Baughcum, A. E., Chamberlin, L. A., Deeks, C. M., Powers, S., Witaker, R. C., (2000). Maternal Perceptions of Overweight Preschool Children. *Pediatrics*, 106(6), 1380-1287.
- Becker, M. H., & Maiman, L. A., (1975) Sociobehavioral Determinants of Compliance with Medical Care Recommendations. *Med Care*, 13, 10-24.
- Center for Disease Control and Prevention [CDC]. Retrieved March 20, 2005, from <http://cdc.gov/needphp/dnpa/bmi/bmi-for-age.htm>
- Center for Disease Control and Prevention [CDC]. Retrieved March 20, 2005, from http://www.cdc.gov/pednss/how_to/interpret_data/case_studies.htm
- Center for Disease Control and Prevention [CDC]. Retrieved March 20, 2005, from <http://www.cdc.gov/nchs/products/pubs/hestats/overweht99.htm>
- Epstein, L. H., Myers, M. D., Raynor, H. A., Saelens, B. E., (1998). Treatment of Pediatric Obesity. *Pediatrics*, 101(3), 554-571.
- Epstein, L.H., Valoski, M., Wing, R., (1990). Ten-Year Follow-up of Behavioral, Family-based Treatment for Obese Children. *JAMA* 264(19), 2519-2539.
- Forerster, S. B., Fierro, M. P., Gregson, J., Hudes, M., Oppen, M., Sugerman, S. (2000). 1998 California Teen Eating, Exercise Nutrition Survey. Public Institute. Berkeley, CA.
- Gable, S., & Lutz, S. (2000). Household, Parent and Child Contributions to Childhood Obesity. *Family Relations*, 49(3), 293-301.
- Golan, M., & Weizman, A., (2001). Familial Approach to the Treatment of Childhood Obesity: Conceptual model. *Journal of Nutrition Education*, 33(2), 102-108.

- Healthy People 2010. Retrieved January 5, 2005, from <http://www.health.gov/healthypeople/documents/HTML/Volume2/19Nutrition.htm>
- Healthy People 2010. Retrieved January 5, 2005, from <http://odphp.osophs.dhhs.gov/pubs/LeadingIndicators/Idgsec1.html>
- Hedley, A. A., Ogden, C. L., Johnson, C. L., Carroll, M. D., et al. (2004). Prevalence of Overweight and Obesity Among US Children, Adolescent, and Adults 1999-2002. *JAMA*, 291(23), 2847-1851.
- Hodges, E. A. (2003). A Primer on Early Childhood Obesity and Parental Influence. *Pediatric Nursing*, 29(1), 13-20.
- Kalakanis, L., Goldfield, G., Paluch, R., Epstein, L. (2001). Parental Activity as a Determinanat of Activity Level and Patterns of Activity in Obese Children. *Research Quarterly for Exercise and Sport*, 72(3), 202-209.
- Maynard, M. L., Galuska, D. A., Blanck, H. M., Serdula, M. K. (2003). Maternal Perceptions of Weight Status of Children. *Pediatrics*, 111(5), 1226-1232.
- Myers, S. & Vargas, Z. (2000). Parental Perceptions of the Preschool Obese Child. *Pediatric Nursing*, 26(1), 23-29.
- Must, A. (1996) Morbidity and Morality Associated with Elevated Body Weight in Children and Adolescents. *American Journal of Clinical Nutrition*, 63, 445S-447S.
- National Center for Health Statistics. (2005). Retrieved March 20, 2005, from <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm>
- Polit, D. & Hungler, B. (1995). *Nursing Research: Principles and Methods* (6th ed.). Philadelphia: Lippincott.
- Strauss, R. & Pollack, H. (2001). Epidemic Increase in Childhood Overweight, 198-1998. *Journal of the American Medical Association*, 286(22), 2845-2848.

Tenth Annual Report on the Conditions of Children in
Orange County. (2004). Retrieved February 15, 2005,
from <http://www.ochealthinfo.com/cscc/report>