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Holly Spencer Kihm

*Louisiana State University and Agricultural and Mechanical College*

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WHO SAID “WORDS CAN NEVER HURT?” AN INVESTIGATION OF CHILD  
WEIGHT STATUS, CHILDHOOD PSYCHOSOCIAL VARIABLES, AND LATER  
ADULT QUALITY OF LIFE

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
In partial fulfillment of the  
Requirements for the degree of  
Doctor of Philosophy

in

The School of Human Ecology

by

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May 2006

## ACKNOWLEDGEMENTS

I would like to thank my committee members for all of their encouragement and support during my time at LSU as well as their expertise in guiding me through this project. I would like to thank my committee chair, Dr. Pam Monroe, for her belief in my ability to succeed and excel in my studies and for her advice, guidance, and calming smile in which she quietly motivated me to do my best work.

I would like to express my appreciation to Dr. Melinda Sothern who introduced me to clinical research regarding childhood obesity, and helped me to develop my dissertation research. Dr. Sothern was always eager to share her expert knowledge of the field with me and encouraged me to keep searching for answers to my research questions. Not only did Dr. Sothern provide me with direction in my research, but she showed continued support and enthusiasm for all of my endeavors.

I would like to thank Dr. Robert Laird for his support throughout my studies at LSU. Dr. Laird was a mentor for me as I learned just how much time, effort, and dedication is necessary in order to effectively teach courses at the university level. His patience and advice throughout my teaching experiences have been, and always will be, very much appreciated. Dr. Laird also provided expert advice and instruction in the organization of this project as well as the statistical analyses and interpretation of the analyses used in this project.

I would also like to thank Dr. Carol O'Neil for sharing her expert knowledge in the field of clinical nutrition with me. She introduced me to current research studies in the field which helped me to develop a more comprehensive literature review for this project. Dr. Maria Kosma introduced me to the field of Kinesiology, specifically, the psychology

of physical activity. She provided me with information and research regarding current theories of motivation as well as theories that aimed to facilitate behavior change. Her knowledge also helped me to develop a more comprehensive literature review for this project, and was very much appreciated. I would also like to thank Dr. Philip Brantley for his participation on my committee as the Dean's Representative.

In addition to my committee members, I would like to express my appreciation for all of the unyielding support and motivation that my husband, Andy, provided for me throughout my work at LSU. From sending me good luck roses on my very first day of class to celebrating whole-heartedly with me as I accomplished milestones, Andy has been my biggest cheerleader and source of strength as I moved through the program. I would also like to thank my family, who has supported me and encouraged me to excel in my studies. Even though we have been separated by distance, I always knew that good advice or a humorous pep-talk was only a phone call away. Without support from Andy and my family members I would not have been able to make this incredible journey.

Thank You!

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## ABSTRACT

The first purpose of the research project was to examine the relationship between child weight status and adult quality of life. The second purpose of the research project was to test psychosocial variables as mediators of the relationship between child weight status and adult quality of life.

A total of 164 undergraduate and graduate students from Louisiana State University participated in the study. The students completed five online questionnaires that were used to assess variables such as child weight status, adult weight status, history of childhood teasing experiences, child self-concept, and adult quality of life.

Several statistical analyses were employed to test the project's 23 hypotheses. Descriptive statistics were utilized to describe the project's participants. Correlational analyses were run to determine if there were associations between some of the independent and dependent variables. Hierarchical regression analyses were also used to test the significance of the mediation models.

Results of the project showed that child weight status was negatively associated with adult quality of life. Variables that significantly mediated the relationship between child weight status and adult quality of life, such as low child self-concept and a history of being teased during childhood, were also identified.

Recognizing the influence that teasing and child self-concept have on an overweight or obese child's future quality of life stresses the importance of addressing the psychosocial variables when working with children who struggle with weight management.



## CHAPTER 1

### INTRODUCTION

The incidence of overweight status and obesity in the United States has increased dramatically over the past two decades. Baskin, Ard, Franklin, and Allison (2005) summarized data provided by the National Health and Nutrition Examination Survey regarding current trends of overweight status and obesity among children, adolescents, and adults. The data showed that since 1980, the incidence of child (ages 6-11) overweight status and obesity has doubled whereas 32% of children are either at risk for becoming overweight or are overweight. Adolescent (ages 12-19) incidence of overweight status and obesity has tripled; 16% of adolescents are either overweight or obese. The incidence of adult overweight status and obesity has doubled, with 66% of adults are either overweight or obese (Baskin et al., 2005).

There are many negative health-related, economic, and psychosocial outcomes related to overweight status and obesity in child, adolescent, and adult populations. In children and adolescents, negative health-related outcomes, including the onset of diseases, have been identified and span many of the body's major systems. Examples of these outcomes and diseases include fatty liver, leading to cirrhosis of the liver (Kinugasa et al., 1984), type 2 diabetes (Jones 2000; Lipton et al., 2005), hypertension (American Academy of Pediatrics, 2003), orthopedic complications, including Blount's disease (Dietz, Gross, & Kirkpatrick, 1982), asthma (Williams, 2002), and sleep apnea (Marcus et al., 1996). Health-related outcomes and diseases have also been identified in adults who are either overweight or obese. Using data collected from the second National Health and Nutrition Examination Survey, Van Itallie (1985) found that incidences of hypertension, high cholesterol, and type 2 diabetes were higher among overweight and

obese adults than non-overweight adults. Data from the Framingham Study showed an increased risk for heart disease among overweight and obese adults (Feinleib, 1985). Garfinkel (1985) summarized data provided by The American Cancer Society regarding incidences of cancer attributed to overweight status and obesity in the adult population. The data showed that overweight and obese men had higher rates of colorectal and prostate cancers and overweight and obese women had higher rates of endometrial, gall bladder, and cervical, ovarian, and breast cancers (Garfinkel, 1985).

Costs associated with obesity-related conditions have increased over the past 20 years. Wang and Dietz collected information on the medical costs associated with obesity-related conditions for children and adolescents (6-17 years of age) using the National Hospital Discharge Survey between 1979 and 1999. Data from the survey showed that costs accrued due to obesity-related conditions in both children and adolescents increased from 35 million dollars during 1979-1981 to 127 million dollars during 1997-1999 (Wang & Dietz, 2002). In the adult population, an estimated 96.2 billion dollars were spent on overweight and obesity-related costs in 2002 (Finkelstein, Fiebelkorn, & Wang, 2003).

Negative psychosocial outcomes attributed to overweight status and obesity has been cited across the lifespan. Children as young as five have been found to discriminate against their overweight classmates and tend to label overweight and obese individuals as “stupid, lazy, lying and cheating” (Jarvie, Lahey, & Graziana, 1983). Cramer and Steinwert (1998) assessed stigmatization of overweight children among preschool children (ages 3-5). Data from the study showed that overweight children were consistently viewed as “mean” and “unlikable” while healthy weight children were consistently viewed more positively (Cramer & Steinwert, 1998).

Additional studies have found that overweight and obese children have been ranked by other children as the least desirable friends (Maddox, Back, & Liederman, 1968; Latner & Stunkyard, 2003), and overweight and obese children report lower self-esteem, greater shame, and more teasing compared to their non-overweight peers (Pierce & Wardle, 1997). Severely obese children also report a poor quality of life; that is, a life that is equal to or below the quality of life that terminally ill pediatric patients report (Schwimmer, Burwinkle, & Varni, 2003). Research has indicated that overweight and obese adolescents endure social stigmatization, and have higher incidences of low self-esteem and depression (Ackard, Neumark-Sztainer, Story, & Perry, 2003; Goodman & Whitacker, 2002).

Negative psychosocial outcomes related to obesity also have been studied within the adult population. Friedman and colleagues studied adults with obesity to assess their psychosocial well-being. Data from their 2005 study showed that the adults with obesity reported feelings of depression and low self-esteem. Ross (1994) showed that overweight and obese adults were more likely to report feelings of depression than healthy weight adults. An additional cross-sectional study was conducted in several Australian communities to assess anxiety, depression, and well-being of men and women in three different age groups: 20-24 years, 40-44 years, and 60-64 years. A total of 6919 adults participated in the study. Data showed that obesity in women was associated with higher rates of anxiety and depression, and lower rates of emotional well-being compared to non-obese women and both obese and non-obese men (Jorm et al., 2003).

As indicated in the literature, there are several negative outcomes associated with overweight status and obesity in child, adolescent, and adult populations. These outcomes range from physical maladies to psychosocial and economic concerns, and have been

well documented within the research literature. The research literature, however, has not thoroughly examined the relationship between childhood weight status and adult quality of life. The first purpose of the project is to examine the relationship between child weight status and adult quality of life. The second purpose of the project is to assess variables that may mediate the relationship between child weight status and adult quality of life. Based on a review of the current research literature and self-concept development theory, two variables will be assessed: childhood teasing experiences and child self-concept.

### Definitions of Terms

There are three main terms that are discussed throughout the project: quality of life, teasing, and self-concept. Quality of life, as defined by Brown, Raphael, and Renwick (2002) means “How good is life for you?” Brown et al., prefaced their definition of quality of life by stating that because every person’s life is different, each individual’s quality of life will be experienced differently from one another. Therefore the goal of their quality of life assessment is to take into consideration the many different aspects of living that contribute to one’s quality of life and then deduce an overall quality of life score. The quality of life score is an indicator of an excellent quality of life, an acceptable quality of life, or a poor quality of life.

Teasing refers to the act of harassing someone playfully or maliciously (especially by ridicule) or provoking someone with persistent annoyances (Merriam-Webster, 2005). In the study, participants will be asked to share information regarding their perception of being teased when they were children. Teasing attributed to overweight status or obesity will be referred to as weight-based teasing. All other teasing will be referred to as general teasing.

One's self-concept has been described as "a relatively stable set of attitudes reflecting both a description and an evaluation of one's own behavior and attributes" (Piers & Harris, 1969 p.1). A more detailed discussion of self-concept will be presented in the theory section of the manuscript. In order to measure the participants' self-concepts during their childhoods, participants will be asked to answer questions on the self-concept measure retrospectively.

### Significance

The research literature has cited current statistics and trends regarding the incidences of child, adolescent, and adult overweight status and obesity. Negative outcomes have been attributed to overweight status and obesity among children, adolescents, and adults and range from physical problems such as coronary disease and diabetes to psychosocial issues such as depression and low self-esteem. Clinicians who work with children, adolescents, and adults who are either overweight or obese, and seeking weight loss, utilize the current research to develop appropriate treatment plans, treatment goals, and interventions to facilitate the best possible outcomes for their patients or clients. By evaluating the potential relationship between child weight status and adult quality of life, as well as potential mediating variables within the relationship, clinicians will have even more information with which to guide the development of treatment plans, treatment goals, and interventions.

Adults who struggle with weight management issues and lower quality of life may also benefit from information learned from the project. The information may be used to help adults identify experiences that occurred during their childhood that still may be a source of emotional distress. With the knowledge that childhood weight status and other

mediating variables may contribute to lower quality of life in adulthood, clinicians may have another tool with which to help their clients or patients reach their treatment goals.

#### Limitation and Assumptions

There are three limitations of the project. First, participants will be asked to recall aspects of their childhood. Because memories may not be completely accurate, responses to the instrument may not be accurate. Second, the definition of “quality of life” is subjective. Although the study will be utilizing a validated instrument to assess adult quality of life, responses to the questions may vary according to the participant’s individual interpretation of the terms used in the questionnaire. Last, there are several variables that may affect the participants’ perception of their current quality of life: current weight status, socioeconomic status (SES), marital status, age, ethnicity, and current health status. In efforts to reduce the limitation, those variables will be assessed and controlled for during the statistical analysis of the data. The project also assumes that the participants will be able to accurately recall several aspects of their childhood, and be able to assess their emotional and psychological states during that time. It is also assumed that participants will complete the questionnaires in a truthful manner.

## CHAPTER 2

### REVIEW OF LITERATURE

#### Introduction

The incidence of overweight and obesity status among children, adolescents, and adults has increased dramatically over the past 20 years. In order to systematically assess weight-status categories, clinicians and researchers have adopted the body mass index calculation (BMI). The BMI calculation takes into consideration both the height and weight of adults. The Centers for Disease Control and Prevention (CDC) developed categories of weight status for adults based on BMI. For adults, a BMI below 24.9 is considered healthy. A BMI between 25 and 29.9 is considered overweight, and a BMI over 30 is considered obese. Because children are still physically maturing, their BMI calculation takes into consideration both age and gender, and weight status is based on where a child's BMI falls within a certain percentile. Children who are considered "at-risk" for becoming overweight have a BMI that falls into the 85<sup>th</sup> to 94<sup>th</sup> percentile for age and gender. Children who are considered overweight have a BMI that falls above the 95<sup>th</sup> percentile for age and gender (CDC, 2005).

Data from the National Health and Nutrition Examination Survey were used to assess the incidence of overweight and obesity among children and adults. The data were also used to describe the present trend of overweight and obesity incidences among children and adults. Baskin, Ard, Franklin, and Allison, (2005) presented the data in their research study.

According to the national data, the incidence of child (ages 6-11) overweight status and obesity has doubled, indicating that 32% of children are either at risk for becoming overweight or are overweight. Adolescent (ages 12-19) incidence of

overweight status and obesity has tripled. Sixteen percent of adolescents are either overweight or at risk for becoming overweight. Adult overweight and obesity has doubled, with a reported 66% of adults being either overweight or obese (Baskin et al., 2005).

### Child and Adolescent Overweight Status and Obesity

Over the past three decades, overweight status and obesity has become more prevalent in children and adolescents. Baskin et al., (2005) reported in their review article that 60-85% of overweight or obese children remain so throughout adulthood. Because of the high probability that children and adolescents who are either overweight or obese will remain overweight or obese throughout adulthood it is important to identify factors that have been found to contribute to overweight status and obesity among children. Research suggests that childhood and adolescent overweight status and obesity most likely result from a combination of biological, environmental, and social factors. Although there have been numerous biological, environmental, and social factors that have been identified as contributors to overweight status and obesity among children, adolescents, and adults, for the purpose of the project, only six of the most prominent factors will be addressed.

#### Factors Contributing to Child and Adolescent Overweight Status and Obesity

##### Biology

Parental obesity and overweight status has been indicated as a factor that contributes to overweight status and obesity among children and adolescents. A 1992 study by Eck, Klesges, Hanson, and Slawson examined the relationship between parental obesity and childhood obesity. A total of 187 children and their parents participated in the study. The children and their parents were placed into two categories: high risk (indicating that one or both of the parents were either overweight or obese) or low risk



(indicating that neither parent was overweight or obese). BMI was calculated for the children and their parents at the beginning of the study, and was calculated again one year later. Data from the study showed that the children who had one or more parents who were either overweight or obese gained significantly more weight than children whose parents were not overweight. The data also suggested that a child has an 80% chance of becoming obese when both of his or her parents were obese. The risk dropped to 40% if the child had only one parent who was either overweight or obese. If neither parent was overweight or obese, the child had a 7% chance of becoming obese. An additional study also indicates that children who have mothers who are obese were 2.5 times more likely to become obese than children who had mothers who were not obese (Gallaher, Hauck, Yang-Oshida, & Serdula, 1991). A more recent 2002 study assessing the BMI of 3306 children (ages 5-7) and their parents showed that parental BMI was weakly associated with children's BMI. The study showed that children whose parents were either overweight or obese were at an increased risk of becoming overweight or obese themselves (Danilezik, Langnase, Mast, Spethmann, & Muller, 2002).

### Parental Knowledge

Parental knowledge has also been identified as a contributing factor related to childhood overweight status and obesity in one study. Parent's lack of knowledge regarding proper nutrition has been cited in one study as a potential contributing factor (Keller & Stevens, 1996). In their study, the researchers found that parents of overweight children were less likely to be aware of important nutritional knowledge including the balance of fats, protein, and carbohydrates as well as appropriate energy intake necessary to prevent their child from becoming overweight. The researchers cited nutrition education as one strategy that may help prevent childhood overweight as well as help

children who do have weight management issues. Parental perception of overweight status of their children may also be a contributing factor to overweight status and obesity. Baughcum, Chamberlin, Deeks, Powers, and Whitaker (2002) investigated the potential relationship between parental perception of their child's weight status and their child's actual weight status. In the study, 622 children ages 23-60 months were assessed for weight status. The researchers then asked the children's mothers if they thought that their child was a healthy weight or overweight. Data showed that 80% of the mothers failed to recognize that their child was overweight, though the majority of the mothers who were overweight recognized themselves to be overweight (Baughcum et al., 2002).

### Nutrition

Poor nutrition and excess energy intake have been cited as contributing factors of overweight status and obesity. The frequency of eating at fast food restaurants have been identified as contributing to the overweight and obesity epidemic among children and adolescents. Fast food restaurants are notorious for serving large portions of energy dense foods. A 2003 study by St.Onge, Keller, and Heymsfield found that between 1977 and 1996, the proportion of foods that children and adolescents consumed from restaurants and fast food chains had increased by almost 300%. Another study by Dennison, Rockwell, and Baker (1997) examined the fruit juice consumption of 200 children between two and five years of age as well as the children's weight status. Data showed that children who drank more than 12 ounces of fruit juice per day (which the researchers considered "excessive" fruit juice consumption) were more likely to be categorized as "obese" than children who drank less than 12 ounces of juice per day (Dennison et al., 1997).

Excessive beverage and soft drink consumption has been cited as a contributing factor to overweight status and obesity. In their 2000 study of 12, 821 children and adolescents, Toriano, Briefel, Carroll, and Bialosky found 20-24% of adolescents' energy consumption came from beverages and 8% of adolescents' energy consumption came from soft drinks. The researchers also found that both overweight children and adolescents were more likely to report higher soft drink consumption than non-overweight children and adolescents (Toriano et al., 2000).

### Physical Activity

Many children and adolescents receive some opportunities for physical activity during school hours, however, due primarily to budget restraints, some school districts have either eliminated physical education classes or participation in the classes is no longer mandatory (Miller, 1999). Lack of physical education classes is detrimental to children and adolescents because, for some children, participation in physical education classes is their only structured time for exercise. Without physical education classes, many children and adolescents do not get enough exercise (Miller, 1999).

Strauss, Rodzilsky, Burack, and Colin (2001) assessed physical activity level in 92 children and adolescents between the ages of 10 to 16 years. Data from the study showed a significant decrease in physical activity participation among the children and adolescents. Younger female adolescents spent more time (35%) participating in physical activities than older female adolescents. In overall assessment of physical activity participation, the data showed that 75.5% of the children and adolescents' days were spent engaged in sedentary activities such as watching television, playing on the computer, or doing homework. The children and adolescents reported that only 1.4% of their days were spent participating in some form of physical activity. Patrick et al., (2004)

studied 878 adolescents in efforts to identify risk factors for overweight or obesity status. The data showed that adolescents who were either at risk for becoming overweight or were overweight participated in significantly fewer minutes of physical activity per day compared to the teens that were not overweight or at risk for becoming overweight.

### Television Viewing

Several studies have indicated that children today spend more time watching television and playing video games than they did 30 years ago (Gortmaker, Must, Perrin, Sobol, & Dietz, 1996; Patrick et al., 2004; & Strauss et al., 2001.) A 1996 study conducted by Gortmaker et al., found a positive correlation between hours of television viewing and obesity. The researchers also found that children who watched five or more hours of television per day were five times more likely to be obese than children who watched less than two hours of television per day (Gortmaker et al., 1996).

A longitudinal study by Proctor and colleagues (2003) was conducted to assess the relationship between hours of television viewing and the incidence of overweight status and obesity. BMI and skinfold size were calculated once a year for 106 children beginning at age four years and continuing through age 11 years. Skinfolds were measured to assess overall body fat percentages of the children. Data from the study showed an increase in body fat among children who watched three or more hours of television per day. Those children had a mean sum of skinfolds of 106.2 mm. Children who watched less than one hour and forty-five minutes of television per day had a mean sum of skinfolds of 76.5 mm, which indicated lower amounts of body fat. Also, children who watched the most amount of television had higher BMI than children who watched the least amount of television. The researchers concluded that children who watched the

most television per day showed a higher increase in body fat over time compared to children who spent less time watching television (Proctor et al., 2003).

### Socioeconomic Status

Socioeconomic status (SES) has been cited as a contributing factor to overweight status and obesity (Keller & Steven, 1996). Families with a lower SES tend to have a greater incidence of overweight status and obesity among their children. A 2004 study by Sherry et al., utilized several focus groups to address the relationship between SES and their children's overweight status. Some families with limited incomes shared that they tended to purchase high fat and high calorie foods because they cannot afford other, more nutritious alternatives (Sherry et al., 2004). In 2003, a birth cohort study was completed using data from 4515 participants from Finland. Based on responses from questionnaires, the researchers reported a higher prevalence of overweight status and obesity among participants from lower SES backgrounds than participants from higher SES backgrounds (Eriksson, Forsen, Osmond, & Barker, 2003).

A 1993 study by Okamoto, Davidson, and Connor collected data from 1670 children regarding SES and weight status. The children were mostly African-American, reported low SES backgrounds, and lived in Harlem. The data were then compared to data from the National Center for Health Statistics. Results showed that the median weight for age in the Harlem population was 4.8 pounds greater for boys and 6.3 pounds greater for girls compared to the national population. Weight for height in 14% of the girls and 14% of the boys were also above the 95<sup>th</sup> percentile for the Harlem population. The researcher concluded that their data supported the hypothesis that SES is strongly associated with overweight status and obesity among children and adolescents. Wang (2001) assessed the relationship between the prevalence of childhood obesity and SES

across three nationalities: United States, Russia, and China. Children from higher SES backgrounds in China and Russia had a higher incidence of obesity, while children in the United States from lower SES backgrounds had a higher incidence of obesity.

### Outcomes Attributed to Child and Adolescent Overweight Status and Obesity

#### Physical

Several health-related outcomes have been attributed to overweight and obesity status among children and adolescents. Dietz (1998) and Must and Strauss (1999) identified several negative health outcomes that have been attributed to overweight and obesity status in their meta analysis studies. These health outcomes include heart disease, sleep apnea, increased blood pressure, decreased lung capacity, orthopedic problems, gallstones, hepatitis, asthma, certain cancers, and increased cranial pressure. Type 2 diabetes, once referred to as “adult-onset” diabetes, has now been diagnosed in children as young as age four, though the majority of children being diagnosed with type two diabetes are over the age of 10. According to the American Diabetes Association, 80% of the children diagnosed with type two diabetes have either been overweight or obese (American Diabetes Association, 2005).

Much data have been collected and analyzed regarding health-related outcomes attributed to overweight status and obesity. The Bogalusa Heart Study began in 1972 and is currently the longest longitudinal study of both African-American and Caucasian children in the world. The study includes more than 16,000 children and their families from Bogalusa, Louisiana. Data from the study have been published in over 800 research articles regarding cardiovascular health (Berenson, 2001). Though the study has produced numerous findings, for the purpose of the discussion, only a few findings will be discussed. First, the major etiologies of adult heart disease, including atherosclerosis

and hypertension, begin in childhood. Changes in the heart toward a diseased state may occur as early as age five (Berenson, 2002). Second, environmental factors such as diet, exercise, and cigarette smoking are significant factors that influence dyslipidemias, hypertension, and obesity, which are precursors of heart disease (Berenson et al., 1998; Gustat, Srinivasan, Elkasabany, & Berenson, 2002; Nicklas, 1995; Nicklas, Yang, Baranowski, Zakeri, & Berenson, 2003). Finally, lifestyle and behaviors that influence the risk of cardiovascular disease are learned and begin during childhood. Therefore, it is essential for children to learn and adopt a healthy lifestyle in efforts to prevent overweight and obesity and decrease their risk for cardiovascular disease (Berenson, Srinivasan, & Nicklas 1998; Freedman, Khan, Dietz, Srinivasan, & Berenson, 2001).

### Psychosocial

Negative psychosocial outcomes have been attributed to childhood overweight and obesity status. The main focus of studies conducted in this area include data from overweight and obese children and adolescents regarding self-esteem, depression and anxiety, stigmatization, peer relationships, quality of life, and incidences of teasing and bullying. Family functioning is another psychosocial outcome related to overweight and obesity status has also been explored, though not as fully as the previously mentioned outcomes. Although all overweight and obese children and adolescents may not experience negative psychosocial outcomes attributable to their weight status, the data strongly suggest that a majority of overweight and obese children and adolescents have been affected by at least one of these negative outcomes.

### Self-Esteem

The impact of overweight and obesity status on child and adolescents self-esteem has been the subject of controversy among researchers. Studies by Allon (1979), Sallade

(1973), and Strauss (1985), reported decreased levels of self-esteem in obese and overweight children as a group. Davison and Birch (2001) also found that among 197 kindergarten girls in their study, overweight girls reported a significantly lower self-concept than healthy weight girls. However, other studies report normal levels of self-esteem among overweight and obese youth (Mendelson, 1984; Wadden, 1982).

The purpose of Strauss' (2000) study was to re-assess the self-esteem of overweight and obese children and adolescents. Data for the study were collected on 1520 children and adolescents from the National Longitudinal Survey of Youth between 1990 and 1996. Results of the study indicated that there were no significant differences of scholastic and global self-esteem scores among 9-10 year old obese and non-obese children. However, by ages 13-14 years, obese girls and obese boys reported significantly lower self-esteem scores compared with their non-obese peers. The low self-esteem scores were also associated with increased feelings of sadness, loneliness, and nervousness among the children with obesity. The longitudinal data support the position that obesity is a strong predictor of lower self-esteem among adolescents (Strauss, 2000). A 2004 longitudinal study by Hesketh, Wake, and Waters assessed the self-esteem of 1157 school-age children. The researchers found that overweight and obese children reported significantly lower levels of self-esteem than their non-overweight peers. Results from the longitudinal study also suggested a causal relationship between weight status and self-esteem, whereas overweight and/ or obesity status preceded a decrease in self-esteem scores among the participants (Hesketh et al., 2004).

### Depression and Anxiety

Depression and anxiety have been identified as psychosocial outcomes related to overweight and obesity among children and adolescents. A 2003 study by Eremis and



colleagues examined the relationship between obesity and psychopathological diagnoses (i.e. depression and anxiety) among three groups of adolescents: a clinical and non-clinical sample of adolescents with obesity and a healthy weight group of adolescents. Ninety adolescents participated in the study with 30 participants in each group. Each participant was given several questionnaires to complete: Rosenberg Self-Esteem Scale, Children's Depression Inventory, and the Eating Attitudes Test. Parents of the participants also completed the Child Behavior Checklist. Results of the study indicated that the clinical sample of adolescents with obesity scored more negatively on the following scales than did the non-clinical adolescents with obesity and the healthy weight adolescents: anxiety-depression, aggressiveness, social problems, social withdrawal, internal and externalizing behaviors and total problem subscales of the Child Behavior Checklist. The non-clinical sample of adolescents with obesity also showed significantly higher depression and anxiety scores than the healthy weight adolescents (Eremis et al., 2004).

Studies examining the relationship between anxiety and depression and overweight and obesity status by Isnard et al., (2003) and Burrows and Cooper (2001) both showed similar results: participants in the overweight and obese groups showed significantly higher levels of depression and anxiety than participants who were a healthy weight. It was unclear, however, if depression and anxiety preceded overweight and obesity status or if depression and anxiety developed as a result of the overweight and obesity status.

### Stigmatization

Stigmatization is a negative psychosocial outcome that has been attributed to overweight status and obesity among children and adolescents. Cramer and Steinwert

(1998) reported that many preschool children in their study characterized other overweight children as “mean and undesirable” playmates. It has also been reported that children as young as age five characterized overweight children as “mean, lazy, stupid, lying, and cheating” (Jarvie, Lahey, Graziana, & Framer, 1983).

A 1961 landmark study by Richardson, Goodman, Hastorf, and Dornbusch was conducted to assess the stigmatization of obesity by elementary school-age children. The children were given six drawings of other children and were asked to rank the drawings according to how well they liked each child. One drawing showed a “healthy” child without disability. The other drawings showed children with various disabilities or disfigurement, and one drawing showed a child with obesity. The child with obesity was reliably ranked last by the children, indicating that the child with obesity was consistently liked the least among the six drawings (Richardson et al., 1961). The study was replicated in 2003 by Latner and Stunkard. The study included 458 school-age children. The children were given the same task as the children from the previous study. Again, the children reported liking the child with obesity the least. The difference between the present study and the previous study was that the child with obesity was liked significantly less in the present study than in 1961, with girls liking the child with obesity less than the boys liked the child with obesity (Latner & Stunkard, 2003).

### Peer Relationships

Peer relationships have also been studied in regard to overweight and obese children and adolescents. Strauss and Pollack (2003) conducted a study to assess social isolation among overweight children and adolescents. A total of 17557 adolescents between the ages of 13 and 18 participated in the study through the National Longitudinal Study of Adolescent Health which was conducted in several school systems across the

country. The survey included several questions regarding adolescent health, but for the purpose of this literature review, only data related to demographics, height and weight, and peer relationships were used. The researchers were able to determine social isolation rates based on the number of friendship nominations each adolescent received from other adolescents.

Findings from the study showed that the overweight adolescents were more likely to be socially isolated and to be outliers in regard to social networks than healthy weight adolescents. Although overweight adolescents listed similar numbers of friends as the healthy weight adolescents, overweight adolescents received significantly fewer friendship nominations from their peers than were received by the healthy weight adolescents. Overweight adolescents were also more likely to receive no friendship nominations than were the healthy weight adolescents (Strauss & Pollack, 2003).

### Quality of Life

Quality of life among overweight and obese children and adolescents has recently been gaining the attention of researchers. Four studies have been published since 2003 aimed toward addressing the quality of life among overweight and obese children and adolescents. The first study to be reported was conducted by Schwimmer and colleagues. The researchers surveyed 106 obese children and adolescents (ages 5-18) to assess their quality of life. Using the Pediatric Quality of Life Inventory, which had a parent-proxy component and a child-self-report component, the researchers determined the quality of life scores for the participants. The scores were then compared with other quality of life scores from healthy children and children with cancer. The data showed that the obese children rated their quality of life significantly lower in all domains of assessment: physical functioning, school functioning, and social functioning than did the healthy

children. Also, the scores of the obese children in all domains were either lower or comparable to the scores calculated from the children with cancer (Schwimmer, Burwinkle, & Varni, 2003).

An additional quality of life study was published in 2003 by Friedlander and colleagues. The aim of the study was to assess the quality of life of overweight preadolescent children. Quality of life scores were determined from the Child Health Questionnaire in which parents of 371 participating children completed. Results from the study indicated that overweight children's scores were significantly lower on the psychological health summary and on subscales that measured self-esteem and physical functioning (Friedlander, Larkin, Rosen, Palermo, & Redline, 2003).

Two studies that were published in 2005 also assessed quality of life in children and adolescents who were either overweight or obese. In Swallen, Reither, Haas, and Meier's study, quality of life was assessed on several domains: perception of general health, physical health, emotional health, and school and social functioning. The data from the study showed that both overweight and obese adolescents scored significantly lower on physical health, emotional health, and school function than their non-overweight peers. Scores for younger adolescents (ages 12-14) indicated higher incidence of depression, lower self-esteem, and poorer school and social functioning than their non-overweight peers (Swallen et al., 2005).

Williams, Wake, Hesketh, Maher, and Waters (2005) also published a research study that assessed the quality of life among school-age children. The researchers assessed the quality of life among 1569 school-age children. Using both the Pediatric Quality of Life Inventory (PedsQOL) and a parent-proxy quality of life instrument, the researchers concluded that decreased quality of life scores were related to an increase in

the children's BMI. The study also showed a decrease in physical functioning among obese children compared with healthy weight children. However, emotional and school-functioning scores were not significantly different between the groups (Williams et al., 2005).

### Teasing and Bullying

Teasing has been previously defined as the act of harassing someone playfully or maliciously (especially by ridicule) or provoking someone with persistent annoyances (Merrriam-Webster, 2005). For the purpose of the study, two forms of teasing will be addressed: general teasing and weight-based teasing. It is important to examine both types of teasing so that a comparison between outcomes related to general teasing experiences during childhood and weight-based teasing experiences during childhood can be made.

### General Teasing

Negative outcomes related to general childhood teasing experiences have been identified in the research literature. McCabe, Antony, Summerfeldt, Liss and Swinson (2003) addressed the relationship between anxiety disorders in adults and teasing experiences during childhood. A total of 78 adults participated in the study and were diagnosed with social phobia, obsessive compulsive disorder, or panic disorder. Results from the study showed that 92% of the adults with social phobia reported being severely teased during childhood, 50% of the adults with obsessive compulsive disorder reported being severely teased during childhood, and 35% of the adults with panic disorder reported a history of severe childhood teasing. The study also showed that the onset of the anxiety disorders was positively associated with the age of the adult when the teasing first occurred (McCabe et al., 2003).

A study by Storch et al., (2003) also aimed to explore the relationship between general childhood teasing experiences and psychosocial adjustment during adulthood. The researchers studied the teasing history and psychosocial adjustment of 226 undergraduate students. Participants were given questionnaires including the Revised Teasing Questionnaire, Beck Depression Inventory, State-Trait Anxiety Inventory, Brief-Fear of Negative Evaluation Scale, and the UCLA Loneliness Scale. Data showed that the both the frequency of childhood teasing experiences and the level of distress reported due to the teasing experiences were positively associated with symptoms of depression, general anxiety, fear of negative evaluation, and loneliness in adulthood (Storch et al., 2003).

Roth, Coles, and Heimberg (2002) also studied the potential relationship between childhood teasing and anxiety and depression in adulthood. Participants in their study included 514 undergraduate students. The participants completed a Teasing Questionnaires, which asked them to recall teasing experiences related to 20 different topics. Participants also completed five additional questionnaires: Brief Fear of Negative Evaluation Scale, Beck Depression Inventory, Penn State Worry Questionnaire, Anxiety Sensitivity Index, and the State-Trait Anxiety Inventory. Results from the study showed that a history of teasing experiences was a significant predictor of both depression and anxiety during adulthood. Teasing history was more strongly related to social anxiety than other types of anxiety.

Childhood teasing experiences and later self-esteem was studied by Gleason, Alexander, and Somers (2000). Participants included 164 male and female undergraduate students. History of teasing was assessed by using two measures: Physical Appearance Related Teasing Scale and the Perception of Teasing Scale. Self-esteem was assessed by

using the Rosenberg Self-Esteem Scale, and Body Image was assessed using the Body Shape Questionnaire. Results from the study showed that among males, teasing about competence was a significant predictor of self-esteem in adulthood. Among females, teasing about competence and appearance were significant predictors of self-esteem in adulthood (Gleason et al., 2000).

Current research on childhood teasing suggest that teasing about physical appearance, particularly weight-based teasing is the most common form of teasing during childhood (Georgeses, Harris, Milich, & Young, 1999; Roth et al., 2002). Because weight-based teasing has been identified as the most common form of teasing during childhood, it is important to review current literature regarding this form of childhood teasing.

### Weight-Based Teasing

Overweight and obese children and adolescents report more incidences of teasing and bully victimization than healthy weight children. Neumark-Sztainer et al., (2002), assessed teasing among 4746 adolescents. The adolescents completed surveys regarding teasing and reported height and weight measurements. The study showed that both overweight and underweight adolescents reported significantly more teasing than healthy weight adolescents. Overweight adolescents were most likely to be teased about their weight, and the majority of overweight male and female adolescents reporting teasing also said that the teasing bothered them. Further analyses using the same participant data were run by Eisenberg, Neumark-Sztainer, and Story (2003) to assess the potential relationship between weight-based teasing experiences and emotional well-being during adolescence. Results from the analyses showed that weight-based teasing was associated with low body satisfaction, low self-esteem, high number of depressive symptoms, and

suicidal ideation and attempts. The results were similar for both boys and girls and were also stable across ethnic and racial groups (Eisenberg et al., 2003).

Janssen, Craig, Boyce, and Pickett (2004) conducted a study to examine the relationship between overweight and obesity status and different forms of bullying behaviors. Participants in the study included 5749 children between the ages of 11 and 16. The researchers assessed each participant's BMI and then had them complete a self-report questionnaire regarding bullying. The data showed that both overweight and obese children were more likely to be the victims of aggression than non-overweight children. There was also an association between relational and overt aggression (i.e. teasing, hitting, and pushing) and weight status whereas overweight and obese children and adolescents reported significantly more incidences of relational and overt aggression than healthy-weight children and adolescents. An interesting finding from the study indicated that overweight and obese older adolescents (15-16 years) were more likely to be both the victim and the perpetrator of bullying behavior (Janssen et al., 2004).

### Family Functioning

Family psychosocial variables have been identified in relation to overweight status and obesity among children and adolescents. A 2000 study by Stradmeijer, Bosch, Koops, and Seidell aimed to examine the relationship between family functioning and psychosocial adjustment among overweight children and adolescents. A total of 103 children and adolescents between the ages of 10 and 16 participated in the study. The researchers used the Family Dimensions Scale to assess family functioning in three domains: cohesiveness, adaptability, and social desirability. Between the overweight and healthy weight groups, there was no significant difference shown in family functioning.



An earlier 1994 study by Mendelson, White, and Schliecker, however, showed different results. In their study of 572 adolescents (mean age 15.7 years), Mendelson et al., assessed family functioning on 9 dimensions. Relationship dimensions including cohesion, expressiveness conflict, family idealization, and disengagement were assessed using five subscales and system maintenance dimensions including enmeshment, democratic, permissive, and authoritarian family styles were assessed using four subscales. Results from the study showed that as adolescent girls became more overweight, they reported lower cohesion, expressiveness, and democratic styles within their families. Overweight and non-overweight boys, however, did not differ on any dimensions of family functioning (Mendelson et al., 1994).

Several negative health-related and psychosocial outcomes attributed to overweight status and obesity among children and adolescents have been identified from the literature. The literature has also indicated that children and adolescents who are either overweight or obese have an increased probability of becoming an overweight or obese adult (Styne, 1999), and overweight and obese adults also report negative health-related and psychosocial outcomes attributed to their weight status. While it is important to address adult overweight status and obesity, the primary focus of the project, however, is to examine relationships and outcomes within the childhood overweight and obesity paradigm. Therefore, adult overweight and obesity status is only briefly addressed within the literature review.

#### Adult Overweight Status and Obesity

Incidences of adult overweight status and obesity have increased over the past 20 years with an estimated 66% of adults being either overweight or obese. Because prior research has indicated that an overweight or obese child or adolescent has a 70% chance

of becoming an overweight or obese adult (Styne, 1999), it is important to discuss the factors contributing to adult overweight status and obesity as well as potential health-related and psychosocial outcomes that have been attributed to overweight status and obesity among adults.

### Factors Contributing to Adult Overweight Status and Obesity

The nature versus nurture debate has been applied in many areas of research, and overweight status and obesity are no exceptions. On the nature side of the debate, genetic components contributing to obesity have been widely studied. Using twin studies and animal based studies, much research has indicated that specific genes may be partially responsible for the onset of adulthood obesity (Bray, 1992; Stunkard, 1991). On the nurture side of the debate, life style factors such as poor nutrition and physical inactivity have been cited as contributing factors of overweight status and obesity among adults (Baker & He, 2004; Binkley, Eales, & Jekanowski, 2002; Scott, Perumean-Chaney, & Jeor, 2002).

Poor nutrition, specifically the consumption of excess energy than what is expended by the body, has been cited as a contributing factor to overweight status and obesity. Scott et al., (2002) assessed the nutritional intake of 508 overweight and healthy weight adults who participated in the RENO Diet-Heart Study. The adults completed a seven-day diet record and had their BMI and resting energy expenditure (REE) calculated by the researchers. The data showed that overweight adults (categorized by BMI) consumed more than 200 extra calories per day than healthy-weight adults. Binkley et al., (2002) studied the relationship between fast food consumption and overweight status and obesity. A total of 16103 adults participated in the study. Data were collected via interview and included information regarding the participant's height and weight, two-

day food intake recall, and where the participants purchased the food (i.e. restaurant, fast-food, grocery store) Results showed that overweight men consumed foods more frequently from restaurants and fast food chains than healthy weight men. Overweight women also consumed foods more frequently from fast food chains than healthy-weight women. Therefore the researchers concluded that frequency of food consumption from restaurants and fast food chains contributed to overweight status and obesity among adults.

Physical inactivity has also been cited as a contributing factor to adult overweight status and obesity. Recent guidelines published by the CDC recommended at least 30 minutes of moderate physical activity per day to promote a healthy weight. An additional recommendation by Healthy People 2010 suggested that adults may also participate in vigorous physical activity 20 minutes or more per day for three or more days per week. The Office of the Surgeon General reported, however, that only 15% of adults engage in this prescribed regime. More than 60% of adults are physically active, however, they do not meet the recommended guidelines, and 25% of adults surveyed stated they are completely sedentary (CDC, 2005). Baker and He (2004) assessed the relationship between physical activity levels, BMI, overall health, and physical functioning in 7867 adults. Results from the data, collected from interviews and self-report questionnaires, showed that adults who participated in both light and vigorous activity had lower BMI than adults who were sedentary. Results also showed that physical activity participation was associated with better overall health and physical functioning (Baker & He, 2004).

#### Outcomes Attributed to Adult Overweight Status and Obesity

There are several health-related outcomes that have been attributed to adulthood overweight status and obesity. Data from the Bogalusa Heart Study showed that

overweight status and obesity were associated with coronary heart disease and hypertension (Freedman et al., 2004). Van Itallie (1985) found that incidences of hypertension, high cholesterol, and diabetes were higher among overweight and obese adults than non-overweight adults, and data from the American Cancer Society showed an increase risk of many cancers among overweight and obese adults (Garfinkel, 1985).

Horev, Wirguin, Lantsberg, and Ifergane (2005) examined the relationship between incidences of headaches and migraine attacks and adult obesity status. The researchers surveyed a small sample of obese women (n=27) who sought weight reduction surgery. Results from the data showed that 40% of the women reported one or more migraine attacks within a two month period and an additional 15% reported tension-type headaches during the two month period. The researchers suggested that the high incidence of migraine attacks and headaches within their study population was associated with adult obesity status (Horev et al., 2005).

Data from the 2000 Behavioral Risk Factor Surveillance System were used to examine the relationship between incidence of asthma and several independent variables: overweight status and obesity among adults, SES, smoking status, age, gender, and race. Gwynn (2004) analyzed data from 160,537 participants from across the United States. The researcher found that adults who were underweight, overweight, or obese reported significantly more incidences of asthma than healthy-weight adults. Also, females reported more incidences of asthma diagnoses than males, and adults from lower SES backgrounds, and those who smoked also reported higher incidences of asthma (Gwynn, 2004).

Health-related outcomes attributed to adult overweight and obesity status have been identified through a review of the literature. Psychosocial outcomes attributed to

adult overweight status and obesity have also been identified from the literature. These outcomes include, but are not limited to, higher incidences of depression and anxiety, lower self-esteem, aggression, passive dependency, and lower autonomy (Friedman et al., 2005; Hasler et al., 2004; Mills 1994; Ross 1994).

Friedman and colleagues studied adults with obesity to assess their psychosocial well-being. Data from their 2005 study showed that the adults with obesity reported feelings of depression and low self-esteem. Ross' (1994) study also showed that overweight and obese adults were more likely to report feelings of depression than healthy weight adults. An additional cross-sectional study was conducted in several Australian communities to assess anxiety, depression, and well-being of men and women in three different age groups: 20-24 years, 40-44 years, and 60-64 years. A total of 6919 adults participated in the study. Data showed that obesity in women was associated with higher rates of anxiety and depression, and lower rates of emotional well-being compared to non-obese women and both obese and non-obese men (Jorm, Korten, Christensen, Jacomb, Rodgers, & Parslow, 2003).

Mills (1994) assessed interpersonal dependency, self-confidence, and locus of control among adults with obesity and adult who were of healthy weight. A total of 213 adults participated in the study; 106 were adults with obesity and 97 were adults of healthy weight. The adults were asked to complete the Interpersonal Dependency Inventory and an additional questionnaire regarding locus of control. Data from the study showed that adults with obesity reported significantly greater perception of internal locus of control. The data also showed that both men and women with obesity scored significantly higher on the measure of dependency and women with obesity also reported lower levels of self-confidence than healthy weight women. Both men and women with

obesity also had significantly lower scores on measures of assertion of independence and autonomous functioning (Mills, 1994).

As indicated from the literature, overweight status and obesity among adults has been associated with several negative health-related and psychosocial outcomes. Because children and adolescents who are either overweight or obese have a greater chance of becoming an overweight or obese adult, it was important to briefly address the topic. Perhaps the findings from the proposed study will add an additional dimension to the research literature regarding outcomes related to overweight status and obesity among both children and adults.

#### Summary

Overweight status and obesity are chronic conditions that affect millions of individuals across the lifespan. Beginning in the early years of life and continuing through adulthood, there are several negative health-related and psychosocial outcomes that have been associated with overweight status and obesity. The health-related outcomes related to overweight status and obesity have been firmly established in the research literature as well as immediate psychosocial outcomes in both children and adults.

Psychosocial outcomes that have been attributed to overweight status and obesity have been indicated across the lifespan. Children as young as five tend to discriminate against their overweight classmates, and label overweight and obese individuals as stupid, lazy, lying and cheating (Cramer et al., 1998; Jarvie et al., 1983). Research has also indicated that overweight and obese adolescents also endure social stigmatization, and have higher incidences of low self-esteem and depression (Ackard et al., 2003; Goodman et al., 2002). Overweight and obese adults also report psychosocial outcomes

which have been attributed to their weight status. These adults tend to exhibit behaviors consistent with passive dependency, low self-confidence, low assertiveness, negative self-image, and low self-esteem. Overweight and obese adults also report higher rates of internal anxiety and depression (Friedman et al., 2005; Hasler et al., 2004; Mills, 1994; Ross, 1994).

Though the research has identified several outcomes related to childhood overweight status and obesity, researchers have not thoroughly examined the relationship between childhood weight status and adult quality of life. The first purpose of the project is to examine the relationship between child weight status and adult quality of life. The second purpose of the project is to assess variables that may mediate the relationship between child weight status and adult quality of life. Based on the review of the literature, childhood teasing experiences and child self-concept will be examined for their potentially mediating roles within the relationship between child weight status and adult quality of life. A more thorough discussion of self-concept follows in chapter three of the manuscript.

## CHAPTER 3

### THEORETICAL FOUNDATION

The incidence of overweight status and obesity has increased considerably over the past 20 years in the child, adolescent, and adult populations. As indicated from a review of the literature, negative outcomes have been attributed to overweight and obesity status in all populations, and may affect overweight or obese individual's physical health and psychosocial well-being. The first purpose of the project is to further investigate the potential relationship between child weight status and later adult quality of life. The second purpose of the project is to assess variables that may mediate the relationship between child weight status and adult quality of life.

The first variable that will be investigated as a potential mediator is child self-concept. The literature indicates that overweight and obese children tend to have a lower self-concept than children who are not overweight or obese (Ball, 2005; Davison & Birch, 2001; Hesketh, 2004). Based on Cooley's theory, The Looking Glass Self, self-concept tends to be a stable trait that is developed during childhood and is carried on throughout adulthood. Further, it would be plausible that adults who report a low quality of life also report a low self-concept. Therefore, the theoretical foundation for the project rests with Cooley's theory of self-concept development. Before discussing Cooley's Looking Glass Self, it is important to address the foundation for the theory. Cooley's Looking Glass Self stems from the Symbolic Interactionism Theory. A brief discussion of the theory follows.

#### Symbolic Interactionism Theory

Symbolic Interactionism Theory was developed in the early 1900s and has been identified as one of the most widely utilized theories in the field of Family Development.



The theory's rapid development began during the Industrial Revolution when society as a whole was moving from work on rural farms to factory-type work in large cities. Feeling as though they had little control over the changing society, individuals wanted information on how to cope with the changes as well as how gain more control over what was happening within their families during the time of rapid change. Symbolic Interactionism seemed to provide comfort and empowerment to individuals and families by proclaiming that society was not in control of its people, but that individuals have the power to change society and its course through communication and interactions with each other (Ingoldsby, Smith, & Miller, 2004).

There are two overarching themes of Symbolic Interactionism Theory and each theme carries with it primary assumptions. The first theme focuses on the role of meaning within its relationship to human behavior. The first assumption related to meaning is that "people will react to something according to the meaning that the thing has for them" (Ingoldsby et al., 2004, p.84). For example, two individuals walk into a fitness center and see a treadmill. One individual, who is a running enthusiast, eagerly steps on the treadmill ready to start a five-mile run. The other individual, who is overweight and out of shape, steps onto the treadmill, dreading the thirty-minute walk she has ahead of her.

The second assumption is that individuals learn about the meaning of things through their interactions with others. Looking at the previous example, perhaps if the overweight and out of shape individual had a friend who lost weight and became fit through the use of a treadmill, the overweight individual would view the treadmill more positively and look forward to enhancing her health.

The second overarching theme of Symbolic Interactionism is related to the development of self-concept, which is of particular interest for the current project. The

first assumption of the theory is that infants are born into the world “asocial.” This means that, at birth, infants do not have any predetermined ideas about who they are but instead develop their sense of self through their interactions with others. Further, individuals are continually influenced by the values and norms of the society in which they live. For example, cigarette smoking used to be viewed as “cool” and promoted by society as a weight loss tool and to aid in relaxation. Society has since changed and with backing of current research on the dangers of smoking, the practice is not considered as “cool” or beneficial as it was several years ago.

Symbolic Interactionism Theory contains many components. A common factor among the components is the vast role that society holds in the development of human behavior. From Symbolic Interactionism, Cooley furthered his research on self-concept development by emphasizing the role that society plays within that relationship. Most notably, from that research, his theory of the Looking Glass Self emerged.

#### Cooley’s Looking Glass Self

“Each to each a looking glass, Reflects the other that doth pass” (Cooley, 1922). The Looking Glass Self is founded on the premise that an individual’s sense of self is developed through the reciprocal relationship between the individual and society. To illustrate the concept, Cooley uses the example of the “looking glass,” whereas society acts as a mirror which reflects back to the individual society’s perceptions and ideas about him or her.

According to Cooley’s theory, there are three stages that individuals go through in order to make a self-appraisal and form a self-concept. It is important to note that one’s self-concept typically is not determined through one isolated interaction with society.

More often, self-concept it is formed through the repeated interactions one has with society.

The first stage in the development of a self-appraisal involves one imagining how they appear to others within society. For example, does one imagine he or she is thin, or does one imagine he or she is overweight or obese? Second, the individual imagines how society will judge their appearance. Does his or her society value “thinness” and therefore would consider a thin individual attractive, whereas an overweight or obese individual within his or her society would be considered unattractive? Last, the individual makes a self-evaluation of the imagined interactions. If one’s society values thinness, a thin individual may feel a sense of happiness and self-satisfaction, and may adopt a positive self-concept knowing that within his or her society thinness is valued and considered an attractive quality. An obese individual may feel unhappy and isolated, or he or she may develop a negative self-concept believing that their society values only thin individuals.

As aforementioned, self-concept is developed by an individual’s interaction with society that leads one to make a self-appraisal. The interaction and evaluation of the interaction is based on a three-step process. Based on Cooley’s theory, if one’s interactions with society are generally positive, it may be assumed that one’s self appraisal, or self-concept, would also be positive. If one’s interactions with society are generally negative, it may also be assumed that one’s self-appraisal, or self-concept, would be negative. Because the purpose the project is to better understand the relationship between child weight status and adult quality of life, with child self-concept being a potentially mediating variable, it is also important to investigate variables that influence the process of self-concept formation.

In reviewing the research literature, it was noted that many children who are either overweight or obese report a low self-concept and have endured teasing (Eisenberg, 2003; Janssen, 2004; Neumark-Sztainer, 2002). It may be agreed that being teased is a negative interaction between the child and society and that teasing experiences may contribute to negative self-appraisal and low self-concept. Therefore, teasing experiences during childhood will be investigated for its potential relationship with child weight status, child self-concept, and adult quality of life.

Cooley writes:

“As we see our face, figure, and dress in the glass, and are interested in them because they are ours, and pleased or otherwise with them according as they do or do not answer to what we should like them to be, so in imagination we perceive in another’s mind some thought of our appearance, manners, aims, deeds, character, friends, and so on, and are variously affected by it” (Cooley, 1902, p.183-184).

In the project, “another’s mind” includes parents, siblings, peers, relatives, and other adults who interacted with the participants during their childhoods. The thoughts of others regarding participant’s “appearance, manners, aims, deeds, character, friends, and so on” are then reflected back to the participant in the looking glass in the form of teasing. Cooley also states that individuals are “variously affected by it.” In this project, the “it” refers to childhood teasing, and how the individual is affected by the teasing will be measured by assessing adult quality of life.

For the purpose of the project, two forms of teasing will be investigated. Weight-based teasing is one form of teasing that will be investigated and general teasing is another form that will be investigated. Though the focus of the study is on child overweight status and obesity, and therefore, weight-based teasing, it is important also to investigate the potential relationship between general teasing experiences and adult quality of life. It is important to evaluate the potential relationship so that a comparison

between general teasing experiences and weight-based teasing experiences can be made. Therefore, general teasing experiences during childhood will be viewed in parallel to weight-based teasing experiences during childhood.

## CHAPTER 4

### ORGANIZATION AND OBJECTIVES

As indicated in the literature, there are several negative outcomes associated with overweight status and obesity in child, adolescent, and adult populations. Research, however, is lacking in the area regarding child weight status and later adult quality of life. The first purpose of the project is to examine the relationship between child weight status and adult quality of life. The second purpose of the project is to assess variables that may mediate the relationship between child weight status and adult quality of life. Based on a review of the current research literature and theory, two variables will be assessed: childhood teasing experiences and child self-concept.

#### Organization of the Project

In order to systematically and thoroughly address the relationship between child weight status and adult quality of life as well as potential mediating variables within the relationship, the project is divided into three separate studies. Details of each study will be discussed as well as each study's objectives and hypotheses. For purposes of clarity, the project's objectives and hypotheses will remain in numerical order. Also for purposes of clarity, it will be noted which groups within the project were used for each objective's statistical analysis. The groups will also remain in numerical order. Table 4.1 summarizes the characteristics of the groups utilized for the project and Figure 4.1 depicts a detailed diagram of the organization of the project.

#### Study 1

Study 1 was developed to assess the potential relationship between child weight status, child self-concept, and later adult quality of life. The study includes 3 objectives and 3 hypotheses.

### Objective 1

Objective 1 is to describe the study's participants. Characteristics of the participants include the participant's age, gender, ethnicity, socioeconomic status, adult weight status, and physical health status. Participants include groups 1 and 2 of the project.

### Objective 2

Objective 2 is to determine if there is a significant difference in the quality of life scores between adults who were overweight as children and adults who were not overweight as children. Participants include groups one and two of the project.

- Hypothesis 1: Adults who were overweight as children will have significantly lower quality of life scores than adults who were not overweight as children.
- Hypothesis 2: Adult weight status mediates the relationship between child weight status and adult quality of life.

### Objective 3

Objective 3 is to determine if there is a relationship among child weight status, child self-concept, and adult quality of life. Participants include groups one and two of the project.

- Hypothesis 3: Child weight status is negatively associated with adult quality of life.
- Hypothesis 4: Child weight status is negatively associated with child self-concept.
- Hypothesis 5: Child self-concept mediates the relationship between child weight status and adult quality of life.

## Study 2

Study 2 was developed to examine the relationship between general childhood teasing experiences, child self-concept, and adult quality of life among adults who were not overweight as children. The purpose of the study is to establish potential outcomes related to general childhood teasing and to be able to compare the outcomes of general childhood teasing experiences and later adult quality of life to weight-based childhood teasing experiences and later adult quality of life. The study includes 4 objectives and 3 hypotheses.

### Objective 4

Objective 4 is to describe the study's participants. Characteristics of the participants include the participant's age, gender, ethnicity, socioeconomic status, adult weight status, and physical health status. Participants include groups three and four of the project.

### Objective 5

Objective 5 is to determine if there is a relationship between general childhood teasing experiences, child self-concept, and adult quality of life among adults who were not overweight as children. Participants include groups three and four of the study.

- Hypothesis 6: General teasing experiences during childhood are negatively associated with adult quality of life scores.
- Hypothesis 7: General teasing experiences during childhood are negatively associated with child self-concept scores.
- Hypothesis 8: Child self-concept mediates the relationship between general childhood teasing experiences and adult quality of life among adults who were not overweight as children.



## Objective 6

Objective 6 is to determine if there is a relationship between the frequency of general teasing experiences, child self-concept, and adult quality of life among adults who experienced general teasing during childhood, and who were not overweight during childhood. Participants include group 3 of the project.

- Hypothesis 9: Frequency of general teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced general teasing during childhood.
- Hypothesis 10: Frequency of general teasing experiences during childhood is negatively associated with child self-concept among adults who experienced general teasing during childhood.
- Hypothesis 11: Child self-concept mediates the relationship between the frequency of general teasing experiences during childhood and adult quality of life among adults who experienced general teasing during childhood.

## Objective 7

Objective 7 is to determine if there is a relationship between the level of distress reported due to general teasing experiences, child self-concept, and adult quality of life among adults who experienced general teasing during childhood, and who were not overweight during childhood. Participants include group 3 of the study.

- Hypothesis 12: Level of distress reported due to general teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced general teasing during childhood.

- Hypothesis 13: Level of distress reported due to general teasing experiences during childhood is negatively associated with child self-concept among adults who experienced general teasing during childhood.
- Hypothesis 14: Child self-concept mediates the relationship between the level of distress reported due to general teasing experiences during childhood and adult quality of life among adults who experienced general teasing during childhood.

### Study 3

Study 3 was developed to examine the relationship between weight-based childhood teasing experiences, child self-concept, and adult quality of life among adults who were overweight as children. The purpose of the study is to establish potential outcomes related to weight-based teasing. The objectives and hypotheses are parallel to those of study 2. The study includes 4 objectives and 3 hypotheses.

#### Objective 8

Objective 8 is to describe the study's participants. Characteristics of the participants include the participant's age, gender, ethnicity, socioeconomic status, adult weight status, and physical health status. Participants include groups 5 and 6 of the project.

#### Objective 9

Objective 9 is to determine if there was a relationship between weight-based childhood teasing experiences, child self-concept, and adult quality of life among adults who were overweight as children. Participants include groups 5 and 6 of the study.

- Hypothesis 15: Weight-based teasing experiences during childhood are negatively associated with adult quality of life scores.

- Hypothesis 16: Weight-based teasing experiences during childhood are negatively associated with child self-concept scores.
- Hypothesis 17: Child self-concept mediates the relationship between weight-based childhood teasing experiences and adult quality of life among adults who were overweight as children.

#### Objective 10

Objective 10 is to determine if there was a relationship between the frequency of weight-based teasing experiences, child self-concept, and adult quality of life among adults who experienced weight-based teasing during childhood, and who were overweight during childhood. Participants included group five of the project.

- Hypothesis 18: Frequency of weight-based teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood.
- Hypothesis 19: Frequency of weight-based teasing experiences during childhood is negatively associated with child self-concept among adults who experienced weight-based teasing during childhood.
- Hypothesis 20: Child self-concept mediates the relationship between the frequency of weight-based teasing experiences during childhood and adult quality of life among adults who experienced weight-based teasing during childhood.

#### Objective 11

Objective 11 is to determine if there was a relationship between the level of distress reported due to weight-based teasing experiences, child self-concept, and adult quality of life among adults who experienced weight-based teasing during childhood, and who were overweight during childhood. Participants include group five of the study.

- Hypothesis 21: Level of distress reported due to weight-based teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood.
- Hypothesis 22: Level of distress reported due to weight-based teasing experiences during childhood is negatively associated with child self-concept among adults who experienced weight-based teasing during childhood.
- Hypothesis 23: Child self-concept mediates the relationship between the level of distress reported due to weight-based teasing experiences during childhood and adult quality of life among adults who experienced weight-based teasing during childhood.

Table 4.1  
Characteristics of Groups

<b>Group Number</b>	<b>Characteristics</b>
1	Participants who were overweight during childhood
2	Participants who were not overweight during childhood
3	Participants who were not overweight during childhood, and experienced general teasing during childhood
4	Participants who were not overweight during childhood, and did not experience general teasing during childhood
5	Participants who were overweight during childhood, and experienced weight-based teasing during childhood
6	Participants who were overweight during childhood, and did not experience weight-based teasing during childhood

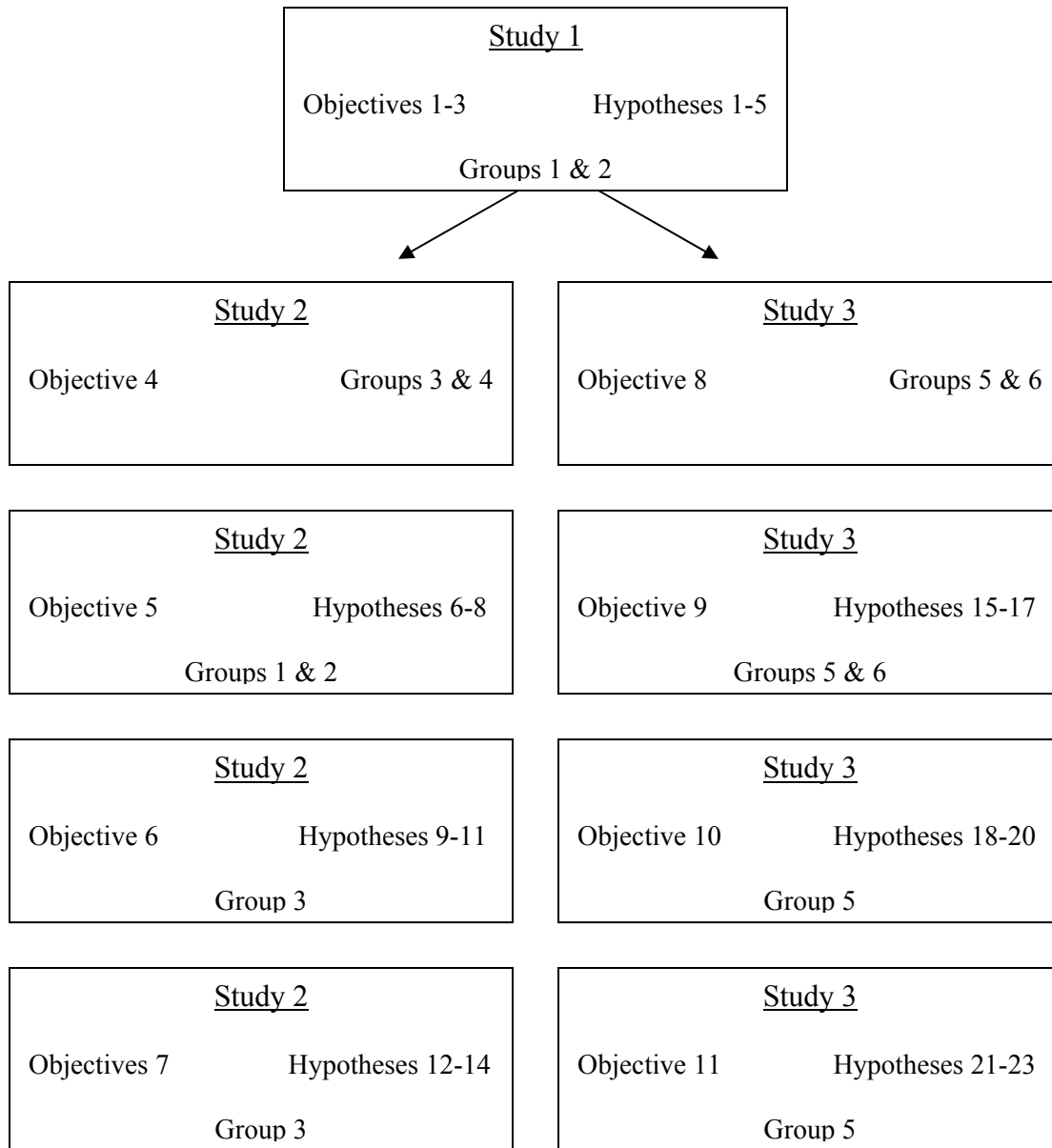


Figure 4.1  
Organization of the Project

CHAPTER 5  
METHODOLOGY

Research Design

The project employs a non-experimental research design. This type of design was chosen because it is the most appropriate design for examining independent variables which the researcher cannot manipulate (child weight status, incidences of childhood teasing, child self-concept, and adult quality of life).

Participants and Sampling

Participants of the project were Louisiana State University undergraduate and graduate students who were over 18 years of age. The researcher obtained permission from various faculty members and instructors to speak with their students during regular class meeting times. The researcher briefly discussed the study with the students and had interested students complete a five-question participant profile (Appendix A). The profile was used to determine those students who met the study's inclusion criteria. Those students who met the inclusion criteria were then notified by the researcher via email and directed to the study's four additional online questionnaires (Appendices B, C, D, & E). Students who met the study's inclusion criteria must have a) been at least 18 years of age; b) read and completed the written consent form and participant profile (Appendix A & F); and c) completed the study's four online questionnaires which included a second participant profile, an adult quality of life inventory, a child self-concept measure, and a perception of teasing scale (Appendix B, C, D, & E).

Instrumentation

A five-part instrument was utilized for data collection. Three parts of the instrument were developed by the researcher and two parts were obtained through

publishing companies. The three parts of the instrument that were developed by the researcher were each pilot tested for clarity and consistency before data collection for the project began.

#### Part One: Participant Profile I

Participant Profile I, developed by the researcher, consisted of 5 questions and was used to determine if interested students met the study's inclusion criteria. Students interested in the study must have met these criteria: a) been at least 18 years of age; b) read and completed the written consent form and Participant Profile I (Appendices A & F); and c) were willing and able to complete the study's instrument which included four additional online questionnaires. The Participant Profile I was administered to all students who were interested in participating in the study.

#### Part Two: Participant Profile II

Participant Profile II was developed by the researcher to collect descriptive data regarding the study's participants. Information regarding participant's ethnicity, marital status, current physical health, socioeconomic status, current weight status, history of peer relationships, and dieting and weight loss history were obtained using this portion of the instrument. Information from the instrument was also used to assign participants to appropriate groups for hypothesis testing. A summary table describing the characteristics of each group may be found in Table 4.1.

#### Part Three: Perception of Childhood Teasing Scale

Part III of the instrument was a measure to assess perceptions of childhood teasing experiences and consisted of two versions. The first version contained questions participants answered in regards to general teasing experiences during their childhoods. Version one was given to participants who were not overweight or obese as children. The

second version of the measure contained questions regarding weight-based teasing experiences during childhood. Version two was given to participants who identified themselves as overweight or obese as children. Though the core questions of the childhood teasing scale remained the same, participants who were not overweight or obese during childhood were asked to answer the questions in regard to general teasing experiences during childhood, and participants who were overweight or obese during childhood were asked to answer the questions in regard to weight-based teasing experiences during childhood. Examples from both version one and version two of the measure may be found in Appendix E.

Both versions of the measure were adapted from Thompson and Cattarain's (1993) Perception of Childhood Teasing Scale, and included additional questions developed by the researcher. The additional questions were developed to assess both the environment where incidences of teasing occurred as well as to determine the person or persons who were responsible for the teasing and will be utilized in further studies. Thompson and Cattarain's original instrument consisted of 10 items which measured the frequency of teasing participants received at some time during their childhood. Higher scores on the scale were indicative of a greater teasing history. The instrument also measured how upset the participant felt because of the teasing. Both the frequency of teasing and how upset the participants felt about the teasing were measured using a Likert-type scale. Frequency of teasing ranged from (1) "never been teased" to (4) was teased "very often." How upset the participant felt regarding being teased ranged from (1) "not upset" to (4) "very upset." Overall scores for frequency and how upset the participant felt by the teasing were determined by calculating the mean score for both of the variables. The original perception of childhood teasing scale has been used in several



published studies (Matz, Foster, Faith, & Wadden, 2002; Vessey, Duffy, O'Sullivan, & Swanson, 2003; Wardle & Fox, 2002).

#### Part Four: Adult Quality of Life Profile

Adult quality of life was assessed using the Adult Quality of Life Profile, developed by the Centre for Health Promotion in Toronto, Ontario, Canada (2002). The profile consisted of 54 items, six items within nine sub-domains. The first domain was the participants' sense of being. The "Being" domain consisted of three sub-domains: Physical Being, Psychological Being, and Spiritual Being. Examples within the Physical Being sub-domain included the participants' physical ability to be independent and engage in activities as well as the participants' nutrition and food intake. The second sub-domain included the participants' sense of Psychological Being. Examples from this sub-domain included the participants being free of worry and stress and the usual mood of the participants. Sub-domain three included the participants' sense of Spiritual Being. Examples included the participants having hope for the future and their own ideas of right and wrong.

The second domain in the quality of life profile assessed the participants' sense of belonging. The "Belonging" domain consisted of three sub-domains: Physical Belonging, Social Belonging, and Community Belonging. Physical Belonging referred to the participants' assessment of their house or apartment in which they live as well as their assessment of the neighborhood in which they live. The second sub-domain, Social Belonging, referred to factors such as the participants being close to people in their family and having a spouse or special person within their life. Community Belonging was the third sub-domain. Examples within this domain included the participants being able

to obtain professional services (i.e. medical, social) and the participants having enough money to pay bills and purchase items of interest.

Becoming was the third domain within the profile. This domain consisted of three sub-domains: Practical Becoming, Leisure Becoming, and Growth Becoming. Examples of Practical Becoming included participants being able to do things around their homes and working at a job or going to school. Leisure Becoming included items such as engaging in outdoor activities (walks, cycling) as well as engaging in indoor activities (TV, reading). Examples of Growth Becoming included things which participants did to cope with change (seek information and support, attend religious services).

Items within each of the nine sub-domains were rated by the participants on both their importance to the participants as well as the participants satisfaction with the items. The rating system utilized a five- point Likert-type scale. Responses ranged from (1) “Not at all important” to (5) “Extremely important,” and (1) “Not at all satisfied” to (5) “Extremely satisfied.” Participant’s Quality of Life Score were computed using the following formula:  $[QOL = (Importance\ Score/3) * Satisfaction\ Score - 3]$ . Therefore, QOL scores ranged from -3.33 (not at all satisfied with extremely important issues) to 3.33 (extremely satisfied with extremely important issues). Quality of life scores above zero reflect a positive quality of life, and scores below zero represent poor quality of life. Overall, a score greater than 1.5 was considered excellent, and scores between .51 and 1.50 indicated an acceptable quality of life. Scores between -.50 and +.50 indicated an adequate quality of life score and scores between -.51 and -1.5 indicated a problematic quality of life score. Scores below -.150 indicated a very problematic quality of life score.

The Quality of Life Profile’s internal consistency coefficients (Cronbach’s  $\alpha$ ) were calculated for each domain and their sub-domains. For Importance, all domains and

sub-domains exceeded ( $\alpha = .70$ ), except for Spiritual Being ( $\alpha=.68$ ) and Community Belonging ( $\alpha= .62$ ). For Satisfaction, all coefficients exceeded ( $\alpha =.70$ ), indicating an internally consistent measure. The measure has been utilized in published studies (Parsons, Johnston, & Slutsky, 2003; Raphael, Waalen, & Karabanow, 2001). A sample of the Adult Quality of Life Profile may be found in Appendix C.

#### Part Five: Self-Concept Scale

The Piers-Harris Children's Self-Concept Scale was selected for use in the project to assess participants' overall self-concept during childhood. The measure consisted of 60 statements that indicated how participants felt about themselves during their childhood. The participants were asked to select either "yes" or "no" for each statement as it applied to them. For example, one statement was "I was a good person." The participant selected "yes" if the statement was true for him, or the participant selected "no" if the statement was not true for him.

The instrument also consisted of 6 domains to further assess specific components of self-concept. The first domain was Behavioral Adjustment and contained 14 items such as "I was well-behaved at school" and "I got into a lot of fights." The second domain was Intellectual and School Status and consisted of 16 items. Examples of statements in the domain included "I was smart" and "My friends like my ideas." Physical Appearance and Attributes was captured in the third domain and included 11 statements such as "My looks bothered me" and "I had a pleasant face." The fourth domain was Freedom from Anxiety and consisted of 14 statements including "I was nervous" and "I cried easily." Popularity was assessed in the fifth domain. The domain consisted of 12 statements such as "It was hard for me to make friends" and "I felt left out of things." The last domain was Happiness and Satisfaction and consisted of 10

statements. Examples of the statements included “I was a happy person” and “I was easy to get along with.”

Upon completion of the self-concept measure, a score was calculated for each participant. The scores ranged from 0-60. A score of 60 indicated that the participant was in the “high range” and had a “strongly positive general self-appraisal.” Participants with this score were typically accustomed to success, highly motivated, and considered themselves likeable and valued by others. These participants were also likely to consider themselves happy and free from worry. Participants who scored between 40 and 59 were considered to be in the “average” range. Participants in this range recognized both the positive and negative aspects of themselves. Participants in the “higher average” range tended to sway more positively and participants in the “lower average” tended to sway more negatively in their self-appraisals. The low range of the instrument consisted of scores lower than 39. Participants who scored less than 39 tended to have “serious doubts” about their self-worth and tended to view themselves negatively in many different areas. Participants in the low range also were more likely to lack self-confidence, be more anxious, have difficulty making friends, and report being unpopular and socially isolated.

The Piers-Harris Children’s Self-Concept Measure internal consistency coefficients (Cronbach’s  $\alpha$ ) were calculated for the total instrument as well as its 6 domains. The total instrument and its 6 domains all showed good internal consistency (Total  $\alpha$ = .91), Behavioral Adjustment ( $\alpha$ = .81), Intellectual and School Status ( $\alpha$ = .81), Physical Appearance and Attributes ( $\alpha$ = .75), Freedom from Anxiety ( $\alpha$ = .81), Popularity ( $\alpha$ = .74), and Happiness and Satisfaction ( $\alpha$ = .77). The Piers-Harris Children’s Self-Concept Scale has been used in several published research studies (Deluty, 1981;

Gilberts, 1983; Field, 1984; Lewis & Knight, 2000). A sample of the Piers-Harris Children's Self-Concept Scale is presented in Appendix D.

#### Data Collection Procedures

The researcher obtained permission to conduct the project from the Louisiana State University Institutional Review Board (Appendix G). Upon IRB approval, data collection for the project began on August 15, 2005. Participation for the project was solicited in two ways. First, graduate students attending LSU's Graduate Student Orientation were informed about the project and asked if they would be willing to participate. Interested students completed the Participant Profile I and were told that those who met the project's inclusion criteria would be notified via email and asked to complete the project's remaining online questionnaires. Students who met the project's inclusion criteria were emailed a link to the study's questionnaires as well as a unique Participant Identification Number (ID) which was necessary in order to access the online questionnaires. The four online questionnaires took approximately 30 minutes to complete. After participants completed the four online questionnaires, they received an email thanking them for their participation. If the participant did not complete the online questionnaires within one week, the researcher sent the participant a reminder email, and asked the participant to complete the online surveys within the next week. If the participant did not complete the online questionnaires during the reminder week, the researcher sent a final reminder to the participant and the participant was asked again to complete the online questionnaires within the week. If the participant did not complete the online questionnaires within the three week period, the participant was excluded from the project.

During the 7<sup>th</sup> week of the Fall semester, the researcher spoke with both undergraduate and graduate students and requested their participation in the project. The researcher obtained permission from LSU faculty members and instructors to speak with their students during the first ten minutes of a regularly schedule class time. During this time the researcher spoke briefly about the research study, and then had interested students read and sign the project's consent form and complete the Participant Profile I. The researcher determined from the responses on the Participant Profile I the students who met the study's inclusion criteria. Students who met the inclusion criteria were notified by the researcher via email and asked to complete the study's four additional online questionnaires. Students were given a link to the study's questionnaires as well as a unique Participant Identification Number (ID) which had to be entered upon accessing the online questionnaires. The four online questionnaires took approximately 30 minutes to complete. After participants completed the four online questionnaires, they received an email thanking them for their participation. If the participant did not complete the online questionnaires within one week, the researcher sent the participant a reminder email along with the link to the online questionnaires and asked the participant to complete the online surveys within the next week. If the participant did not complete the online questionnaires during the reminder week, the researcher sent a final reminder to the participant along with the link to the online questionnaires, and asked the participant again to complete the online questionnaires within the week. If the participant did not complete the online questionnaires within the three week period, the participant was excluded from the study.

## Data Analysis

Data analysis procedure will be described for each research objective, and will be organized by the project's three studies. For each analysis the alpha level was set to .05. Data obtained from each instrument was entered into a database created in the SPSS Data Analysis System. The researcher was responsible for coding, data entry, and data analysis.

### Study 1

#### Objective 1

Objective 1 was to describe the study's participants based on the responses from Participant Profile II. Characteristics of the study's participants included gender, age, ethnicity, socioeconomic status, childhood weight status, adult weight status, and current health status. Because the characteristics were measured on a categorical scale of measurement, they were summarized using frequencies and percentages in the results chapter of the manuscript.

#### Objective 2

Objective 2 was to determine if there was a significant difference in adult quality of life scores between adults who were overweight as children (group one), and adults who were not overweight as children (group two). Hypothesis 1 stated that adults who were overweight as children will have a lower adult quality of life score than adults who were not overweight as children. Analysis of Variance (ANOVA) was used to determine if there was a significant difference between the adult quality of life scores between adults who were overweight as children and adults who were not overweight as children.

Hypothesis 2 stated that adult weight status mediates the relationship between child weight status and adult quality of life. Criteria developed by Baron and Kenny

(1986) were utilized in the data analysis to test for mediation. Baron and Kenny describe a mediating variable to be a variable that accounts for the relationship between an independent variable and a dependent variable. There were three criteria Baron and Kenny stated that must be met in order to determine if a variable does mediate the relationship between an independent variable and a dependent variable. Figure 5.1 may be referred to as the criteria are noted.

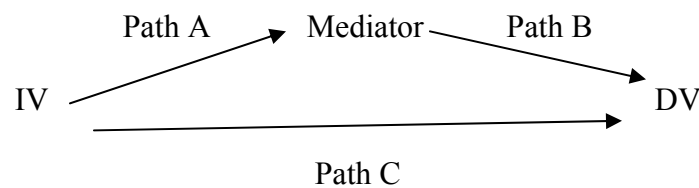


Figure 5.1  
Baron and Kenney's Criteria for Mediation

The first criterion was that there must be a significant association between the independent variable and the potential mediating variable (Path A). The second criterion was that there must also be a significant association between the potentially mediating variable and the dependent variable (Path B). Finally, when both path A and path B are controlled for, the previously significant relationship between the independent variable and the dependent variable (Path C) is either no longer significant or reduced in magnitude.

There are two types of mediation: full mediation and partial mediation. Full mediation may be concluded when the mediator accounts for all of the relationship between the independent variable and the dependent variable, and therefore, the relationship between the independent variable and the dependent variable (Path C) is no longer significant when the mediator is included in the model. Partial mediation may



occur when part of the relationship between the independent variable and the dependent variable may be accounted for by the mediating variable. Partial mediation may be concluded if the relationship between the independent variable and the dependent remains significant, but is reduced in magnitude when the mediating variable is included in the model. Hierarchical regression models were used to assess mediation within the hypothesized relationships and the indirect effect of the relationship between the independent variable and dependent variable through the potentially mediating variable was also tested for statistical significance.

The indirect effect was tested for statistical significance in order to provide more evidence to evaluate mediation within the relationship between the independent variable and dependent variable (MacKinnon, D.P., Lockwood, C.M., Hoffman, J.M., West, S.G., & Sheets, V. 2002). This second step not only provided more evidence for mediation, but it also provided support when the strength of Path C (the relationship between the independent variable and the dependent variable) was reduced only slightly when the potential mediator was included in the regression model. The statistical significance of the indirect effect was calculated by using a three-step process. First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between the independent variable and the potential mediator) by the unstandardized beta (b) from Path B (the relationship between the potential mediator and the dependent variable). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a^2 \sigma_b^2)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect was calculated by dividing the indirect effect by its standard error. If the modified z-score was greater than .97 the indirect effect was considered statistically significant (MacKinnon et al., 2002). It should be noted that Baron and Kenny's criteria as well as hierarchical regression and a calculation of the indirect effect, as described by MacKinnon et al., were utilized with this and all subsequent hypotheses testing that involved potential mediation.

As previously mentioned, hypothesis two stated that adult weight status mediates the relationship between child weight status and adult quality of life (Figure 5.2).

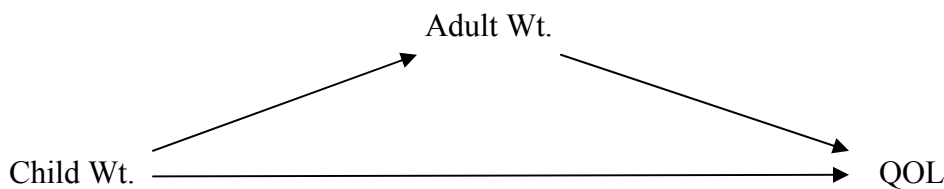


Figure 5.2  
Mediation Model 1

Hierarchical regression model was used to assess the relationship. First a regression model was tested to determine if there was a significant association between the independent variable (child weight status) and the potential mediator (adult weight status). A second regression model was then tested to determine if there was a significant association between the potential mediator (adult weight status) and the dependent variable (adult quality of life). A final regression model was tested to determine if the association between the independent variable (child weight status) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediating variable was included in the regression model. If child weight status was either reduced in magnitude or no longer significant, then it was concluded that adult weight status mediated the relationship between child weight status

and adult quality of life. More evidence to support mediation was also sought by testing the statistical significance of the indirect effect. The indirect effect was calculated by utilizing a three-step process (MacKinnon et al., 2002). First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between child weight status and adult weight status) by the unstandardized beta (b) from Path B (the relationship between adult weight status and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

### Objective 3

Objective 3 was to determine if there was a significant relationship among child weight status, child self-concept, and adult quality of life. Hypothesis three stated that child weight status was negatively associated with adult quality of life. A correlation model was tested between groups one and two to determine if adults who were overweight as children (group 1) reported lower adult quality of life scores than adults who were not overweight as children (group 2).

Hypothesis 4 stated that child weight status was negatively associated with child self-concept. A correlation model was tested to determine if adults who were overweight as children (group 1) reported lower child self-concept scores than adults who were not overweight as children (group 2).

Hypothesis 5 stated that child self-concept mediates the relationship between child weight status and adult quality of life (Figure 5.3).

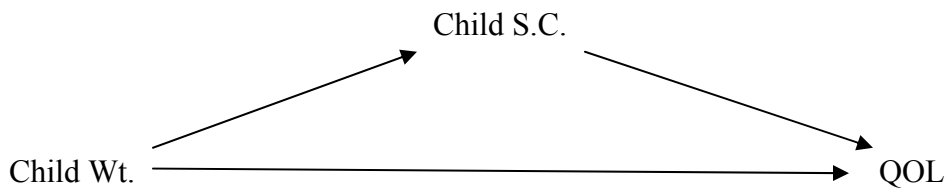


Figure 5.3  
Mediation Model 2

Hierarchical regression model was tested to determine if child self-concept mediated the relationship between child weight status and adult quality of life. First a regression model was tested to determine if there was a significant association between the independent variable (child weight status) and the potential mediator (child self-concept). A second regression model was tested to determine if there was a significant association between the potential mediator (child self-concept) and the dependent variable (adult quality of life). A final regression model was tested to determine if the association between the independent variable (child weight status) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediating variable was included in the regression model. If child weight status was either reduced in magnitude or no longer significant, then it may be concluded that child self-concept mediated the relationship between child weight status and adult quality of life.

To add additional evidence for the mediation analysis, the indirect effect of the relationship was calculated and tested for statistical significance. The indirect effect was calculated by utilizing a three-step process (MacKinnon et al., 2002). First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the

relationship between child weight status and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b^2)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

## Study 2

### Objective 4

Objective 4 was to describe the study's participants based on the responses from Participant Profile II. Characteristics of the study's participants included gender, age, ethnicity, socioeconomic status, childhood weight status, adult weight status, and current health status. Because the characteristics were measured on a categorical scale of measurement, they were summarized using frequencies and percentages.

### Objective 5

Objective 5 was to determine if there was a relationship between general childhood teasing experiences, child self-concept, and adult quality of life among adults who were not overweight as children. Data from group three (adults who were not overweight during their childhood, but experienced general teasing during their childhood) and group four (adults who were not overweight during their childhood and did not experienced general teasing during childhood) were used to complete the objective.

Hypothesis 6 stated that general teasing experiences during childhood was negatively associated with adult quality of life scores. A correlation analysis was run to determine if the hypothesis was supported.

Hypothesis 7 stated that general teasing during childhood was negatively associated with child self-concept scores. A correlation analysis was run to assess the potential relationship.

Hypothesis 8 stated that child self-concept mediates the relationship between adults who experienced general teasing experiences during childhood and their later adult quality of life (Figure 5.4)

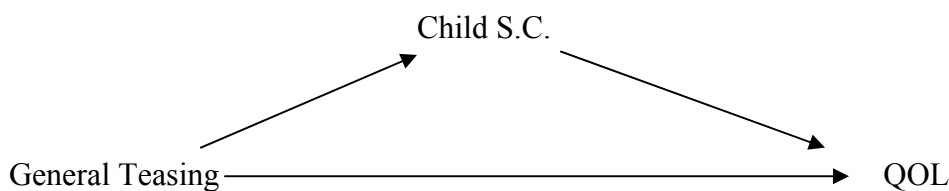


Figure 5.4  
Mediation Model 3

Hierarchical regression model was tested to determine if child self-concept mediated the relationship between general childhood teasing experiences and adult quality of life. First a regression model was tested to determine if there was a significant association between the independent variable (general childhood teasing experiences) and the potential mediator (child self-concept). A second regression model was tested to determine if there is a significant association between the potential mediator (child self-concept) and the dependent variable (adult quality of life). A final regression model was tested to determine if the association between the independent variable (general childhood teasing experiences) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediating

variable was included in the regression model. If general childhood teasing experiences was either reduced in magnitude or no longer significant, then it was concluded that child self-concept mediates the relationship between general childhood teasing experiences and adult quality of life.

To add additional evidence for the mediation analysis, the indirect effect of the relationship was calculated and tested for the statistical significance. The indirect effect was calculated by utilizing a three-step process (MacKinnon et al., 2002). First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between general teasing experiences and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

#### Objective 6

Objective 6 was to determine if there was a significant relationship between the frequency of general teasing experiences, child self-concept, and adult quality of life among adults who experienced general teasing during childhood, but were not overweight during childhood (group 3). Hypothesis nine stated that the frequency of general teasing experiences during childhood was negatively associated with adult quality

of life among adults who experienced general teasing during childhood. A correlation analysis was used to assess the relationship.

Hypothesis 10 stated that frequency of general teasing experiences during adulthood was negatively associated with child self-concept among adults who experienced general teasing during childhood. The relationship was assessed using a correlation analysis.

Hypothesis 11 stated that child self-concept mediates the relationship between the frequency of general childhood teasing experiences and adult quality of life among adults who experienced general teasing during childhood (Figure 5.5).

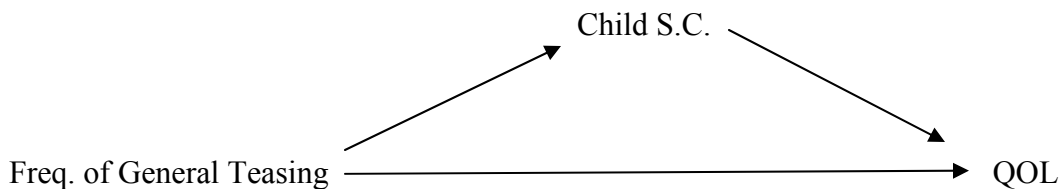


Figure 5.5  
Mediation Model 4

Hierarchical regression model was tested to determine if child self-concept mediates the relationship between general childhood teasing experiences and adult quality of life. First a regression model was tested to determine if there was a significant association between the independent variable (frequency of general childhood teasing experiences) and the potential mediator (child self-concept). A second regression model was tested to determine if there was a significant association between the potential mediator (child self-concept) and the dependent variable (adult quality of life). A final regression model was run to determine if the association between the independent variable (frequency of general childhood teasing experiences) and the dependent variable



(adult quality of life) was either no longer significant or reduced in magnitude when the potential mediating variable was included in the regression model. If the frequency of general childhood teasing experiences was either reduced in magnitude or no longer significant, then it was concluded that child self-concept mediated the relationship between the frequency of general childhood teasing experiences and adult quality of life.

To add additional evidence for the mediation analysis, the indirect effect of the relationship was calculated and tested for the statistical significance. The indirect effect was calculated by utilizing a three-step process (MacKinnon et al., 2002). First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between the frequency of general teasing experiences and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

### Objective 7

Objective 7 was to determine if there was a significant relationship between the level of distress reported due to general teasing experiences during childhood, child self-concept, and adult quality of life among adults who were not overweight during childhood, but experienced general teasing (group three). Hypothesis 12 stated that the level of distress reported due to general teasing experiences during childhood was

negatively associated with adult quality of life among adults who experienced general teasing during childhood. Correlation analysis was run to assess the relationship.

Hypothesis 13 stated that the level of distress reported due to general teasing experiences was negatively associated with child self-concept among adults who experienced general teasing during childhood. The relationship was assessed using a correlation analysis.

Hypothesis 14 stated that child self-concept mediates the relationship between the level of distress reported due to general childhood teasing experiences and adult quality of life among adults who experienced general teasing during adulthood (Figure 5.6).

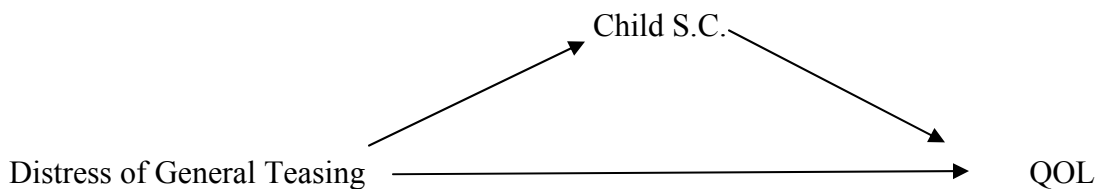


Figure 5.6  
Mediation Model 5

Hierarchical regression model was tested assess the relationship. First, a regression model was to determine if there was a significant association between the independent variable (level of distress) and the dependent variable (adult quality of life). A second regression was tested to assess the significance of the relationship between the potential mediator (child self-concept) and the independent variable (adult quality of life). A third regression was tested to determine if the association between the independent variable (level of distress) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediator (child self-concept) was included in the regression model. If the level of distress was either reduced in magnitude or no longer significant, then it was concluded that child self-concept

mediates the relationship between the level of distress of general childhood teasing experiences and adult quality of life.

To add additional support to the mediation analysis, the indirect effect of the relationship was calculated and tested for the statistical significance. The indirect effect was calculated by utilizing a three-step process. First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between the level of distress of general teasing experiences and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b)$$

$\sigma$  = standard error    b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

### Study 3

#### Objective 8

Objective 8 was to describe the study's participants based on the responses from Participant Profile II. Characteristics of the study's participants included gender, age, ethnicity, socioeconomic status, childhood weight status, adult weight status, and current health status. Because the characteristics were measured on a categorical scale of measurement, they were summarized using frequencies and percentages.

## Objective 9

Objective 9 was to determine if there was a relationship between childhood weight-based teasing experiences, child self-concept, and adult quality of life. Groups 5 and 6 (adults who were overweight during their childhood and experienced weight-based teasing, and adults who were overweight during their childhood and did not experience weight-based teasing) were utilized to complete the objective.

Hypothesis 15 stated that weight-based teasing during childhood was negatively associated with adult quality of life scores. A correlation analysis was used to assess the relationship.

Hypothesis 16 stated that weight-based teasing experiences during childhood was negatively associated with child self-concept scores. A correlation analysis was used to assess the relationship.

Hypothesis 17 stated that child self-concept mediates the relationship between weight-based teasing experiences during childhood and adult quality of life among adults who were overweight as children (Figure 5.7).

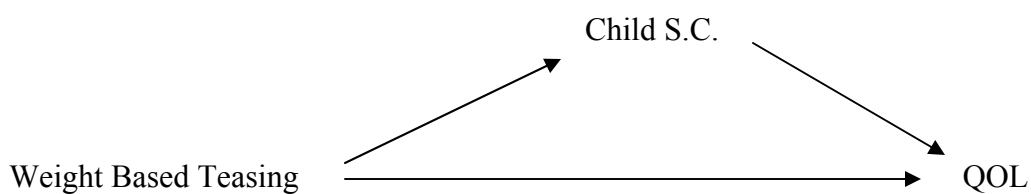


Figure 5.7  
Mediation Model 6

Hierarchical regression model was tested to assess the relationship. First, a regression model was tested to determine if there was a significant association between the independent variable (weight-based teasing) and the dependent variable (adult quality of life.) A second regression model was tested to assess the significance of the

relationship between the potential mediator (child self-concept) and the independent variable (adult quality of life). A third regression model was tested to determine if the association between the independent variable (weight-based teasing) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediator (child self-concept) was included in the regression model. If the variable, weight-based teasing, was either reduced in magnitude or no longer significant, then it was concluded that child self-concept mediates the relationship between weight-based teasing experiences in childhood and adult quality of life.

To add additional support to the mediation analysis, the indirect effect of the relationship was calculated and tested for the statistical significance. The indirect effect was calculated by utilizing a three-step process. First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between weight-based teasing experiences and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a^2 \sigma_b^2)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

#### Objective 10

Objective 10 was to determine if there was a relationship between the frequency of weight-based teasing experiences during childhood, child self-concept, and adult

quality of life among adults who experienced weight-based teasing during childhood, and who were overweight during childhood (group 5). Hypothesis 18 stated that frequency of weight-based teasing experiences during childhood was negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood. Correlation analysis was used to assess the relationship.

Hypothesis 19 stated that the frequency of weight-based teasing experiences during childhood was negatively associated with child self-concept among adults who experienced weight-based teasing during childhood. To assess the relationship, a correlation analysis was used.

Hypothesis 20 stated that child self-concept mediates the relationship between the frequency of weight-based teasing experiences during childhood and adult quality of life among adults who experienced weight-based teasing during childhood (Figure 5.8).

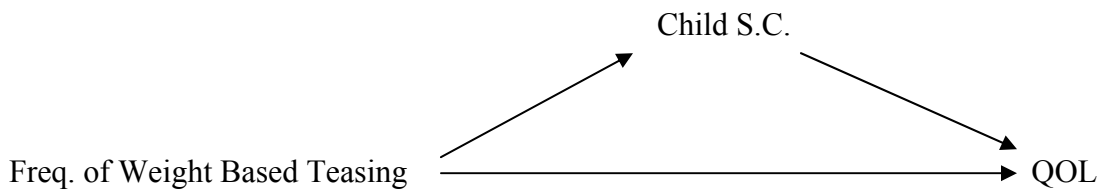


Figure 5.8  
Mediation Model 7

Hierarchical regression model was tested to assess the relationship. First, a regression model was tested to determine if there was a significant association between the independent variable (frequency of weight-based teasing) and the dependent variable (adult quality of life.) A second regression model was tested to assess the significance of the relationship between the potential mediator (child self-concept) and the independent variable (adult quality of life). A third regression model was tested to determine if the association between the independent variable (frequency of weight-based teasing) and the

dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediator (child self-concept) was included in the regression model. If the variable, frequency of weight-based teasing, was either reduced in magnitude or no longer significant, then it was concluded that child self-concept mediates the relationship between frequency of weight-based teasing experiences in childhood and adult quality of life.

To add additional support to the mediation analysis, the indirect effect of the relationship was calculated and tested for the statistical significance. The indirect effect was calculated by utilizing a three-step process. First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between the frequency of weight-based teasing experiences and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

### Objective 11

Objective 11 was to determine if there was a relationship between the level of distress reported due to weight-based teasing experiences during childhood, child self-concept, and adult quality of life among adults who were overweight during childhood and experienced weight-based teasing (group 5). Hypothesis 21 stated that the level of

distress reported due to weight-based teasing during childhood was negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood. A correlation analysis was used to assess the relationship.

Hypothesis 22 stated that the level of distress reported due to weight-based teasing during childhood was negatively associated with child self-concept among adults who experienced weight-based teasing during childhood. To assess the relationship, correlation analysis was used.

Hypothesis 23 stated that child self-concept mediates the relationship between the level of distress reported due to weight-based teasing during childhood and adult quality of life among adults who experienced weight-based teasing during childhood (Figure 5.9).

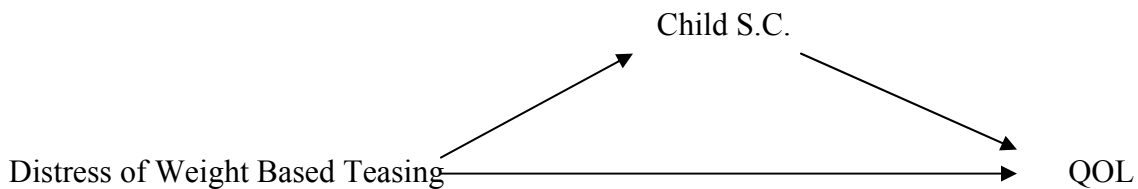


Figure 5.9  
Mediation Model 8

Hierarchical regression model was tested to assess the relationship. First, a regression model was tested to determine if there was a significant association between the independent variable (level of distress attributed to weight-based teasing) and the dependent variable (adult quality of life.) A second regression model was tested to assess the significance of the relationship between the potential mediator (child self-concept) and the independent variable (adult quality of life). A third regression model was tested to determine if the association between the independent variable (level of distress attributed to weight-based teasing) and the dependent variable (adult quality of life) was



either no longer significant or reduced in magnitude when the potential mediator (child self-concept) was included in the regression model. If the variable, level of distress, was either reduced in magnitude or no longer significant, then it was concluded that child self-concept mediates the relationship between level of distress attributed to weight-based teasing experiences in childhood and adult quality of life.

To add additional support for the mediation analysis, the indirect effect of the relationship was calculated and tested for the statistical significance. The indirect effect was calculated by utilizing a three-step process. First, the indirect effect was calculated by multiplying the unstandardized beta (b) from Path A (the relationship between the level of distress attributed to weight-based teasing experiences and child self-concept) by the unstandardized beta (b) from Path B (the relationship between child self-concept and adult quality of life). Second, the standard error of the indirect effect was calculated by using the following mathematical formula:

$$SE = \text{Square Root } (\sigma_a^2 b^2 + \sigma_b^2 a^2 + \sigma_a \sigma_b)$$

$\sigma$  = standard error; b = unstandardized beta

Third, a modified z-score for the indirect effect was calculated by dividing the indirect effect by its standard error. If the z-score was greater than .97 the indirect effect was considered statistically significant.

Because the project contained 11 objectives and 23 hypotheses, a summary table of the hypotheses, groups used in the hypotheses testing, and statistical analyses used to test the hypotheses was created (Table 5.1). The table aims to provide organization and clarity to the objectives and hypotheses in the project.

Table 5.1

Summary of Data Analysis Plan

Study	Objective	Groups	Hypothesis	Statistical Analysis
1	1	1 & 2	Description of groups	Descriptives
1	2	1 & 2	(1) Adults who were overweight as children will have a lower adult quality of life score than adults who were not overweight as children.	ANOVA
1	2	1 & 2	(2) Adult weight status mediates the relationship between child weight status and adult quality of life.	Hierarchical regression, Indirect effect
1	3	1 & 2	(3) Child weight status is negatively associated with adult quality of life.	Correlation
1	3	1 & 2	(4) Child weight status is negatively associated with child self-concept scores	Correlation
1	3	1 & 2	(5) Child self-concept mediates the relationship between child weight status and adult quality of life	Hierarchical regression, Indirect effect
2	4	3 & 4	Description of groups	Descriptives

Table 5.1 Continued

Study	Objective	Groups	Hypothesis	Statistical Analysis
2	5	3 & 4	(6) General teasing experiences during childhood is negatively associated with adult quality of life scores	Correlation
2	5	3 & 4	(7) General teasing during childhood is negatively associated with child self-concept scores	Correlation
2	5	3 & 4	(8) Child self-concept mediates the relationship between adults who experienced general teasing during childhood and their later adult quality of life	Hierarchical regression, Indirect effect
2	6	3	(9) The frequency of general teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced general teasing during childhood	Correlation
2	6	3	(10) The frequency of general teasing experiences during childhood is negatively associated with child self-concept among adults who experienced general teasing during childhood	Correlation
2	6	3	(11) Child self-concept mediates the relationship between the frequency of general teasing experiences during childhood and adult quality of life among adults who experienced general teasing during childhood	Hierarchical regression, Indirect effect

Table 5.1 Continued

Study	Objective	Groups	Hypothesis	Statistical Analysis
2	7	3	(12) The level of distress reported due to general teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced general teasing during childhood	Correlation
2	7	3	(13) The level of distress reported due to general teasing experiences during childhood is negatively associated child self-concept among adults who experienced general teasing during childhood	Correlation
2	7	3	(14) Child self-concept mediates the relationship between the level of distress reported due to general teasing experiences during childhood and adult quality of life among adults who experienced general teasing during adulthood.	Hierarchical regression, Indirect effect
3	8	5 & 6	Description of groups	Descriptives
3	9	5 & 6	(15) Weight-based teasing experiences during childhood is negatively associated with child self-concept scores	Correlation
3	9	5 & 6	(16) Weight-based teasing experiences during childhood is negatively associated with child self-concept scores	Correlation

Table 5.1 Continued

Study	Objective	Groups	Hypothesis	Statistical Analysis
3	9	5 & 6	(17) Child self-concept mediates the relationship between weight-based teasing experiences during childhood and adult quality of life among adults who were overweight as children	Hierarchical regression, Indirect effect
3	10	5	(18) The frequency of weight-based teasing experiences during childhood is negatively associated with adult quality of life among adults who experiences weight-based teasing during childhood.	Correlation
3	10	5	(19) The frequency of weight-based teasing experiences during childhood is negatively associated with child self-concept among adults who experienced weight-based teasing during childhood.	Correlation
3	10	5	(20) Child self-concept mediates the relationship between the frequency of weight-based teasing experiences during childhood and adult quality of life among adults who experienced weight-based teasing during childhood	Hierarchical regression, Indirect effect
3	11	5	(21) The level of distress reported due to weight-based teasing during childhood is negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood	Correlation

Table 5.1 Continued

Study	Objective	Groups	Hypothesis	Statistical Analysis
3	11	5	(22) The level of distress reported due to weight-based teasing during childhood is negatively associated with child self-concept among adults who experienced weight-based teasing during childhood	Correlation
3	11	5	(23) Child self-concept mediates the relationship between the level of distress reported due to weight-based teasing during childhood and adult quality of life among adults who experienced weight-based teasing during childhood.	Hierarchical regression, Indirect effect

## CHAPTER 6

### RESULTS

#### Study 1

##### Objective 1

Objective 1 was to describe the study's participants. Characteristics of the study's participants included gender, age, ethnicity, socioeconomic status, childhood weight status, adult weight status, and current health status. Results of the descriptive analysis are presented for study 1 (which is also the project's total sample) and included group 1 and group 2 (Table 6.1).

Group 1 consisted of participants who identified themselves as overweight during their childhood. This group included 59 participants who ranged in age from 20 years to 57 years (mean = 25.9 years). Approximately 73% of the participants in this group were female (n = 43), and 27% were male (n = 16). The majority of the participants were Caucasian (n = 43), reported their family socioeconomic status as upper middle to middle class (n = 52), and were not married (n = 48). Sixty-three percent of the participants reported being overweight during adulthood (n = 37), and 88% reported being in either very good or good physical health (n = 52).

Group 2 included participants who were not overweight during their childhood (n = 105). The age of the participants in this group ranged from 20 years to 53 years with a mean age of 24.4 years. Twenty-nine of the participants were male, and 76 were female. Seventy-nine percent of the participants were Caucasian (n = 83). Of the participants, 82% were not married (n = 86) and 76% reported their family socioeconomic status as upper-middle to middle class (n = 80). Twenty-two percent of the participants reported being overweight as an adult (n = 23), and 93% reported being in very good or good health (n = 98).

An ANOVA was tested to determine if there were any significant differences between group 1 and group 2 in the study. Results of the ANOVA showed that only one variable, adult

weight status, was significantly different between the groups. Because of the finding, the variable, adult weight status, was included in further analyses to test whether or not it was a mediating variable between child weight status and adult quality of life.

### Objective 2

Objective 2 was to determine if there was a significant difference in adult quality of life scores between adults who were overweight as children (group one), and adults who were not overweight as children (group two). Hypothesis one stated that adults who were overweight as children will have a lower adult quality of life score than adults who were not overweight as children. Analysis of Variance (ANOVA) was used to determine there was a significant difference between the adult quality of life scores between adults who were overweight as children and adults who were not overweight as children. Results of the analysis showed that there was a significant difference between the adult quality of life score of adults who were overweight a children and adults who were not overweight as children ( $p = .02$ ), thus hypothesis one was supported. Hypothesis two stated that adult weight status mediated the relationship between child weight status and adult quality of life. Hierarchical regression model was tested to assess the relationship. The first regression model was tested to determine if there was a significant association between the independent variable (child weight status) and the potential mediator (adult weight status). Results showed that child weight status and adult weight status were significantly associated ( $\beta = .41, p = .00$ ). A second regression was then run to determine if there was a significant association between the potential mediator (adult weight status) and the dependent variable (adult quality of life). Results showed a significant relationship between adult weight status and adult quality of life ( $\beta = -.18, p = .02$ ) A final regression was run to determine if the association between the independent variable (child weight status) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the



potential mediating variable was included in the regression model. Results showed that when adult weight status was included in the model, child weight status was no longer significant ( $\beta = -.17, p = .15$ ), indicating that adult weight status mediated the relationship between child weight status and adult quality of life. The indirect effect was also calculated and tested for significance in order to provide more evidence of mediation. The indirect effect was .299 with a modified z-score of 2.10. A z-score greater than .97 indicated statistical significance for the indirect effect. Evidence provided by both the hierarchical regression model and the significance of the indirect effect indicated that hypothesis two was supported.

### Objective 3

Objective 3 was to determine if there was a significant relationship among child weight status, child self-concept, and adult quality of life. Hypothesis three stated child weight status is negatively associated with adult quality of life. A correlation analysis was tested between groups 1 and 2 to determine if adults who were overweight as children (group 1) reported lower adult quality of life scores than adults who were not overweight as children (group 2). Results from the analysis showed that adults who were overweight as children were more likely to have lower quality of life scores ( $r = -.18$ ) than adults who were not overweight as children ( $p = .02$ ). Hypothesis 3 was supported.

Hypothesis 4 stated that child weight status is negatively associated with child self-concept. A correlation analysis was tested to determine if adults who were overweight as children (group 1) reported lower child self-concept scores than adults who were not overweight as children (group 2). Results from the analysis showed that adults who were overweight as children reported lower child self-concept scores ( $r = -.18$ ) than adults who were not overweight as children ( $p = .03$ ). Hypothesis 4 was supported.

Table 6.1  
Description of Participants in Study One

	Group 1 (n = 59)	Group 2 (n = 105)	Total (n = 164)
Variable	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )
Age			
20-22	25 (42)	32 (30)	57 (35)
23-25	22 (37)	48 (81)	70 (43)
26-28	4 (7)	17 (29)	21 (13)
29-31	0 (0)	4 (4)	4 (3)
32-above	8 (14)	4 (4)	12 (7)
Gender			
Male	16 (27)	29 (28)	45 (27)
Female	43 (73)	76 (72)	119 (73)
Ethnicity			
American Indian	0 (0)	0 (0)	0 (0)
Asian or Pacific Islander	3 (5)	2 (2)	5 (3)
Black	4 (7)	12 (11)	16 (10)
Hispanic, Spanish or Latino	3 (5)	5 (5)	8 (5)
White, not Hispanic	45 (76)	83 (79)	129 (78)
Other	4 (7)	1 (1)	5 (3)

Table 6.1 Continued

	Group 1 (n = 59)	Group 2 (n = 105)	Total (n = 164)
Variable	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )
Adult Weight Status			
Healthy Weight	21 (36)	82 (78)	104 (63)
Overweight	38 (64)	23 (22)	61 (37)
Physical Health			
Very good	18 (31)	48 (46)	66 (40)
Good	34 (58)	50 (48)	85 (52)
Fair	6 (10)	5 (5)	11 (7)
Poor	1 (2)	1 (1)	2 (1)

Because child weight status and child self-concept scores were found to be significantly associated with adult quality of life scores, it was further hypothesized that child self-concept scores mediated the relationship between child weight status and adult quality of life.

Hierarchical regression model was used to determine if child self-concept mediated the relationship between child weight status and adult quality of life. First a regression model was tested to determine if there was a significant association between the independent variable (child weight status) and the potential mediator (child self-concept). Results from the regression used in hypothesis two showed that there was a significant association between child weight status and child self-concept ( $\beta = -.18, p = .03$ ). A second regression model was then tested to determine if there was a significant association between the potential mediator (child self-concept) and the dependent variable (adult quality of life). Results from the regression showed that there was a

positive association between child self-concept and adult quality of life ( $r = .47$ ) and the relationship was significant ( $\beta = .47, p = .00$ ). A final regression model was tested to determine if the association between the independent variable (child weight status) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediating variable was included in the regression model. Results of the regression showed that when the potential mediating variable was included in the model, child weight status was no longer significant in its relationship with adult quality of life ( $\beta = -.18, p = .16$ ). To provide more evidence for mediation, the indirect effect was also calculated for the model. The indirect effect was calculated to be .05 with a modified z-score of 1.63. A z-score greater than .97 indicated statistical significance for the indirect effect. Evidence provided by both the hierarchical regression model and the significance of the indirect effect indicated that hypothesis 5 was supported.

## Study 2

### Objective 4

Objective 4 was to describe the study's participants. Characteristics of the participants included the participant's age, gender, ethnicity, socioeconomic status, adult weight status, and physical health status. Participants included groups 3 and 4 of the project (Table 5.2).

Group 3 consisted of 60 participants who were not overweight during their childhood, but experienced general teasing during their childhood. Seventy percent of the participants were female ( $n = 42$ ), and 30% were male ( $n = 18$ ). The mean age of the participants was 24.2 years and ranged from 20 years to 53 years. The majority of the participants were Caucasian ( $n = 44$ ), were not married ( $n = 49$ ), and reported their family socioeconomic status as upper-middle to middle class ( $n = 45$ ). Twenty-three percent of the participants reported being

overweight during adulthood (n = 14), and 92% reported being in either very good or good physical health (n = 55).

The fourth group included 39 participants who were not overweight during their childhood and did not experienced general teasing during childhood. The participants ranged in age from 20 years to 50 years with a mean age of 24.9 years. The majority of the participants in the group were female (n = 30), Caucasian (n = 34), not married (n = 31), and reported their family socioeconomic status as upper middle to middle class (n = 32). Twenty-three percent of the participants reported being overweight during adulthood (n= 9), and 92% reported being in either very good or good physical health (n = 26). An ANOVA was tested to determine if there were any statistical differences between the groups. Results from the analyses showed that two groups were not significantly different from each other on any demographic variables.

#### Objective 5

Objective 5 was to determine if there was a relationship between general childhood teasing experiences, child self-concept, and adult quality of life among adults who were not overweight as children. Data from group 3 (adults who were not overweight during their childhood, but experienced general teasing during their childhood) and group 4 (adults who were not overweight during their childhood and did not experienced general teasing during childhood) were used to complete the objective.

Hypothesis 6 stated that general teasing experiences during childhood was negatively associated with adult quality of life scores. A correlation analysis was run to determine if the hypothesis was to be supported. Results from the analysis showed that the relationship between general childhood teasing and adult quality of life was not significant ( $p = .11$ ). Hypothesis 6 was not supported.

Hypothesis 7 stated that general teasing during childhood was negatively associated with child self-concept scores. A correlation analysis was run to assess the potential relationship. Results from the analysis showed that there was a negative relationship between general teasing experiences during childhood and child self-concept ( $r = -.35$ ), and that the relationship was significant ( $p = .00$ ). Hypothesis 7 was supported.

Table 6.2  
Description of Participants in Study Two

	Group 3 n = 60	Group 4 n = 39	Total n = 99
Variable	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )
Age			
20-22	18 (30)	14 (36)	32 (32)
23-25	31 (52)	14 (36)	44 (44)
26-28	8 (13)	6 (15)	14 (14)
29-31	2 (3)	2 (5)	4 (4)
32-above	1 (1)	3 (7)	4 (4)
Gender			
Male	18 (30)	30 (77)	48 (48)
Female	42 (70)	9 (23)	51 (51)
Ethnicity			
American Indian	0 (0)	0 (0)	0 (0)
Asian or Pacific Islander	3 (5)	0 (0)	3 (3)
Black	9 (15)	2 (6)	11 (11)
Hispanic, Spanish or Latino	2 (3)	2 (6)	4 (4)
White, not Hispanic	45 (75)	34 (88)	79 (79)
Other	1 (1)	0 (0)	
SES			
Upper class	3 (5)	2 (6)	4 (5)
Middle-upper class	17 (28)	20 (51)	37 (37)
Middle class	28 (47)	8 (3)	36 (36)
Middle-lower class	9 (15)	12 (31)	21 (21)
Lower class	2 (3)	4 (10)	6 (6)
Adult Weight Status			
Healthy Weight	46 (77)	30 (77)	76 (76)
Overweight	14 (23)	9 (23)	23 (23)

Hypothesis 8 stated that child self-concept mediated the relationship between adults who experienced general teasing during childhood and their later adult quality of life. Because the initial relationship between general teasing during childhood and adult quality of life was not significant, hierarchical regression was not warranted, therefore hypothesis 8 was not supported.

#### Objective 6

Objective 6 was to determine if there was a significant relationship between the frequency of general teasing experiences, child self-concept, and adult quality of life among adults who experienced general teasing during childhood, but were not overweight during childhood (group 3). Hypothesis 9 stated that frequency of general teasing experiences during childhood was negatively associated with adult quality of life among adults who experienced general teasing during childhood. A correlation analysis was used to assess the relationship. Results from the analysis showed that there was a negative relationship between frequency of general teasing experiences during childhood and adult quality of life ( $r = -.15$ ), however, the relationship was not significant ( $p = .11$ ). Hypothesis 9 was not supported.

Hypothesis 10 stated that frequency of general teasing experiences during adulthood was negatively associated with child self-concept among adults who experienced general teasing during childhood. The relationship was assessed using a correlation analysis. Results from the analysis showed that the relationship between the frequency of general teasing experiences and child self-concept was negative ( $r = -.48$ ) and the relationship was significant ( $p = .00$ ).

Hypothesis 10 was supported.

Hypothesis 11 stated that child self-concept mediates the relationship between the frequency of general childhood teasing experiences and adult quality of life among adults who experienced general teasing during childhood. Because the relationship between frequency of

general childhood teasing and adult quality of life was not significant, hierarchical regression model was not tested, and hypothesis 11 was not supported.

#### Objective 7

Objective 7 was to determine if there was a significant relationship between the level of distress reported due to general teasing experiences during childhood, child self-concept, and adult quality of life among adults who were not overweight during childhood, but experienced general teasing (group 3). Hypothesis 12 stated that the level of distress reported due to general teasing experiences during childhood was negatively associated with adult quality of life among adults who experienced general teasing during childhood. Correlation analysis was run to assess the relationship. Results from the analysis showed a negative relationship between the level of distress reported due to general teasing experiences and adult quality of life ( $r = -.27$ ), and the relationship was also significant ( $p = .04$ ). Hypothesis 12 was supported.

Hypothesis 13 stated that the level of distress reported due to general teasing experiences was negatively associated with child self-concept among adults who experienced general teasing during childhood. The relationship was assessed using a correlation analysis. Results of the analysis showed that the relationship between general teasing and child self-concept was negative ( $r = -.51$ ) and that the relationship was significant ( $p = .00$ ). Hypothesis 13 was supported.

Hypothesis 14 stated that child self-concept mediates the relationship between the level of distress reported due to general childhood teasing experiences and adult quality of life among adults who experienced general teasing during adulthood. Hierarchical regression model was tested to assess the relationship. First, a regression model was tested to determine if there was a significant association between the independent variable (level of distress) and the dependent variable (adult quality of life). As shown in hypothesis 12, the relationship was significant ( $\beta = -$



.51,  $p = .04$ ). A second regression model was tested to assess the significance of the relationship between the potential mediator (child self-concept) and the independent variable (adult quality of life). The relationship was also significant ( $\beta = .60$ ,  $p = .00$ ). A third regression model was tested to determine if the association between the independent variable (level of distress) and the dependent variable (adult quality of life) was either no longer significant or reduced in magnitude when the potential mediator (child self-concept) was included in the regression model. Results from the analysis showed that the relationship between level of distress due to general teasing during childhood and adult quality of life was no longer significant (.73), indicating full mediation by child self-concept. Mediation was also supported by testing the significance of the indirect effect. The indirect effect calculation was also significant (Indirect effect = .70;  $z$ -score = 3.5) Hypothesis 14 was supported.

### Study 3

#### Objective 8

Objective 8 was to describe the study's participants. Characteristics of the participants included the participant's age, gender, ethnicity, socioeconomic status, adult weight status, and physical health status. Participants include groups 5 and 6 of the project (Table 5.3).

Group 5 consisted of 39 participants who were overweight during their childhood and experienced weight-based teasing. Seventy-two percent of the participants were female ( $n = 28$ ), and 28% were male ( $n = 11$ ). The mean age of the group was 26.7 years, and ranged from 20 years to 57 years. Most of the participants were not married ( $n = 31$ ), were Caucasian ( $n = 31$ ), and reported their family socioeconomic status as upper-middle to middle class ( $n = 24$ ). Seventy percent of the participants reported being overweight during adulthood ( $n = 27$ ), and 90% reported being in very good or good physical health ( $n = 35$ ).

Group 6 consisted participants who identified themselves as overweight during childhood, but they did not experience weight-based teasing. This group included 16 participants who ranged in age from 20 years to 37 years (mean = 24.8 years). Seventy-five percent of the participants in this group were female (n = 12), and 25% were male (n = 4). The majority of the participants were Caucasian (n = 11), reported their family socioeconomic status as upper middle to middle class (n = 14), and were not married (n = 13). Fifty percent of the participants reported being overweight during adulthood (n = 8), and 81% reported being in either very good or good physical health (n = 13). An ANOVA was tested to determine whether or not there were any significant differences between the groups on the demographic variables. Results from the ANOVA showed that there were no significant differences between the groups.

#### Objective 9

Objective 9 was to determine if there was a relationship between childhood weight-based teasing experiences, child self-concept, and adult quality of life. Groups 5 and 6 (adults who were overweight during their childhood and experienced weight-based teasing, and adults who were overweight during their childhood and did not experience weight-based teasing) were utilized to complete the objective.

Hypothesis 15 stated that weight-based teasing during childhood was negatively associated with adult quality of life scores. A correlation analysis was used to assess the relationship. Results from the analysis showed that the relationship between weight-based childhood teasing and adult quality of life was negative ( $r = -.15$ ), however, the relationship was not significant ( $p = .13$ ). Hypothesis 15 was not supported.

Hypothesis 16 stated that weight-based teasing experiences during childhood is negatively associated with child self-concept scores. A correlation analysis was used to assess

the relationship. Results from the analysis showed that the relationship was not significant ( $p = .47$ ). Hypothesis 16 was not supported.

Hypothesis 17 stated that child self-concept mediates the relationship between weight-based teasing experiences during childhood and adult quality of life among adults who were overweight as children. Because the previous two relationships were not significant (hypotheses 8 and 9), it was not necessary to test the hierarchical regression model. Hypothesis 17 was not supported.

#### Objective 10

Objective 10 was to determine if there was a relationship between the frequency of weight-based teasing experiences during childhood, child self-concept, and adult quality of life among adults who experienced weight-based teasing during childhood, and who were overweight during childhood (group 5). Hypothesis 18 stated that frequency of weight-based teasing experiences during childhood was negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood. Correlation analysis was used to assess the relationship. Results from the analysis showed that the relationship between frequency of weight-based teasing experiences and adult quality of life was negative ( $r = -.29$ ) and the relationship was significant ( $p = .03$ ). Hypothesis 18 was supported.

Hypothesis 19 stated that the frequency of weight-based teasing experiences during childhood was negatively associated with child self-concept among adults who experienced weight-based teasing during childhood. To assess the relationship, a correlation analysis was used. Results from the analysis showed that the relationship between frequency of weight-based teasing during childhood and child self-concept was negative ( $r = -.175$ ), however, the relationship was not significant ( $p = .144$ ). Hypothesis 19 was not supported.

Table 6.3  
Description of Participants in Study Three

	Group 5 n = 39	Group 6 n = 16	Total n = 55
Variable	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )	<u>n</u> ( <u>%</u> )
Age			
20-22	16 (41)	7 (44)	23 (42)
23-25	16 (41)	5 (31)	21 (38)
26-28	2 (5)	1 (6)	3 (5)
29-31	2 (5)	0 (0)	2 (3)
32-above	5 (13)	3 (19)	8 (14)
Gender			
Male	11 (28)	4 (3)	15 (27)
Female	28 (72)	12 (75)	40 (73)
Ethnicity			
American Indian	0 (0)	0 (0)	0 (0)
Asian or Pacific Islander	2 (5)	1 (6)	3 (5)
Black	2 (5)	2 (13)	4 (7)
Hispanic, Spanish or Latino	1 (3)	2 (13)	3 (4)
White, not Hispanic	30 (77)	11 (69)	41 (75)
Other	4 (10)	0 (0)	4 (7)
SES			
Upper class	0 (0)	0 (0)	0 (0)
Middle-upper class	18 (46)	8 (50)	26 (47)
Middle class	16 (41)	6 (38)	22 (40)
Middle-lower class	3 (8)	2 (13)	5 (6)
Lower class	2 (5)	0 (0)	2 (1)
Adult Weight Status			
Healthy Weight	11 (30)	8 (50)	19 (35)
Overweight	27 (70)	8 (50)	35 (64)

Hypothesis 20 stated that child self-concept mediates the relationship between the frequency of weight-based teasing experiences during childhood and adult quality of life among adults who experienced weight-based teasing during childhood. Because the relationship

between frequency of weight based teasing and child self-concept was not significant, a hierarchical regression model was not tested. Hypothesis 20 was not supported.

#### Objective 11

Objective 11 was to determine if there was a relationship between the level of distress reported due to weight-based teasing experiences during childhood, child self-concept, and adult quality of life among adults who were overweight during childhood and experienced weight-based teasing (group 5). Hypothesis 21 stated that the level of distress reported due to weight-based teasing during childhood was negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood. A correlation analysis was used to assess the relationship. Results of the analysis showed that the relationship between level of distress due to weight-based teasing and adult quality of life was negative ( $r = -.39$ ) and the relationship was also significant ( $p = .02$ ). Hypothesis 21 was supported.

Hypothesis 22 stated that the level of distress reported due to weight-based teasing during childhood was negatively associated with child self-concept among adults who experienced weight-based teasing during childhood. To assess the relationship, correlation analysis was used. Results showed that the relationship between level of distress due to weight-based teasing experiences and child self-concept was negative ( $r = -.19$ ), however, the relationship was not significant ( $p = .13$ ).

Hypothesis 23 stated that child self-concept mediated the relationship between the level of distress reported due to weight-based teasing during childhood and adult quality of life among adults who experienced weight-based teasing during childhood. Because the relationship between level of distress and child self-concept was not significant, a hierarchical regression model was not tested. Hypothesis 23 was not supported. Table 6.4 summarizes the results of the project's 3 studies.

Table 6.4  
Summary of Results

<b>Hypothesis</b>	<b>Supported</b>
Description of groups	N/A
(1) Adults who were overweight as children will have a lower adult quality of life score than adults who were not overweight as children.	Yes
(2) Adult weight status mediates the relationship between child weight status and adult quality of life.	Yes
(3) Child weight status is negatively associated with adult quality of life.	Yes
(4) Child weight status is negatively associated with child self-concept scores	Yes
(5) Child self-concept mediates the relationship between child weight status and adult quality of life	Yes
Description of groups	N/A
(6) General teasing experiences during childhood is negatively associated with adult quality of life scores	No
(7) General teasing during childhood is negatively associated with child self-concept scores	Yes

Table 6.4 Continued

<b>Hypothesis</b>	<b>Supported</b>
(8) Child self-concept mediates the relationship between adults who experienced general teasing during childhood and their later adult quality of life	No
(9) The frequency of general teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced general teasing during childhood	No
(10) The frequency of general teasing experiences during childhood is negatively associated with child self-concept among adults who experienced general teasing during childhood	Yes
(11) Child self-concept mediates the relationship between the frequency of general teasing experiences during childhood and adult quality of life among adults who experienced general teasing during childhood	No
(12) The level of distress reported due to general teasing experiences during childhood is negatively associated with adult quality of life among adults who experienced general teasing during childhood	Yes
(13) The level of distress reported due to general teasing experiences during childhood is negatively associated child self-concept among adults who experienced general teasing during childhood	Yes
(14) Child self-concept mediates the relationship between the level of distress reported due to general teasing experiences during childhood and adult quality of life among adults who experienced general teasing during adulthood.	Yes

Table 6.4 Continued

<b>Hypothesis</b>	<b>Supported</b>
Description of groups	N/A
(15) Weight-based teasing experiences during childhood is negatively associated with child self-concept scores	No
(16) Weight-based teasing experiences during childhood is negatively associated with child self-concept scores	No
(17) Child self-concept mediates the relationship between weight-based teasing experiences during childhood and adult quality of life among adults who were overweight as children	No
(18) The frequency of weight-based teasing experiences during childhood is negatively associated with adult quality of life among adults who experiences weight-based teasing during childhood.	Yes
(19) The frequency of weight-based teasing experiences during childhood is negatively associated with child self-concept among adults who experienced weight-based teasing during childhood.	No
(20) Child self-concept mediates the relationship between the frequency of weight-based teasing experiences during childhood and adult quality of life among adults who experienced weight-based teasing during childhood	No

Table 6.4 Continued



<b>Hypothesis</b>	<b>Supported</b>
(21) The level of distress reported due to weight-based teasing during childhood is negatively associated with adult quality of life among adults who experienced weight-based teasing during childhood	Yes
(22) The level of distress reported due to weight-based teasing during childhood is negatively associated with child self-concept among adults who experienced weight-based teasing during childhood	No
(23) Child self-concept mediates the relationship between the level of distress reported due to weight-based teasing during childhood and adult quality of life among adults who experienced weight-based teasing during childhood.	No

### Additional Note

Although child self-concept scores and adult quality of life scores were not compared across the project's groups, it may be of interest to note the averages of the child self-concept scores and adult quality of life scores. Table 6.5 summarizes the average child self-concept score and average adult quality of life score for each of the project's 6 groups. Participants who were overweight as children had an average self-concept score of 40.2, which was 3.6 points less than the group of participants who were not overweight as children. Group 5 (participants who were overweight as children and experienced weight-based teasing) had the lowest self-concept score (39.7). Participants in the group also had the lowest average adult quality of life score (1.94) compared to the other groups. Participants who were not overweight as children and not teased during childhood (group 4) had the highest average scores for both child self-concept and adult quality of life (48.5; 3.29).

Table 6.5  
Averages of Child Self-Concept Scores and Adult Quality of Life Scores

	Group 1 n = 59	Group 2 n = 104	Group 3 n = 60	Group 4 n = 38	Group 5 n = 39	Group 6 n = 16
Self-Concept	40.2	43.8	41.1	48.5	39.7	40.1
Quality of Life	2.17	3.0	2.67	3.29	1.94	2.45

### Summary

Objectives and hypotheses were developed for the project based on a current review of the research literature and review of developmental theory. Due to the complex nature of the

project, the project was divided into 3 studies. The first study was developed to assess the relationship between child weight status, child self-concept, and adult quality of life. Data from the analyses showed that child weight status is negatively associated with both child self-concept and adult quality of life, and child self-concept mediates the relationship between child weight status and adult quality of life.

The second study was developed to assess the relationship between general teasing during childhood, child self-concept, and adult quality of life. The study also looked at two aspects of teasing, frequency and level of distress attributed to general teasing during childhood. Data showed that even though general childhood teasing experiences was not associated with adult quality of life, general teasing experiences during childhood was significantly associated with lower child self-concept scores. Frequency of general teasing experiences was also examined for a potential relationship with child self-concept and adult quality of life. The data showed that although the frequency of general childhood teasing experiences was not associated with adult quality of life, frequency of general teasing experiences was significantly associated with child self-concept within the group of participants who did experience general childhood teasing.

The relationship between level of distress associated with general childhood teasing, child self-concept, and adult quality of life was also examined. The data showed that level of distress was significantly associated with lower child self-concept and lower adult quality of life. When hierarchical regression was run to determine if child self-concept mediates the relationship between level of distress attributed to general teasing during childhood and adult quality of life, the model showed that child self-concept does mediate the relationship between level of distress attributed to general childhood teasing experiences and adult quality of life.

The purpose of the third study was to investigate the relationship between childhood weight-based teasing, child self-concept, and adult quality of life. Data showed that weight-based teasing during childhood was not significantly associated with child self-concept or adult quality of life. Data from the group of participants who did experience weight-based teasing was then analyzed to determine if there were any significant relationships between frequency and level of distress attributed to weight-based teasing and child self-concept and adult quality of life. The data from the within-group analysis showed that the relationship between the frequency of weight-based teasing and adult quality of life was significant; however, the relationship between the frequency of weight-based teasing and child self-concept was not significant.

Level of distress attributed to weight-based teasing was also examined within the group of participants who experienced weight-based teasing. Data showed that the level of distress attributed weight-based teasing was not significantly associated with child self-concept. The data also showed that the relationship between level of distress attributed to weight-based teasing was significantly associated with adult quality of life, whereas of the participants who experienced weight-based teasing, higher levels of distress regarding weight-based teasing experiences during childhood was significantly associated with a lower quality of life as an adult.

## CHAPTER 7

### DISCUSSION

Child, adolescent, and adult overweight status and obesity have increased significantly over the past 20 years. Several negative health-related, economic, and psychosocial outcomes attributed to overweight status and obesity has been identified in the research literature. However, research was lacking in the area regarding childhood weight status and later adult quality of life as well as potential mediating variables within the relationship. The first purpose of the project was to assess the relationship between child weight status and adult quality of life. The second purpose of the project was to assess potential variables that may mediate the relationship between child weight status and adult quality of life. Two variables, childhood teasing experiences and child self-concept were explored as potentially mediating variables. A discussion of the results of the project, including the project's limitations, implications and future research avenues will be addressed for each of the project's three studies.

#### Limitations

Results of the project should be viewed in light of the project's limitations. The first limitation of the study was sample size. Due primarily to the length of the project's questionnaires, 163 of approximately 450 interested individuals (36%) completed all of the requirements for participation in the study. Though the number of participants for the project was adequate, because the project was divided into three studies, the numbers of participants in each study were relatively small. Another limitation of the project is that the sample included only undergraduate and graduate students. Therefore, the results of the project have limited generalizability.

The third limitation of the study is that data collection began two weeks prior to Hurricane Katrina and continued through October. Although participants were asked to complete

the Quality of Life questionnaire without regard to the natural disaster, some participants' responses to the questionnaire may have been influenced by the hurricane. A final limitation of the study is that all of the measures were self-report. Accuracy of the data is dependent on the honesty of the project's participants.

### Discussion of Study 1

The purpose of the first study was to assess the relationship between child weight status and later adult quality of life. Analysis of Variance (ANOVA) was used to determine if there was a significant difference between the adult quality of life scores between adults who were overweight as children and adults who were not overweight as children. Results of the analysis showed that adults who were overweight as children had an average adult quality of life score of 2.17 and adults who were not overweight as children had an average adult quality of life score of 3.00. Based on the ANOVA, the scores were significantly different at the .05 level ( $p = .02$ ).

A regression was also run to assess the relationship between child weight status and adult quality of life. Results from the regression analysis showed that child overweight status was a significant predictor of adult quality of life ( $\beta = -.70$ ;  $p = .03$ ). A second regression was then run to assess the relationship between adult overweight status and adult quality of life. Results from the analysis showed that adult overweight status was also a significant predictor of adult quality of life ( $\beta = -.72$ ;  $p = .02$ ). Because child overweight status and adult overweight status were both significant predictors of lower adult quality of life, a hierarchical regression model was tested and the indirect effect was tested for significance to determine if adult weight status mediated the relationship between child weight status and adult quality of life. Results of the hierarchical regression and the test of significance of the indirect effect showed that adult overweight status does mediate the relationship between child weight status and adult weight status.

The findings support previous research that indicated two important relationships. First, overweight and obese children report a lower quality of life than healthy-weight children (Friedlander et al., 2003; Schwimmer et al., 2003; Swallen et al., 2005; Williams et al., 2005). Second, overweight and obese children are likely to remain overweight or obese during adulthood (Styne, 1999). Therefore, because overweight and obese children tend to report a lower quality of life than healthy weight children, and overweight and obese children are likely to remain overweight or obese during adulthood, the findings of the study's first analysis, indicating that child overweight status and obesity is associated with adult quality of life, was not surprising.

The second purpose of the study was to examine other potentially mediating variables within the relationship between child weight status and adult quality of life. Based on theory and a review of the literature, two psychosocial variables were chosen: child self-concept and childhood teasing experiences. Psychosocial variables were chosen to investigate why child overweight status is associated with lower adult quality of life. As indicated from study one, adult overweight status was identified as one mediating variable, however, it was important to investigate if "weight status" was a mediating variable or if, perhaps, it were the outcomes attributed to the "weight status" that influenced adult quality of life. Child self concept was addressed in study 1, and childhood teasing experiences were addressed in studies 2 and 3.

The relationship between child weight status, child self-concept, and adult quality of life was assessed in the second part of the first study. Results of the analyses showed that child overweight status was negatively associated with child self-concept scores ( $p = .03$ ) The findings support previous research that indicates overweight and obese children tend to report a lower self-concept than children who are of a healthy weight (Ball, 2005; Davison & Birch, 2001; Hesketh, 2004). A hierarchical regression model was tested and the indirect effect was tested for

significance within the relationship to determine if child self-concept mediated the relationship between child overweight status and adult quality of life. Because self-concept has been identified as a stable trait that is carried on throughout adulthood (Cooley, 1922; Piers, 1984), and that adults with a low self-concept tend to report a lower quality of life than adults with a higher self-concept (Fontaine & Bartlett, 1998; Moorthy, Harrison, Peterson, Onel, & Lehman, 2005; Smith et al., 2005; Taylor et al., 2003), it was posited that child self-concept mediated the relationship between child overweight status and adult quality of life. Results from the analyses showed that child self-concept was associated with adult quality of life ( $p = .00$ ), and child self-concept did mediate the relationship between child overweight status and lower adult quality of life. The findings supported the previous research on self-concept and quality of life, but also added another dimension: child self-concept, as reported retrospectively, not only is a stable trait throughout childhood and adulthood, but is a significant predictor of adult quality of life. The finding also emphasizes the importance of building high self-confidence in children, particularly overweight or obese children because they have been identified through the literature as having lower self-concepts than healthy weight children (Ball, 2005; Davison & Birch, 2001; Hesketh, 2004).

### Discussion of Study 2

Based on Cooley's Looking Glass Self, it was hypothesized that children who experienced teasing will report a lower self-concept than children who did not experience teasing. The purpose of studies 2 and 3 was to examine the role of childhood teasing experiences within the relationship between child weight status and adult quality of life. The second study focuses on general teasing experienced among adults who were not overweight during childhood and the third study focuses on weight-based teasing experienced by adults who were overweight as children.



Results of the correlation analysis showed that general teasing experiences was negatively associated with child self-concept ( $r = -.35$ ) and the relationship was significant ( $p = .00$ ). The findings supported Cooley's theory that a child's interaction with society (in the study the child's interaction was negative) plays a large role in the development of the child's self-concept. The findings also lend evidence to support ongoing efforts by clinicians, school teachers, parents, and others who work with and care for children to facilitate positive coping in children who experience teasing.

The second analysis for study 2 was focused on general teasing experiences and adult quality of life. Because it was shown in study 1 that child self-concept and adult quality of life were significantly associated with one another, and study 2 showed that general teasing experiences during childhood was also significantly associated with self-concept, it made sense to examine if there was a relationship between general childhood teasing experiences and adult quality of life. Results from the statistical analysis, however, indicated that general teasing during childhood was not significantly associated with adult quality of life scores.

Although the relationship between general teasing experiences during childhood and adult quality of life was not significant, it was important to examine information regarding child self-concept and adult quality of life among the participants who were teased. Two aspects of general teasing were assessed: frequency of teasing and level of distress experienced due to the teasing. Among the participants who experienced teasing during childhood, the frequency of teasing experiences was not associated with later adult quality of life. However, among the participants who were teased during their childhood, child self-concept was significantly associated with the frequency of childhood teasing experiences ( $r = -.48$ ;  $p = .00$ ). The findings suggest that as the participants experienced more teasing, their self-concept decreased. The finding was also supported by Cooley's theory in that the frequency of negative interactions (e.g.

teasing) experienced by the participant had a negative impact on the participant's self-concept as a child.

Level of distress attributed to teasing was also assessed among the participants who experienced general teasing during childhood. Results from the analysis showed that the level of distress a participant reported due to general teasing experiences during childhood was negatively associated with later adult quality of life ( $r = -.27$ ;  $p = .04$ ). Further analysis showed that level of distress was also negatively associated with child self-concept ( $r = -.51$ ;  $p = .00$ ). Because level of distress was associated with both child self-concept and later adult quality of life, it was important to investigate whether or not child self-concept mediated the relationship between level of distress and later adult quality of life. Results from the hierarchical regression and a calculation of the significance of the indirect effect showed that child self-concept was a mediating variable within the relationship between level of distress attributed to general teasing experiences during childhood and later adult quality of life. The finding was supported by Cooley's theory. According to Cooley, society acts as a mirror which reflects back to the individual its perception of him or her. How the individual interprets the reflection (e.g. teasing) would therefore impact the development of his or her self-concept. If the individual interpreted the teasing as playful and dismissed the teasing, it would make sense that the impact of the teasing on the individual's self-concept would be minimal. If, however, the individual experienced a high level of distress associated with the teasing experiences, it would also make sense that the individual's self-concept would be more negatively impacted.

### Discussion of Study Three

As cited in the literature, teasing about an individual's physical appearance, particularly weight-based teasing, is the most common form of teasing experienced during childhood (Georgeson et al., 1999; Roth, 2002). Because weight-based teasing has been identified as the

most common form of teasing during childhood, and many overweight and obese children and adolescents report being teased because of their weight (Eisenberg et al., 2003; Janssen et al., 2004; Neumark-Sztainer et al., 2002) it was important to examine the role of weight-based teasing within the relationship among child weight status, child self-concept, and adult quality of life.

Correlation analyses were run to determine if there were relationships among weight-based teasing, child self-concept, and adult quality of life among participants who were overweight during childhood. Results from the analyses showed that there were no significant relationships among the variables. Although no significant relationships were found among the variables, it was important to examine the variables within the group of participants who did experience weight-based teasing during childhood. Both frequency of weight-based teasing experiences and level of distress attributed to weight-based teasing experienced were assessed for their relationship with child self-concept and adult quality of life among participants who experienced weight-based teasing during childhood.

Results from further analyses showed that the frequency of weight-based teasing was negatively associated with adult quality of life ( $r = -.29$ ;  $p = .03$ ) among participants who experienced weight-based teasing. Although the frequency of weight-based teasing was significantly associated with adult quality of life, it was not significantly associated with child self-concept. Level of distress attributed to weight-based teasing was also investigated. Data showed that level of distress was significantly associated with adult quality of life ( $r = -.39$ ;  $p = .02$ ). Level of distress, however, was not significantly associated with child self-concept. The results of the analyses were surprising in that both frequency of weight-based teasing and level of distress were significantly associated with adult quality of life but were not significantly associated with child self-concept. Based on Cooley's theory of self-concept development, if

frequency of weight-based teasing and level of distress attributed to weight-based teasing during childhood is associated with adult quality of life, then the two variables should also be associated with self-concept as in study 2. Referring back to table 6.5, however, it was clear to see why weight-based teasing did not seem to impact self-concept. The self-concept scores for the participants in the overweight groups were similar. The scores indicate that the self-concepts of the overweight children were already low, and that adding the variable of weight-based teasing increased the child's odds of reporting a lower adult quality of life than adults who were neither overweight nor teased as a child.

### Future Research

Many negative outcomes attributed to overweight status and obesity has been identified within the research literature. The literature, however, is lacking in empirical research that investigates the potential longer-term impact that child weight status may have on individuals throughout adulthood. The purpose of the project was to investigate the relationship between child weight status and later adult quality of life as well as to identify potentially mediating variables within the relationship. Two potentially mediating variables were selected based on a review of the literature and theory: teasing experiences during childhood and child self-concept.

Results from the project's first study showed that child weight status was a predictor of adult quality of life, and that adult weight status is a mediating variable within the relationship, most likely because children who are overweight are more likely to stay overweight during adulthood. The first study also indicated that child self-concept was a mediating variable within the relationship between child weight status and adult quality of life. Future research may focus on the development of intervention strategies to facilitate the development of high self-concepts

among overweight and obese children in efforts to ameliorate the potential impact that the child's weight status may have on his or her adult quality of life.

As indicated previously, future research may be focused on the development of intervention strategies to improve the self-concept of overweight and obese children and adolescents. In order to develop effective intervention strategies, it is important to address the question: What experiences during childhood and adolescence affect the development of self-concept? Based on a review of the literature, teasing was chosen for further investigation for the project. Teasing was chosen because it has been both associated with low self-concept among children and adolescents (Davison & Birch, 2001; Hesketh, 2004; & Ball, 2005), and many overweight and obese children and adolescents report being teased because of their weight status (Eisenberg et al., 2003; Janssen et al., 2004; Neumark-Sztainer et al., 2002).

The second study in the project focused on the relationships between general teasing experiences, child self-concept, and adult quality of life. Results of the data analyses showed that although teasing was not associated with quality of life, it was significantly associated with child self-concept. Among participants who were teased during childhood, frequency of teasing was associated with self-concept, but not quality of life. Level of distress, however, was significantly associated with both child self-concept and adult quality of life. Further analysis showed that self-concept was a mediating variable between level of distress associated with being teased and adult quality of life. Implications from the finding suggests that interventions to increase self-concept should focus on building coping skills that individuals who are teased may use to decrease the level of distress he or she feels when the teasing occurs. Based on the research finding, if an individual is able to cope effectively with the teasing and lower the level of distress he or she feels about the teasing, his or her self-concept should either be minimally impacted or not be impacted at all.

The third study aimed to assess weight-based teasing and its relationship with child weight status, child self-concept, and adult quality of life. The study also aimed to determine if there were any differences between the impact of general teasing experiences and weight-based teasing experiences on child self-concept and adult quality of life. Although no significant relationships were found among weight-based teasing experiences, child self-concept, and adult quality of life, it was important to investigate the variables among participants who did experience weight-based teasing.

Two aspects of weight-based teasing: frequency and level of distress attributed to the teasing were assessed among participants who experienced weight based teasing. Results from a correlation analysis showed that frequency of weight-based teasing was negatively associated with adult quality of life; however, frequency of weight-based teasing was not associated with child self-concept. Level of distress attributed to weight-based teasing was also significantly associated with adult quality of life; however, it was not associated with child self-concept.

Future research into weight-based teasing is warranted. Because the findings of the third study suggest that frequency of weight-based teasing and level of distress attributed to weight-based teasing are associated with adult quality of life among individuals who experience weight-based teasing, and the literature indicates that many overweight and obese children and adolescents experience weight-based teasing, it is important that weight-based teasing be addressed whenever and wherever it occurs. The study again provides an argument that intervention strategies need to be developed and implemented in order to enhance coping among overweight and obese children and adolescents.

### Conclusion

The purpose of the project was to examine the relationship between child weight status and adult quality of life. The second purpose of the study was to assess variables that potentially

mediated the relationship between child weight status and adult quality of life. Based on theory and a review of the literature, two variables, self-concept and teasing, were assessed. In order to address the relationship between child weight status and adult quality of life as well as potentially mediating variables, the project was divided into three studies. The first study assessed the relationship between child weight status, child self-concept, and adult quality of life. The second study assessed the relationship between general teasing experiences, child self-concept, and adult quality of life, and the third study assessed the relationship between weight-based teasing, child self-concept, and adult quality of life.

Results from the projects showed that child weight status is a predictor of adult quality of life. Child self-concept was also associated with child weight status and adult quality of life. Further analysis indicated that child self-concept mediated the relationship between child weight status and adult quality of life. The finding suggests that interventions to enhance the self-concepts of overweight and obese children may have a positive impact on the children and adolescent's later quality of life as adults.

Studies two and three of the project were developed, in part, to assess the role of teasing on child self-concept and adult quality of life. Study two focused on general teasing experiences. While general teasing was not found to be associated with adult quality of life, it was found to be associated with child self-concept. Examining two aspects of teasing: frequency and level of distress, within the group of participants who did experience teasing showed that frequency of teasing experiences was associated with child self-concept, but not with adult quality of life. Level of distress attributed to general teasing was associated with both child self-concept and adult quality of life. Further analysis showed that child self-concept was a mediating variable within the relationship between level of distress and adult quality of life. The finding also

suggests that interventions designed to help children and adolescents cope effectively with teasing may have a positive impact on their future quality of life as adults.

The third study aimed to assess the role of weight-based teasing in its potential relationship with child self-concept and adult quality of life. Although weight-based teasing was not associated with child self-concept or adult quality of life, weight-based teasing was further examined within the group of participants who did experience weight-based teasing. Two variables, frequency of teasing and level of distress attributed to the teasing were assessed within the group. Results showed that frequency of weight-based teasing was associated with adult quality of life; however, it was not associated with child self-concept. Level of distress was also associated with adult quality of life, but it was not associated with child self-concept.

In comparing general teasing and weight-based teasing experiences, both types of teasing impact some aspect of the individual's life. General teasing was associated with child self-concept, and weight-based teasing was associated with adult quality of life, among participants who experienced teasing during childhood. Results of the studies indicate that child weight status is associated with adult quality of life, and that child self-concept and teasing experiences during childhood are mediating variables within the relationship. Recognizing the influence that teasing and child self-concept have on an overweight or obese child or adolescent's future quality of life stresses the importance of addressing these psychosocial variables when working with children and adolescents who struggle with weight management.



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APPENDIX A  
PARTICIPANT PROFILE I

## Participant Profile I

- 1) Your name: \_\_\_\_\_
- 2) Your email address: \_\_\_\_\_
- 3) What is your birthdate? \_\_\_\_\_
- 4) What is your gender? \_\_\_\_\_
- 5) Were you overweight at any time during your childhood?  
(between ages 5 and 16 years) \_\_\_\_\_

APPENDIX B  
PARTICIPANT PROFILE II

## Participant Profile II

Please circle the response that best describes you.

My ethnicity is:

- 1) African American
- 2) White
- 3) Hispanic
- 4) Asian
- 5) Other

My marital status is:

- 1) Married
- 2) Single- Never been married
- 3) Single- Divorced
- 4) Single- Widow/Widower

My current physical health status is:

- 1) I am in very good health
- 2) I am in good health
- 3) I am in fair health
- 4) I am in poor health

I consider my socioeconomic background to be:

- 1) Upper Class
- 2) Upper-Middle Class
- 3) Middle Class
- 4) Middle-Lower Class
- 5) Lower Class

I consider myself now to be:

- 1) Underweight
- 2) Healthy weight
- 3) Somewhat overweight
- 4) Very overweight
- 5) Obese

As a child:

- 1) I had no friends
- 2) I had a few friends
- 3) I had a group of friends
- 4) I had a lot of friends

As a teenager:

- 1) I had no friends
- 2) I had a few friends
- 3) I had a group of friends
- 4) I had a lot of friends

As an adult:

- 1) I have no friends
- 2) I have a few friends
- 3) I have a group of friends
- 4) I have a lot of friends

I first realized that I was overweight during:

- 1) preschool
- 2) kindergarten
- 3) elementary school
- 4) middle school or junior high school
- 5) high school

As a child:

- 1) I never attempted to lose weight
- 2) I attempted weight loss (exercised, reduced calorie intake) one or two times
- 3) I attempted weight loss three or four times
- 4) I attempted weight loss more than five times

As a child:

- 1) I never achieved weight loss
- 2) I achieved weight loss, but regained weight
- 3) I achieved weight loss and have maintained a healthy weight

As a teenager:

- 1) I never attempted to lose weight
- 2) I attempted weight loss (exercised, reduced calorie intake) one or two times
- 3) I attempted weight loss three or four times
- 4) I attempted weight loss more than five times

As a teenager:

- 1) I never achieved weight loss
- 2) I achieved weight loss, but regained weight
- 3) I achieved weight loss and have maintained a healthy weight

As an adult:

- 1) I never attempted to lose weight
- 2) I attempted weight loss (exercised, reduced calorie intake) one or two times
- 3) I attempted weight loss three or four times
- 4) I attempted weight loss more than five times

As an adult:

- 1) I never achieved weight loss
- 2) I achieved weight loss, but regained weight
- 3) I achieved weight loss and have maintained a healthy weight

I would be willing to share additional information with the researcher during an interview

- 1) Yes
- 2) No

APPENDIX C  
ADULT QUALITY OF LIFE PROFILE



## Sample Items from the Quality of Life Profile

Adapted from: Ivan Brown, Dennis Raphael & Rebecca Renwick  
Centre of Health Promotion, University of Toronto

**Part One:** For each question rate how important the following are to you (using the scale provided, “not at all important (1) to “extremely important (5).

Not at all important	Not very important	Somewhat important	Very important	Extremely important
1	2	3	4	5

How important to me is: ?

1. My appearance- how I look	1	2	3	4	5
2. My exercising and being fit	1	2	3	4	5
3. My hygiene- caring for myself	1	2	3	4	5
4. My nutrition and the food I eat	1	2	3	4	5
5. My physical health	1	2	3	4	5

**Part Two:** For each question rate how satisfied you are with the following (using the scale provided, “Not at all satisfied (1) to “extremely satisfied (5).

Not at all satisfied	Not very satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied
1	2	3	4	5

How satisfied am I with: ?

1. My appearance- how I look	1	2	3	4	5
2. My exercising and being fit	1	2	3	4	5
3. My hygiene- caring for myself	1	2	3	4	5
4. My nutrition and the food I eat	1	2	3	4	5
5. My physical health	1	2	3	4	5

APPENDIX D  
CHILD SELF-CONCEPT SCALE

## **Sample Items from the Piers-Harris Child Self-Concept Scale**

Here is a set of statements that tell how some people felt about themselves when they were a child. Please read each statement and then decide whether or not it described the way you felt about yourself when you were a child. If the statement was true or mostly true for you, select "Yes." If the statement was false or mostly false for you, select "No."

1. My classmates made fun of me
2. I was a happy person
3. It was hard for me to make friends
4. I was often sad
5. I was smart

APPENDIX E

PERCEPTION OF CHILDHOOD TEASING SCALE

## Perception of Childhood Teasing Scale- Version One

We are interested in whether you were teased during your childhood and how this affected you. For each situation you will be asked to indicate the following:

- A) How often you think you were teased (on a scale from 1 to 4, with “1” indicating you were never teased and “4” indicating you were teased very often)
- B) Who did the teasing (choices include your mother, father, siblings, other relatives such as aunts uncles, and cousins, peers, and other adults such as coaches and teachers).
- C) Where the teasing took place (choices include in your home, in social situations, in your classroom at school, at your playground at school, or other place)
- D) How upset you were by the teasing (on a scale from 1 to 4, with “1” indicating you were not upset and “4” indicating that you were very upset).

### 1. *People made fun of you because you were heavy*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

2. *People made jokes about you being heavy*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

3. *People laughed at you for trying out for sports because you were heavy*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

4. *People called you names like “fatso”*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often



B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

*5. People pointed at you because you were overweight*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

6. *People snickered about your heaviness when you walked into a room alone.*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

## Perception of Childhood Teasing Scale- Version Two

We are interested in whether you were teased during your childhood and how this affected you. For each situation you will be asked to indicate the following:

- A) How often you think you were teased (on a scale from 1 to 4, with “1” indicating you were never teased and “4” indicating you were teased very often)
- B) Who did the teasing (choices include your mother, father, siblings, other relatives such as aunts uncles, and cousins, peers, and other adults such as coaches and teachers).
- C) Where the teasing took place (choices include in your home, in social situations, in your classroom at school, at your playground at school, or other place)
- D) How upset you were by the teasing (on a scale from 1 to 4, with “1” indicating you were not upset and “4” indicating that you were very upset).

### 1. *People made fun of you*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

2. *People made jokes about you*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

*3. People laughed at you for trying out for sports*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

*4. People called you names*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings

- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

### *5. People pointed at you*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

6. *People snickered about you when you walked into a room alone.*

A) How often were you teased?

- (1) Never
- (2) Sometimes
- (3) Often
- (4) Very Often

B) Who did the teasing?

- (1) Your mother
- (2) Your father
- (3) Your siblings
- (4) Peers
- (5) Other relatives (aunts, uncles, cousins)
- (6) Other adults (coaches, teachers)

C) Where did the teasing take place?

- (1) In your home
- (2) In social situations
- (3) In your classroom at school
- (4) On your playground at school
- (5) Other \_\_\_\_\_

D) How upset were you by the teasing?

- (1) Not upset
- (2) Somewhat upset
- (3) Upset
- (4) Very upset

APPENDIX F  
CONSENT FORM



The purpose of the study is to explore the potential effects of childhood teasing and quality of life in adulthood. Students in the study must meet the following criteria for participation: a) must be adults over the age of 18 years; b) must read and complete the written consent form; and c) must be able complete the study's web-based questionnaires. The maximum number of participants for the study is 200.

The procedure for the study is as follows: a) if you are interested in participating in the study you must read and sign this consent form and b) complete the study's four online questionnaires. To ensure confidentiality of your responses, each individual participant will be given a unique password by the researcher that will be necessary for you to provide upon accessing the study's website and completing the questionnaires. Only the researcher and you will your password. A master list of participant names and their corresponding passwords will be kept in a locked office for use as a reference, if needed, by the researcher.

The risks involved in the study are minimal. While completing the questionnaires, you may feel upset or sad if you remember being teased during your childhood. An important benefit of the study, however, is in understanding how teasing during childhood may affect individuals during adulthood. By understanding the relationship between being teased as a child and its effect on adult quality of life, the potential seriousness of teasing may be better recognized and help for children who endure teasing may be more readily provided.

Participation in the study is completely voluntary. You may withdraw from the study at any time by informing the researcher of your decision. The researcher may also choose to withdraw you from the study if you fail to meet the research requirements. All collected data will be kept confidential by the researcher unless release is legally compelled. Any additional questions may be addressed to the researcher by telephone or email between 8am and 5pm, Monday through Friday. The researcher may be reached at 578-2281 or [hkihm@lsu.edu](mailto:hkihm@lsu.edu).

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225)578-8692. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.

APPENDIX G  
INSTITUTIONAL REVIEW BOARD APPROVAL



**Institutional Review Board**  
**203 B-1 David Boyd Hall**  
**Louisiana State University and A&M College**  
**Baton Rouge LA 70803**

(225) 578-8692

FAX: 578-6792  
 irb@lsu.edu

**INSTITUTIONAL REVIEW BOARD**

**ACTION ON PROTOCOL APPROVAL REQUEST**

**TO:** Pam Monroe, Graduate Studies  
 Holly S. Kihm, Human Ecology

**FROM:** Robert C. Mathews  
 Chair, Institutional Review Board for Research with Human Subjects

**DATE:** July 29, 2005

**RE:** **IRB#** 2537

**TITLE:** "Who Said "Words Can Never Hurt?" An Investigation into Childhood Overweight Status, teasing, and Adult Quality of Life"

**New Protocol/Modification/Continuation :** N

**Review type:** Full  Expedited  **Review date:** 07/28/2005

**Risk Factor:** Minimal  Uncertain  Greater Than Minimal

**Approved**  \* **Disapproved**

**Approval Date:** 07/29/2005 **Approval Expiration Date:** 07/29/2006

**Re-review frequency:** (annual unless otherwise stated)

**Number of subjects approved:** 200

**By:** Robert C. Mathews, Chairman *Robert C. Mathews*

\*Approval is conditional on the following changes:

1. Investigators' names must be included in the consent form (5<sup>th</sup> paragraph) along with their contact information.

**PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING -- Continuing approval is CONDITIONAL on:**

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects\*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
8. Notification of the IRB of a serious compliance failure.

**SPECIAL NOTE:**

*\*All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.fas.lsu.edu/osp/irb>*

## VITA

A native of Ohio, Holly Spencer Kihm graduated from Worthington Kilbourne High School in 1995. She graduated with a Bachelor of Science degree from The Ohio State University in 1999. Ms. Kihm continued her education and earned a Master of Arts degree from the University of Akron in 2002. During this time she also moved to Baltimore, Maryland, where she completed her Child Life internship at Johns Hopkins Children's Center.

Ms. Kihm moved to New Orleans, Louisiana, and began her doctoral studies in 2003. She will graduate with a Doctor of Philosophy degree in the spring of 2006.

Ms. Kihm is the daughter of Robert and Elizabeth Spencer and has been married to Andy Kihm for three years. Ms. Kihm and her husband have two pugs, Lloyd and Fritz, and are expecting their first child in the summer of 2006.