

SELF-PERCEPTIONS AND BODY IMAGE  
IN PREADOLESCENT  
GIRLS AND BOYS

By

ANDREA DAWN KINLEN

Bachelor of Science in Psychology  
Mississippi State University  
Starkville, Mississippi  
1998

Master of Science in Psychology  
Mississippi State University  
Starkville, Mississippi  
2000

Master of Science in Psychology  
Oklahoma State University  
Stillwater, Oklahoma  
2004

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Dissertation Approved:

Melanie C. Page, Ph.D.

---

Dissertation Adviser

Maureen Sullivan, Ph.D.

---

Committee Member

John M. Chaney, Ph.D.

---

Committee Member

Ronald S. Harrist, Ph.D.

---

Committee Member

A. Gordon Emslie

---

Dean of the Graduate College

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## CHAPTER I

### INTRODUCTION

Body image is a multidimensional concept that is comprised of perceptual, attitudinal, and affective components (Gardner, Stark, Friedman, & Jackson, 2002; Striegel-Moore & Franko, 2002; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Body image generally refers to how one perceives his/her body and the resultant feelings about that perception. Body image can affect emotions, thoughts, relationships, and behaviors in everyday life (Pruzinsky & Cash, 2002). Research on body image has focused on women and girls because problems related to body image appear to be most pronounced in this population (APA, 2000). The phrase “normative discontent” was first used almost two decades ago to describe the pervasive negative feelings that girls and women experience toward their bodies (Rodin, Silberstein, & Striegel-Moore, 1985). Since then, there have been a large number of studies focusing on body image and its effects on quality of life for women and girls. However, recent research has indicated that the number of men and boys who have body dissatisfaction and who present for treatment of eating disturbances is increasing (Carlat & Camargo, 1991; Furnham, Badmin, & Sneade, 2002; Ricciardelli & McCabe, 2004).

For most people, maintaining a very low weight is biologically impossible without taking extreme measures. These measures include purging and restrictive eating. People (especially girls and women) who have body image problems are more likely to

engage in such behaviors (Striegel-Moore & Franko, 2002). In turn, these extreme efforts may increase the risk of developing more severe difficulties such as eating disorders. Thus, researchers have concluded that body dissatisfaction is a significant risk factor for eating disturbances (Streigel-Moore & Franko, 2002).

Adolescence is the most frequently cited period for the onset of severe eating disorders (APA, 2000; Stein & Reichert, 1990). Prevalence rates of eating disorders among female adolescents and young adult women have been found to be between 0.5% and 1% for Anorexia Nervosa and between 1% and 3% for Bulimia Nervosa (APA, 2000). The National Institute of Mental Health (2001) reports slightly higher numbers, with the lifetime prevalence of Anorexia Nervosa in women as .5% to 3.7%, and 1.1% to 4.2% for Bulimia Nervosa. In a review of the prevalence and incidence of eating disorders in the literature, Hoek and van Hoeken (2003) found prevalence rates for young women of .3% for Anorexia Nervosa and 1% for Bulimia Nervosa. For men, the prevalence rate for Bulimia Nervosa was .1%, and the rate for Anorexia Nervosa was believed to be much lower than that for Bulimia Nervosa (Hoek & van Hoeken, 2003).

Ricciardelli and McCabe (2004) argue that it is more difficult to diagnose eating disorders in men, as men are less likely to use extreme weight loss methods. In addition, many of the binge-eating patterns seen as abnormal or inappropriate for women are socially accepted for men (Carlat & Carmago, 1991; Carlat, Camargo, & Herzog, 1997; Ricciardelli & McCabe, 2004). The gender influences on prevalence rates are less apparent if partial syndrome eating disorders are taken into account (Woodside et al., 2001), and estimates that include partial syndrome eating disorders may be a more accurate indicator of the problem for men (Ricciardelli & McCabe, 2004). Woodside and

colleagues (2001) noted that if partial syndrome eating disorders are included in addition to full syndrome eating disorders for men, the prevalence rate for Bulimia Nervosa is 1.08% (compared with 3.16% in women) and the prevalence rate for Anorexia Nervosa is .92% (compared with 1.81% in women). Despite the method used for calculating prevalence rates of eating disorders, underestimation of prevalence rates may be a problem because eating disorders are possibly over represented among persons who choose not to cooperate with prevalence studies (Fairburn & Beglin, 1990).

It may not be possible to know the exact prevalence of eating disorders in children because the criteria for children are often hard to assess and diagnose (APA, 2000; Lask & Bryant-Waugh, 1992). It is estimated that approximately 0.5% of prepubertal children and adolescents are affected by Anorexia Nervosa. Although the prevalence rates are slightly lower for children, some researchers have suggested that preadolescent children are just as likely to be concerned about their body image as adolescents (Brodie, Bagley, & Slade, 1994), which places them at risk for eating disturbances (Striegel-Moore & Franko, 2002). In addition, many researchers believe that factors during childhood are directly related to the experience of body dissatisfaction and eating disorders in adolescence. Because the prevalence of eating disorders and symptoms in younger populations is drawing more and more attention, researchers have begun to examine the etiology, symptoms, and predictors of problem eating in preadolescents (Rolland, Farnill, & Griffiths, 1996).

Although diagnosing eating disorders in children is difficult, it is clear from the literature that many are preoccupied with their weights and exhibit distorted perceptions of their body sizes (i.e., a distorted body image; Cohn et al., 1987; Fallon & Rozin, 1985;

Thompson, Corwin, & Sargent, 1997). There are numerous risk factors for distorted body image and eating disorders. For example, body dissatisfaction resulting from the onset of puberty and other maturational factors has been suggested as a precursor to eating disorders (Leon, Keel, Klump, & Fulkerson, 1997). High stress reactivity and negative emotionality have been considered significant psychological factors (Leon, Klerman, & Wickramarante, 1993). Sociocultural factors that are considered significant contributors to body image concerns are the cultural ideal of thinness and the portrayal of the thin ideal body size in the media (Smolak & Levine, 2001; Striegel-Moore & Franko, 2002). In addition, some researchers have proposed that sexual abuse is a potential factor for increased risk of eating disorders and body image disturbance in children (Vize & Cooper, 1995; Waller, Halek, & Crisp, 1993). Furthermore, early childhood eating patterns (Marchi & Cohen, 1990), early dieting behavior (Hill, 1993; Lask & Bryant-Waugh, 1992), and family attitudes and behaviors (Felker & Stivers, 1994; Pike & Rodin, 1991) have been linked to body image problems and problem eating behaviors. Other factors believed to influence eating pathology are socioeconomic status (Rogers, Resnick, Mitchell, & Blum, 1997), temperament (Shaw & Steiner, 1997), and attachment style (Sharpe et al., 1998).

Self-esteem, which is the evaluative and affective sense of one's self (Wang & Ollendick, 2001), has also been identified as one factor that could influence body image. Self-esteem issues may be quite prevalent during preadolescence, which is the precursor to a time of great change (i.e., puberty and adolescence; Hill, 1993; Maloney, McGuire, Daniels, & Specker, 1989). The development of self-esteem is a multidimensional concept (Cole et al., 2001) and the result of a combination of factors. One dimension of

self-esteem that is often studied is physical appearance (Cole et al., 2001). Researchers have found that physical appearance is a powerful determinant of self-perceptions (Feingold, 1992; Page, 1992), and feelings of personal attractiveness are related to feelings of self-esteem (Zakin, Blyth, & Simmons, 1994). Studies in this area suggest that problems with low self-esteem may be expressed through excessive weight control and eating disorders (Button, Loan, Davies, & Sonuga-Bark, 1997; Button, Sonuga-Bark, Davies, & Thompson; 1996; Grant & Fodor, 1986).

Based on the literature, there appears to be a link between body satisfaction and global self-concept. Self-esteem is seen as a general, rather than a specific risk factor for body image disturbance and disordered eating patterns because it is also related to other psychological difficulties (Button, 1990; Hill & Pallin, 1998; Stice, Hayward, Cameron, Killen, & Taylor, 2000; Wichstrom, 1999). It is often the general factors (e.g., low self-esteem, poor family relations, and negative emotionality) that are cited as distinguishing between people who have serious weight concerns and eating problems and those who are displaying weight concerns that are common for many people in modern society (Leung, Schwartzman, & Steiger, 1996; Shisslak & Crago, 2001; Shisslak, Crago, & Estes, 1995), often termed “normative discontent” when speaking of women and girls (Rolland, et al., 1996).

Due to the number of different factors that have been linked with body image and maladaptive eating patterns, the exact determinants of eating disorders and body image concerns continues to be unclear despite the plethora of literature. The quest to find a single cause has been abandoned by most researchers, and eating disorders and body image are now being viewed largely as determined by a variety of factors including

physical, psychological, family, and sociocultural influences (Lask & Bryant-Waugh, 1992). Because body image can affect quality of life in many maladaptive ways, it is important to continue to examine the relationship that body image concerns have on development. The purpose of the current study is to further the research on the relationship between children's self-perceptions and body image by examining gender and schooling differences and by including a new measure of body image dissatisfaction and problem eating behaviors.

## CHAPTER II

### REVIEW OF LITERATURE

#### *Body Image Concerns*

In the following literature review, body image concerns will be discussed for adolescents and children. In addition, gender differences with regard to body image concerns will be reviewed. Further, the relationship between children's self-perceptions and body image concerns will be discussed. Finally, information will be presented regarding home-schooled children. First, the development of body image concerns in adolescents will be discussed, followed by a review of body image concerns in children.

#### *Body Image Concerns in Adolescence*

The emergence of body image concerns appears to be most pronounced during adolescence (Taylor et al., 1998). In a review chapter of body image issues in girls and women, Striegel-Moore and Franko (2002) report that population surveys indicate that four out of five adolescents diet at least one time during the teenage years. In addition, approximately two-thirds of adolescents are on a diet at any given time, although most are not overweight (Streigel-Moore & Franko, 2002). In further support of adolescents' having many body image concerns, Teinboon, Ritshouser, and Walhqvist (1994) found that more than half of the adolescents in their sample had at some time tried to change their weight, with the most common approach being to eat less and exercise more. Many adolescents also perceived some benefit from losing weight, with 70% of girls and 34%

of boys saying they would look or feel better if they lost weight. Forty-two percent of normal weight girls in this sample also saw themselves as overweight and 73% of girls had at some time tried to lose weight, although over 80% of them were in normal range for body mass index (BMI; weight in kilograms divided by height in meters squared). In addition, Button et al. (1996) found that almost half of their sample of 15-16 year olds had dieted to lose weight, almost 40% had exercised to lose weight, 9% had vomited to lose weight, and 3.5% and 2.3% had used laxatives and diuretics, respectively. Not surprisingly, 12% of the participants in the Button et al. (1996) study scored in the possible eating disorder range on a measure assessing eating attitudes.

The literature suggests that a significant proportion of adolescents may not be satisfied with their weight and want to change it (Button et al., 1996; Teinboon et al., 1994). In order to help these adolescents, it is necessary to examine the factors that may contribute to body image dissatisfaction. There appear to be several factors that interact with one another for the development of body image including pubertal weight gain and body changes (Attie & Brooks-Gunn, 1989; Gralen, Levine, Smolak, & Murnen, 1990; Keel, Fulkerson, & Leon, 1997; Killen et al., 1994; Koff & Rierdan, 1993) and high BMI (Keel et al., 1997; Teinboon et al., 1994), greater academic demands, and increased social challenges (Striegel-Moore & Franko, 2002). In addition, adolescents' perceptions and evaluations of body weight are affected by their perceptions of parental attitudes (Benedict, Werthiem, & Love, 1998; Stice, 1994; Thelen, Powell, Lawrence, & Kuhnert, 1992) and peer attitudes about obesity (Lunde, Frisen, & Hwang, 2006; Lunner, et al., 2000; Wertheim, Paxton, Schutz, & Muir, 1997; Taylor et al., 1998; Thompson, Coover, Richards, Johnson, & Cattarin, 1995), as well as by socioeconomic (Rogers et al., 1997;

Streigel-Moore & Franko, 2002) and cultural influences (Feldman, Feldman, & Goodman, 1998; Martin & Gentry, 1997; Taylor et al., 1998). Other predictors for body image concerns and eating disturbances in adolescence include low self-esteem (Button et al., 1997; Button et al., 1996; Geller, Srikameswaran, Cockell, & Zaitsoff, 2000; Geller, Zaitsoff, & Srikameswaran, 2002; Israel & Ivanova, 2002; Keel et al., 1997, Kim & Kim, 2001; Polce-Lynch; Myers, Kliewer, & Kilmartin, 2001; Ricciardelli & McCabe, 2001) and depression (Allgood-Merten, Lewinsohn, & Hops, 1990; Attie & Brooks-Gunn, 1989; Killen et al., 1994, Leon et al., 1993).

### *Body Image Concerns in Children*

Although eating disorders and body concerns seem to be a significant problem in adolescence, Brodie and colleagues (1994) suggested that preadolescents are just as likely to be concerned about their body image. Hill and Pallin (1998) assert that it would be a mistake to regard adolescence as the age that signals the start of concerns about physical appearance and dieting. They cite two types of evidence to suggest the existence of such concerns well before adolescence. First, people with a history of body image concerns and eating disorders often cite weight control behavior and dieting attempts from a very early age (Bryant-Waugh & Lask, 1995; Hill & Pallin, 1998). Second, studies conducted with school-aged children have found that both girls and boys as young as nine show a marked preference for thinness, with accompanying reports of dieting for some (Hill, 1993; Hill & Bhatti, 1995; Hill, Draper, & Stack, 1994; Hill & Pallin, 1998; Hill & Robinson, 1991; Shreiber et al., 1996). Therefore, adolescent weight control may be a function of patterns learned earlier in life and may represent a familiar and well-practiced approach to life (Hill & Pallin, 1998). Because the prevalence of eating disorders and

symptoms in younger populations is drawing more and more attention, researchers have begun to examine the etiology, symptoms, and predictors of problem eating in preadolescents.

At least some components of disturbed eating may be internalized at fairly young ages (Shapiro, Newcomb, & Loeb, 1997; Smolak & Levine, 2001). It is not uncommon to find that at least half of girls are unhappy about weight and shape, which is a comparable finding to the levels of body dissatisfaction observed among adolescent and adult women (Smolak, 2002; Smolak & Levine, 2001). In addition, the age at which body image concerns begin to emerge appears to be decreasing (Smolak & Levine, 2001; Striegel-Moore & Franko, 2002). Recent evidence suggests that many children as young as 7 and 8 years old are already unhappy with body size (Collin, 1991; Edlund, Halvarsson, & Sjoden, 1996; Rolland, Farnhill, & Griffiths, 1997; Thelen, Powell et al., 1992), with typical findings showing nearly half of girls ages 8-13 wanting to be thinner (Gardner et al., 2002; Rolland et al., 1996), and one-third or less of boys wanting to be thinner (Rolland et al., 1997). In addition, children as young as age 4 to 6 years have expressed body dissatisfaction and weight concerns (Davison, Markey, & Birch, 2000, 2003; Flannery-Schroeder & Christler, 1997; Wardle, Volz, & Golding, 1995). Furthermore, Striegel-Moore & Franko (2002) argue that the stigmatization of overweight children is already present in three-year-olds, revealing that negative attitudes toward the overweight emerge very early. Possible explanations for the trend of children's growing preoccupation with body image include the decreasing age of menarche and onset of puberty, higher prevalence rates of obesity, and media marketing to children 8 to 11 years old (Striegel-Moore & Franko, 2002).

Many studies have shown that children have some degree of body dissatisfaction and may engage in behaviors to compensate for feelings of low body esteem. For instance, in a sample of 9- to 11-year old children, 33% of girls and 17 % of boys reported that they were “very often” worried about being fat (Gustafson-Larson & Terry, 1992). Wood, Becker, and Thompson (1996) found that 55% of girls and 35% of boys in their sample of 8- to 10-year old children were dissatisfied with their body size. Additionally, in a study of Australian schoolchildren, 50% of girls and 33% of boys wanted to be thinner, and 40% and 24%, respectively, had tried to lose weight (Rolland et al., 1997). Furthermore, Field and colleagues (1999) found in a survey of over 16,000 9- to 14-year old girls and boys that 20% of 9-year old girls were trying to lose weight, while 44% of the 14-year old girls were trying to lose weight. Among the boys, 17% of the 9-year olds and 19% of the 14-year olds were trying to lose weight.

Although body image concerns may start early in childhood, body dissatisfaction appears to increase with age, at least among girls. For example, Thelen, Lawrence, and Powell (1992) found that 4<sup>th</sup> and 6<sup>th</sup> grade girls were more concerned about being overweight and expressed a greater desire to be thinner than did second grade girls. In addition, Gardner, Sorter, and Friedman (1997) found that 6-year-olds in their sample reported less body dissatisfaction than 9- and 12-year-old girls. In this same sample, the 9-year-old girls reported less body dissatisfaction than the 12-year-old girls. Further, Striegel-Moore, Schreiber, and Lo (2000) found that African American and Caucasian girls experienced increased body dissatisfaction between the ages of 11 and 16. These studies point to a possible developmental trend for the evolution of body dissatisfaction.

Mendelson, White, and Mendelson (1996) found that as youngsters' weights increased, they were more likely to have poorer opinions about their appearances and weights. However, measures of body image attitudes (i.e., the global rating of how much a child likes his or her body; Smolak & Levine, 2001) show few changes until late elementary school (Smolak, 2002; Levine & Smolak, 2002), which makes it unclear whether body image concerns are more prevalent in school-aged children or if measures of body image are not sensitive enough to detect changes before that time. Thus, it is clear from the literature that some children want to be thinner and are dissatisfied with their bodies, but it is not known how or at what point children begin to have such concerns (Brodie et al., 1994).

#### *Gender Differences in Body Image*

Women are much more likely than men to experience body image concerns regardless of age (Streigel-Moore & Franko, 2002). In addition, women are more likely than men to describe themselves as fat, to weigh themselves often, and to diet frequently. Furthermore, women are usually more dissatisfied with their physical appearance than are men (Cooper & Fairburn, 1983; Furnham & Calnan, 1998). Conversely, men generally tend to have a more positive body image than women (Celio, Zabinski, & Wilfley, 2002). However, men are not immune to body dissatisfaction, although it is often expressed differently from women (Celio et al., 2002). Specifically, while women are often concerned with being unrealistically thin, men tend to strive for unrealistic muscular images. The gender differences in preferences for body type may be a function of the different male and female body ideals (Furnham et al., 2002). Typically in Western culture, the male ideal is a V-shaped figure with an emphasis placed on large biceps,

chest, and shoulders, whereas the female ideal is to be extremely thin, with the emphasis placed on slim hips, bottom, and thighs.

In extreme cases for men, a perceived discrepancy between a man's actual body shape and ideal could lead to maladaptive behaviors such as anabolic steroid use (Celio et al., 2002). However, women are more likely to use compensatory strategies to attain a more favorable body image than are men (APA, 2000). Development of an eating disorder may occur for both women and men who are dissatisfied with their bodies, however, prevalence rates for eating disorders in men are estimated at one-tenth that of women (APA, 2000).

In addition to differences in the prevalence of eating disorders, there are several differences between the sexes concerning the development of body image concerns. Some studies have found that boys and girls typically show comparable levels of overall body esteem through much of childhood (Hill et al., 1994; Hill & Pallin, 1998; Smolak & Levine, 1994), whereas others have shown a discrepancy. For example, Rolland and colleagues (1996) found that about half of girls aged 8 to 12 years and about a third of boys would like to be thinner. In addition, Thelen and Cormier (1995) found that girls indicated a significantly greater desire for a thinner figure than did boys, although there were no significant differences in their BMIs. However, dieting percentages were not significantly different, as 28% of girls and 21% of boys reported dieting at least once. Finally, Teinboon and colleagues (1994) found that of children in the normal range for BMI, girls wanted to be 6 to 7 kilograms lighter on average, while boys only wanted to be approximately 2 kilograms lighter. Overall, there appear to be gender differences in satisfaction and concerns with weight and shape, with girls showing more dissatisfaction

than boys (Field et al., 1999; Gustafsen-Larson & Terry, 1992; Lawrence & Thelen, 1995; Parkinson, Tovee, & Cohen-Tovee, 1998; Smolak & Levine, 2001; Thompson, et al., 1997; Tiggeman & Wilson-Barrett, 1998; Wardle, et al., 1995; Wood et al., 1996).

Following puberty, boys may experience a leveling or increase in body esteem, whereas girls are more likely to experience a decrease (Abramowitz, Peterson, & Schulenberg, 1984; Gardner et al., 1997; Gardner, Friedman, Stark, & Jackson, 1999; Richards, Casper, & Larson, 1990). Thus, boys may view physical growth more positively. Some of the body dissatisfaction in boys may reflect feelings of being too small, which is supported by several studies (Cohane & Pope, 2001; Thelen, Powell, et al. 1992; Schur, Sanders, & Steiner, 2000; Parkinson, et al., 1998), though many studies do not differentiate the direction of body dissatisfaction (see review chapters by Smolak, 2002 and Smolak & Levine, 2001).

In addition, less research is available concerning the development of body esteem in boys than in girls (Smolak & Levine, 2001). Girls appear to receive stronger and more consistent messages than boys, especially from peers and the media, about the importance of meeting the cultural ideal of thinness (Smolak, 2002). The effects may be particularly pronounced among girls who are more susceptible to comparisons between their own appearance and that of others (Smolak, 2002; Smolak & Levine, 2001). Although much of the literature points to gender differences in body image concerns, with women generally more dissatisfied with their bodies than men, data in this area are limited, particularly regarding body image development in men. Thus, more research is needed to draw firm conclusions about general gender differences (Smolak & Levine, 2001).

### *Overall Summary of Body Image Concerns*

The literature has shown that body image concerns are experienced to some degree by both genders and at different age levels. Typically, women and girls experience greater body dissatisfaction than men and boys. Furthermore, body image concerns and eating disorders appear to be more pronounced in young adult and adolescent populations, with adolescence seen as the time when these concerns are greatest. However, researchers are discovering that these concerns can be present in children.

### *Body Image and Self-Perceptions*

#### *Social Acceptance*

Personal appraisals of one's social acceptance can be related to body image concerns. Attitudes about social acceptance often rely on the feedback and behavior of others. Family members, friends, other peers, and even strangers convey expectations, opinions, and verbal and nonverbal communications (Cash, 2002). Parental role modeling, comments, and criticism express the degree to which physical appearance is valued within the family and can establish a standard by which comparisons for the self and others are made (Byely, Archibald, Graber, & Brooks-Gunn, 2000; Cash, 2002; Hall & Brown, 1982; Hill & Franklin, 1998; Hill, Weaver, & Blundell, 1990; Kearney-Cooke, 2002; Steiger, Stotland, Ghadirian, & Whitehead, 1995). Parents can influence body image development by selecting and commenting on children's clothing and appearance or requiring the child to look a certain way or eat/avoid certain foods. Some parents actively encourage children to slim down. This is true for both genders, both parents, and all racial groups, although African American mothers may be less concerned about body shape (Flynn & Fitzgibbon, 1996).

In further support of parental influence on body image, Smolak, Levine, and Schermer (1999) found that for daughters, mothers', but not fathers', comments concerning daughters' weight were significantly correlated with weight loss attempts, body esteem, and concern about gaining weight. In addition, parental modeling of weight concerns and weight control was related to daughters' attempts to lose weight. Only maternal dieting and parental complaints concerning their own weight were related to daughters' body esteem, while mothers' complaints of their own weight and fathers' investment in thinness were related to daughters' concerns about gaining weight. For boys, both mothers' and fathers' comments on sons' weight were correlated with weight loss attempts. In addition, mothers' comments were significantly correlated with sons' body esteem, while fathers' comments were correlated with sons' concerns about gaining weight. Fathers' weight loss attempts, complaints about their own weight, investment in thinness, and mothers' belief in calorie restrictive dieting correlated with sons' weight loss attempts.

Although much research has focused on the negative effects family factors may have on body dissatisfaction and eating disorder risk, familial variables may also serve as a buffer against such problems. In a large health survey in Connecticut that revealed that nearly 7% of adolescents reported engaging in extreme weight control behaviors, both risk factors and protective factors were identified. Risk factors for this behavior included childhood sexual abuse for girls, while high parental supervision/monitoring and history of sexual abuse were significant factors for boys. Protective factors for boys included high parental expectations, maternal presence, and connectedness with friends and other adults. For girls, protective factors included family connectedness, positive family

communication, parental supervision/monitoring, and maternal presence (Fonseca, Ireland, & Resnick, 2002). Thus, it appears that family and psychosocial relationships play an important role in the development of or prevention of eating problems.

Social acceptance by one's peer group may be another influence on body image concerns, with peer teasing and modeling possibly more strongly related to body dissatisfaction than perceived parental concern about children's weight (Smolak, 2002). Body awareness and body esteem can be affected by peers through social comparisons, and peer attitudes can contribute to negative stereotypes associated with body fat. Peer influences may include comments, discussion, and modeling of weight concerns and weight control techniques. For example, more than 40% of 11- to 13-year-old girls in one study reported regularly discussing weight, shape, and dieting with friends (Levine, Smolak, Moodey, Shuman, & Hessen, 1994). In addition, the importance that peers place on weight and eating was the strongest predictor of weight concerns in elementary school and middle school girls, accounting for 34% and 33% of the total variance of total weight concerns, respectively (Taylor et al., 1998).

Peer teasing regarding physical appearance is a common experience in childhood and adolescence (Cash, 2002). In a study of developmental factors that contribute to women's body image, Rieves & Cash (1996) found that peers were among the most frequent and worst perpetrators of teasing. Smolak (2000) and Smolak & Levine (2001) assert in their review chapters that girls may be more exposed to, aware of, and sensitive to weight related messages from peers. The sensitivity to messages may be more important than the amount of exposure to them. Thus, girls who take teasing more to heart may have greater weight concerns than boys (Smolak, 2002; Smolak & Levine,

2001; Taylor et al., 1998). For example, Fabian and Thompson (1989) reported that teasing was related to body dissatisfaction in premenstrual girls. In addition, Lunner and colleagues (2000) found that high BMI predicted teasing and body dissatisfaction, and body dissatisfaction predicted level of restricted eating. Teasing partially mediated the relationship between BMI and level of eating restriction. Other studies have also found a relationship between teasing and body dissatisfaction (Cattarin & Thompson, 1994; Thompson et al., 1995). Finally, siblings can provide a social comparison standard, with brothers especially affecting ideas about appearance, as they are frequent perpetrators of appearance-related teasing or criticism (Smolak, 2002).

Some forms of teasing may be considered more harmful than others, especially teasing that may resemble sexual harassment. Such teasing may be in the form of boys preventing girls from walking in the halls at school, flipping up skirts, unwelcome and inappropriate touching, and commenting on appearance in a way that is threatening or demeaning. Stein, Marshall, and Troop (1993, as cited in Polce-Lynch et al., 2001) found in a large national survey that sexual comments, gestures, and looks were reported by 98% of the 4200 nine- to 19-year-old girls surveyed. These behaviors may serve to focus girls on their bodies, encourage comparisons to the cultural ideal and other girls, and ultimately result in body dissatisfaction, decreased body esteem, and possibly eating disorders (Bordo, 1993; Frederickson & Roberts, 1997; Larkin, Rice, & Russell, 1996). Research suggests that frequency of sexual harassment is negatively associated with body image in elementary school girls but not boys (Smolak, 2002; Smolak & Levine, 2001). In addition, girls are more likely to report being scared by sexual harassment, and those

who are scared have lower body esteem than those uncertain of their feelings about the exposure (Smolak, 2002; Smolak & Levine, 2001).

### *Athletic Competence and Physical Activity*

While social acceptance has been widely researched regarding its relationship to body image concerns, athletic competence has been less frequently studied in relation to body image. Bowker, Gadbois, and Cornock (2003) report that sports involvement during adolescence may enhance physical self-esteem or general satisfaction with body image for both boys and girls. In addition, Koivula (1999) reported that individuals who participate in sports have a more positive perceived body image than do individuals who do not participate in sports. For example, in a sample of Turkish adolescents, athletic competence was significantly correlated with body image satisfaction, with athletes having higher body image satisfaction than non-athletes (Asci, Gokmen, Tiryaki, & Asci, 1997). Similarly, Cok (1990) found that male and female high school students who participated in physical activity programs had higher mean body image satisfaction scores than students who did not participate in physical activity programs. Furthermore, significant differences have been found between female athletes and non-athletes on body attractiveness scores (Bucaria, 1989; Snyder & Kivlin, 1975), with female athletes showing higher self-ratings of body attractiveness than non-athletes.

Although participation in physical and athletic activities has been shown to have a positive effect on body image and self-esteem, some research has found the opposite effect. Richman and Shaffer (2000) found a negative relationship between sports participation and global self-esteem. These results could potentially be explained using research conducted by Bem and Lenney (1976), who found that cross-sex behavior is

motivationally problematic for gender-typed individuals (i.e., individuals who subscribe to the stereotypical gender role) and these individuals actively avoid such behavior. As a result, actually engaging in cross-sex behavior caused gender-typed participants to report greater psychological discomfort and more negative feelings about themselves. Thus adolescent girls who hold a feminine gender role orientation and are forced to participate in sports may actually show a decrease in global self-worth despite the positive benefits that sports have to offer (Bowker et al., 2003).

Participation in sporting events such as ballet and gymnastics has been cited as a potential trigger for body image concerns. For example, Abraham (1996) found that young ballet dancers had higher problem eating scores and were more likely to have an eating disorder than other young women at the same school. The dancers were also more likely to be told by parents or coaches to increase their weight. In addition, a meta-analysis of 34 studies sampling a variety of sports revealed that athletes tended to report a high drive for thinness, although not necessarily body dissatisfaction (Smolak, Murnen, & Ruble, 2002). Davis (2002) suggested that female athletes might have a particularly strong aversion to fatness and strong incentives to reduce body fat to low levels because sports such as figure skating, gymnastics, swimming, and volleyball often require women to wear revealing clothing. In addition, some of these sports require an evaluative component from a judge, possibly leading to more perceived pressure to be thin (Davis, 2002).

### *Physical Appearance*

In addition to perceived social acceptance and athletic competence, physical characteristics can influence body image experiences. The attractiveness and social

acceptability of a person's physical appearance impact how the person is perceived and treated by others. Lerner and Jovanovic (1990) present a goodness-of-fit model, which proposes that how well one's appearance matches social standards of physical attractiveness may be pivotal in one's self-evaluations. In part, self-evaluation of one's appearance may be influenced by social feedback (e.g., overweight kids receive more social teasing and rejection). However, negative body image evaluations may also stem from self-appraisals in relation to internalized standards that the individual does not match (Cash, 2002).

The literature supports the idea that physical appearance plays a role in body dissatisfaction. Although it is unlikely that there are any direct biological contributions to body image concerns, there may be some indirect biological effects. One such effect may be BMI, as body weight and shape have a strong genetic basis. There is a relationship between BMI and body esteem (Cash, 2002; Holt & Ricciardelli, 2002; Oliver & Thelen, 1996; Rolland et al., 1997; Sands & Wardle, 2003; Taylor et al., 1998; Thompson, 1996). Specifically, BMI and perceptions of weight and shape have been found to be significant predictors of body dissatisfaction, dieting, and eating disorder risk. For example, Taylor and colleagues (1998) found that BMI was a significant predictor (along with peer teasing and trying to look like models in the media) of excessive weight concerns in both elementary school and middle school populations. In addition, Sands and Wardle (2003) found that 16% of the variance for body dissatisfaction was accounted for by BMI in their sample of 9- and 12-year-old girls.

Children may also exhibit concerns about how their bodies may develop in the future based on perceptions of parent weight and shape. For example, Teinboon and

colleagues (1994) found that adolescents in their sample who had attempted to alter their weight had significantly heavier mothers, but not fathers, than those who had not attempted to lose weight. Further, those who perceived some benefit from gaining weight had fathers who were on average significantly shorter and lighter than fathers of adolescents who saw no advantage in gaining weight. In addition, Kalucy, Crisp, and Harding (1977) found that 20% of girls undergoing treatment for anorexia reported that their fear of fatness was directly related to their mother's weight.

The sociocultural perspective on body image focuses on how cultural values influence individual values and behavior. Cultural values are important in understanding how individuals are perceived by others as well as how they perceive themselves. As individuals internalize cultural values, basic body image attitudes emerge which predispose them to interpret and respond to life events in particular ways (Cash, 2002). Therefore, self-perceptions of body attractiveness depend partially on the cultural definitions of what constitutes an attractive body. Body image depends on cultural ideals, and the closer one's perceptions of body attractiveness come to the ideal, the higher the ratings of perceived attractiveness should be (Jackson, 2002).

If a culture values attractiveness in its members, individuals within a culture will value attractiveness in themselves and others (Jackson, 2002). Further, the label "physically attractive" is presumed related to a variety of other culturally dependent positive attributes (e.g., social competence, occupational competence). Thus, people will hold more positive expectations for attractive than unattractive others if physical attractiveness is associated with a wide range of desirable attributes in self-perceptions and the perceptions of others. People behave more favorably toward attractive than

unattractive others, and more favorable treatment results in more favorable self-concepts for attractive people (Jackson, 2002). Not only are there expectations for attractive people, but also for those who may be unattractive or who may not fit the cultural beauty ideal. For example, Crandall (1994) showed that there appears to be social stigmatization of obesity, and obesity is seen by some as a controllable character defect. In addition, negative social feedback may be differentially targeted toward obese individuals (Wertheim et al., 1997). Therefore, individuals who have “anti-fat” attitudes may hold obese others responsible for their life outcomes (Jackson, 2002).

In further support of the importance of physical attractiveness in society, attractiveness in children is linked to a myriad of positive characteristics and outcomes. Specifically, attractive children, when compared to unattractive children, are more likely to be associated with greater perceived academic competence, have fewer negative and more positive interactions, receive more attention and caregiving, display more positive behavior, possess more positive characteristics, experience more popularity with peers, and have greater intelligence, overall adjustment, and competent performance (Jackson, 2002). In addition, Mendelson, White, and Mendelson (1996) found over the course of three studies that children are sensitive to societal norms for appearance and weight and that overweight children learn to dislike their appearance. Furthermore, Tiggemann and Wilson-Barrett (1998) found that children aged 7 to 12 exhibited negative stereotyping of obese figure drawings, with the largest figure rating chosen most often as lazier (86%), less happy (74%), less popular (81%), and less attractive (94%) than the average figure drawing. These ratings were consistent across age groups and gender.

Most research on physical attractiveness has focused on the cultural ideals for attractiveness in Western industrialized cultures. Contemporary Western cultures typically idealize thinness for women and an average body type for men (Jackson, 2002). Explanations for the thin ideal include a desire to emulate the upper class, changing roles of women from maternal to more instrumental or masculine settings, a desire to appear youthful, and perceived association with health (Jackson, 2002; Wilson & Blackhurst, 2001). However, there are also potential negative consequences of the thin ideal, including negative body image, low self-esteem, and psychological and physical disorders (Jackson, 2002).

The pursuit of thinness has become a social norm in Western cultures with the idealization of thinness in women and girls, and this places them at greater risks for body image disturbance. For instance, Berel and Irving (1998) found that women who had internalized sociocultural norms of beauty reported a larger number of eating disorders than women who had not internalized sociocultural norms of beauty. Physical appearance is seen as a core aspect of femininity and has become a central component of the female gender stereotype (McKinley, 2002; Striegel-Moore & Franko, 2002; Wilson & Blackhurst, 2001). The experience of the self as beautiful serves to affirm a girl's feminine identity, and looking beautiful affirms that identity to others as well (Striegel-Moore & Franko, 2002). There appear to be large differences between cultural ideals for men and women. Women's and girls' bodies are more likely to be viewed in an evaluative way, whereas men's and boys' bodies are more likely to be evaluated functionally rather than aesthetically.

### *Global Self-Worth*

Global self-worth, or self-esteem, may be an important factor in the determination of body image ideals and attitudes (Cash, 2002). Many researchers have indicated that self-esteem plays a major role in the development of eating problems (Button et al., 1997; Grant & Fodor, 1986; Guinn, Semper, & Jorgensen, 1997; Hill, 1993; Rosen Gross, & Vara, 1987; Tiggeman & Wilson-Barrett, 1998; Usmiani & Daniluk, 1997; Zakin et al., 1984). The development of self-esteem is the result of a combination of factors, but physical appearance has been identified as a powerful determinant of self-perceptions (Feingold, 1992; Page, 1992). A positive self-concept may lead to the development of a positive body evaluation, which in turn could serve as a protective factor against events that threaten one's self-perception of body image. Conversely, poor self-esteem may increase the susceptibility to body image threats. For instance, Zakin and colleagues (1984) reported that feelings of personal attractiveness were related to feelings of self-esteem in adolescence. Moreover, self-esteem was negatively correlated with body dissatisfaction in a sample of third- through seventh-grade children (Tiggeman & Wilson-Barrett, 1998). Usmiani and Daniluk (1997) found that higher self-esteem scores were associated with more positive body image in post-menstrual girls but not premenstrual girls. Overall there appears to be a link between global self-concept and body satisfaction.

Individuals with eating disorders show lower levels of self-esteem than non-clinical samples (Hill & Pallin, 1998; Rosen et al., 1987). Maladaptive eating patterns appear to be related to greater self-discontent and low self-esteem, which is frequently expressed through body dissatisfaction (Button et al., 1997). For instance, Button and

colleagues (1996) found that low self-esteem predicted a lower ideal weight, and girls with low self-esteem at age 11-12 were at a significantly greater risk of developing an eating disorder by the age of 15-16. In fact, Button et al. (1996) found that girls reporting the lowest self-esteem were almost eight times more at risk of having high Eating Attitudes Test scores than girls reporting a high level of self-esteem. Additionally, Grant and Fodor (1986) found self-esteem to be the most salient predictor of anorexic behavior on the Eating Disorders Inventory.

In further support of the link between self-esteem to body dissatisfaction and eating problems, Hill & Pallin (1998) concluded that young girls are drawn to weight control to improve their self worth, as there was a strong correlation between dieting and negative self-perception, and global self-worth predicted dieting awareness in their sample of 8-year-old girls. In another study, Mendleson and colleagues (1996) found that children with high global self-worth tended to feel good about their appearance and their weight. These studies suggest that problems with low self-esteem may be expressed through excessive weight control and eating disorders.

#### *Overall Summary of Body Image and Self-Perceptions*

Self-perceptions have been shown in the literature to be a large contributor to body image concerns. Dimensions of self-perceptions such as social acceptance, athletic competence, and physical appearance have ample support in the literature for their relationship with the development of body image. Global self-worth, or self-esteem, may be one of the most salient variables for the prediction of body image concerns.

### *Body Image Concerns and Type of Schooling*

Most studies conducted on body image in children include samples from public schools. When comparison groups for children in public schools are included, children from private schools are generally used. Very little empirical research exists that has included home-schooled populations as participants. The available research on home-schooled children has been conducted regarding their socialization, teaching styles and home-schooling, and how children with learning disabilities fare when home-schooled (Cai, Reeve, & Robinson, 2002; Duvall, Deluadri, & Ward, 2004; Duvall & Ward, 1997; Holt & Farenga, 2003; Ray, 2004). There are a few books about home-schooling that claim to have research to back up assertions (for examples, see Holt & Farenga, 2003; Ray, 2004), however, the research is not clearly cited in the books, and it is difficult to ascertain from where the statistics are coming. Dr. Brian Ray is the director of the National Home Educators Research Institute (NHERI), which publishes a research journal, the *Home School Researcher*, in which most research on home-schooling is published. To date, there has been no published research on body image issues and home-schooled children. Home-schooling may serve as a protective factor for some children due to less daily interaction with peers (as compared with children who attend public school) who may convey messages regarding body concerns either through modeling or through teasing.

There is inconsistent data regarding how many people home-school their children in America, as states differ on their standards for registration and reporting of home-schooling to the respective state Boards of Education. It is estimated that approximately 1.1 million (2.2%) school-age children in the United States were home-schooled in 2003,

which represents a 29% increase since 1999 (Viadero, 2004). Holt and Farenga (2003) report that families who home-school their children are probably mostly white, more rural than urban, and most likely have an income that is close to the national average. The education level of parents who home-school their children varies, with some having only a high school education, while others have had some college education (Holt & Farenga, 2003). According to Holt and Farenga (2003), people take their children out of public school because they do not wish to have government interference in how their children are raised, they want to spend more time with their children, and they want to “protect their children from perceived mental, physical or spiritual harm” (p.1). Furthermore, Holt and Farenga (2003) explain that some people do not agree with the structure of curriculum in American public schools and feel that their children would receive a better education at home.

#### *Limitations of the Current Literature*

Although body image has been the subject of many studies, there are still gaps in what is known about body image and its influence on behavior, attitudes, and quality of life (Striegel-Moore & Franko, 2002). Much of the current literature includes women and girls as participants for body image concerns and eating disorders, and there are fewer studies available that have investigated body image issues in men and boys. In addition, the literature on body image and eating disorders has historically focused on adult and adolescent populations. Although research in this area has started to include children in the past several years, there is still much information that is not known, such as when body image issues develop and the developmental course of body image issues. The current study will include preadolescent children from both genders. Another limitation

of the literature is that many researchers have focused on the measurement of global self-esteem when predicting body image concerns or eating disorders and have not investigated the multidimensional nature of self-perceptions. The current study will utilize a measure that includes global self-worth, as well as different dimensions of self-perceptions (e.g., athletic competence, social acceptance, physical appearance) to investigate the relationship between these variables and body image concerns and maladaptive eating behaviors.

Furthermore, many measures have been developed to assess eating disorders in adolescents and adults, but few have been created that adequately measure maladaptive eating behaviors in children. Several of the measures developed for children have been adapted from adult measures or used formats that were problematic for children (e.g., hard to read, confusing format; Maloney, McGuire, & Daniels, 1988; Thelen, Powell, et al., 1992; Vacc & Rhyne, 1987). The current study will investigate the reliability of a new measure that was developed to assess body image and eating behavior in preadolescent girls. The items of the measure were constructed by using the diagnostic criteria for eating disorders, interviews with mothers of eating-disordered preadolescents, and suggestions from experts in the field of eating disorders. Although the measure was initially developed for use with preadolescent girls, the current study will investigate its utility with preadolescent boys, as well.

There is currently no published research regarding body image concerns for children who are home-schooled. Most importantly for the current study, the differences in body image concerns, if any, between children who attend public school and children who are home-schooled have not been investigated to date. The current study will attempt

to assess body image concerns for children who are home-schooled and children who are from public schools.

### Purpose of the Study

The literature reviewed reveals that some preadolescent children experience body dissatisfaction and weight concerns. Studies in this area also suggest that self-perceptions may influence body image concerns and the development of eating disorders. Therefore, in order to provide further evidence of the association of self-perceptions to body image and eating problems, the purpose of the present study was to assess the relationship of self-perceptions to body image dissatisfaction and eating behaviors in preadolescent boys and girls. Furthermore, because there have been no investigations to date regarding the body image concerns of home-schooled children, the investigator attempted to collect data to compare home-schooled children's body image concerns and eating attitudes to those of children who attend public school. However, the recruitment of home-schooled individuals was unsuccessful.

### Hypotheses

#### *Hypothesis 1*

Girls were expected to show greater body dissatisfaction and higher scores on eating disorder measures than boys, after controlling for BMI.

#### *Hypothesis 2*

After controlling for BMI, self-perceptions were expected to predict body dissatisfaction and scores on eating disorder measures.

*Hypothesis 2a*

Social acceptance was expected to predict body dissatisfaction and scores on eating disorder measures after controlling for BMI. Specifically, the relationship was expected to be negative, such that as perceived social acceptance increased, body dissatisfaction and scores on eating disorder measures would decrease.

*Hypothesis 2b*

Athletic competence was expected to predict body dissatisfaction and scores on eating disorder measures after controlling for BMI. Specifically, the relationship was expected to be negative, such that as perceived athletic competence increased, body dissatisfaction and scores on eating disorder measures would decrease.

*Hypothesis 2c*

Physical appearance was expected to predict body dissatisfaction and scores on eating disorder measures after controlling for BMI. Specifically, the relationship was expected to be negative, such that as perceived physical appearance increased, body dissatisfaction and scores on eating disorder measures would decrease.

*Hypothesis 2d*

Global self-worth was expected to predict body dissatisfaction and scores on eating disorder measures after controlling for BMI. Specifically, the relationship was expected to be negative, such that as perceived global self-worth increased, body dissatisfaction and scores on eating disorder measures would decrease.

### *Hypothesis 3*

Hypothesis 3 stated that if home-schooled children participated in the study, children from public schools were expected to have higher body image dissatisfaction and higher scores on eating disorder measures than children who were home-schooled, after controlling for BMI. However, as data were not collected from home-schooled children, this hypothesis was not tested.

### Research Questions

#### *Research Question 1*

Does the EBBIT have good internal consistency for preadolescent boys?

#### *Research Question 2*

Is there evidence for the validity of the EBBIT as evidenced by a positive relation between it and the KEDS (another reliable, validated measure of eating disorders used with children)?

## CHAPTER III

### METHODOLOGY

#### *Participants*

A total of 75 participants were recruited for this study. Participants were 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> grade boys and girls ages 9 to 13 years old ( $M = 10.35$ ,  $SD = .96$ ) from Kansas and Arkansas school districts. Sixty-four percent of the sample was female, while 36% of the sample was male. Thirty-nine children were in 4<sup>th</sup> grade, 25 were in 5<sup>th</sup> grade, and 11 were in 6<sup>th</sup> grade. Ninety-two percent of the sample was Caucasian, while 3% was Hispanic, 1% was Native American, and 1% was biracial. Forty-nine of the children were from Arkansas, while 26 of the children resided in Kansas. All participants were from public schools.

#### *Measures*

##### *Demographic Information Form (Appendix A)*

A demographic questionnaire was sent to participants' parents along with a parental consent form. The form requested information about the child's age, ethnicity, any medical conditions that might cause him/her to eat certain foods, and the amount of time spent in classroom/group education activities, along with the family's race, income before taxes, religious affiliation, and any special diets the family might have. An

envelope was provided to return the demographic information form along with the parental consent form to the teacher.

*Eating Behaviors and Body Image Test (EBBIT) for Preadolescent Girls (Appendix B)*

To assess eating behaviors and body image concerns in preadolescent girls, Candy and Fee (1998b) developed the Eating Behaviors and Body Image Test (EBBIT). The EBBIT (Candy & Fee, 1998b) is a 38-item self-report questionnaire that consists of two factors. Factor 1 measures restrictive eating behaviors and body image dissatisfaction (Body Image Dissatisfaction/Restrictive Eating: BIDRE). Factor 2 is a measure of binge eating (Binge Eating Behaviors: BEB). Four additional items make up the Compensatory Behaviors Subscale, which measures purging behaviors. The degree to which the girls engage in the behaviors is assessed using a 4-point Likert scale (0 = “Never,” 1 = “Rarely [Once a month],” 2 = “Often [Once a week],” 3 = “Most of the time [Everyday]”). Higher scores for each of the factors indicate greater body image disturbance and problem eating behaviors, with a possible range of 0 to 72 on the BIDRE factor and 0 to 48 on the BEB factor. Two-week test-retest reliability for the BIDRE factor was shown to be .90 and .79 for the BEB factor. Internal consistency reliability for the BIDRE and BEB factors was .91 and .75, respectively (Candy & Fee, 1998b). The EBBIT was not initially intended for use with male populations, thus one item was adapted for use with both girls and boys. The item “I think I weigh more than most girls my age and height” was changed to “I think I weigh more than most kids my age and height.” In addition, an item was added to the EBBIT to include fathers as a reference point for weight loss behavior (“I try to lose weight like my father does.”). For the current sample, internal consistency was .91 for the BIDRE factor and .82 for the BEB factor.

*The Kids Eating Disorders Survey (KEDS; Childress, Brewerton, Hodges, & Jarrell, 1993; Appendix C)*

To further assess body image in children and to validate the EBBIT, the Kids Eating Disorders Survey (KEDS) was used. The KEDS was created by simplifying the items of the Eating Satisfaction Inventory for adults into a more understandable version for girls and boys in 5<sup>th</sup> through 8<sup>th</sup> grade. The KEDS is a 14-item self-report assessment of body image and eating disorder symptoms in children. Twelve of the items are questions for which the child circles the answer “yes,” “no,” or “?” (i.e., “don’t know”). In addition, the KEDS includes a set of eight figural images to assess body image, which is described below (see Body Image Silhouettes section and Appendix C). The final two items of the KEDS consist of a child’s response on the figural drawings for perceived body size and the discrepancy between the child’s perceived and ideal body sizes. These responses are given a “yes” or “no” score for possible pathological body dissatisfaction. Items are categorized into two components, weight dissatisfaction and restricting/purging. Responses are assigned a value of 1 for “no” responses and a value of 2 for “yes” responses. Total scores are calculated by summing the total of all responses. For the purposes of the current study, the KEDS total score was calculated for the first 12 items and not including the body silhouettes. The body silhouettes were used as a separate measure of body dissatisfaction for the current study (see below).

Childress and colleagues (1993) found the sensitivity (i.e., power, the proportion of true positives detected) for the KEDS to be 78%, while the specificity (i.e., the proportion of true negatives detected) was 68%. In a study of 1,883 5<sup>th</sup> through 8<sup>th</sup> grade children, Childress, Jarrell, and Brewerton (1993) found that the KEDS was internally

consistent 7( $\alpha = .73$ ), with four-month test-retest reliability of  $r = .83$ . Internal consistency was .60 for the current sample, with Items 6 (made self throw up to lose weight), 8 (taken diet pills to lose weight), 9 (taken diuretics to lose weight), and 10 (taken laxatives to lose weight) not used in the reliability analysis because no child endorsed the items. After examining Cronbach's alpha for the KEDS items and observations by the investigator of confusion from participants about items 11 and 12, reliability was computed with those items omitted. Without items 11 and 12, internal consistency increased to .75 for the sample.

*Body Image Silhouettes (BIS; Childress et al., 1992; Appendix D)*

Body image for participants was assessed with the Body Image Silhouettes (BIS; Childress et al., 1993). The BIS is the figural body image assessment for the KEDS. The BIS requires participants to look at an eight-figure silhouette scale with representations of figures of children ranging from very thin to very heavy. Participants were asked to circle the figure they believe looks most like them (Perceived Body Size) and then to underline on the same sheet of paper the figure that they would most like to resemble (Ideal Body Size). Each silhouette is numbered from 1 to 8 (1 = smallest; 8 = largest). BIS Dissatisfaction Scores are computed by subtracting the number corresponding to the silhouette representing Ideal Body Size from the number corresponding to the silhouette representing Perceived Body Size. Positive numbers indicate a desire to be smaller than one's current size, while negative numbers indicate a desire to be larger, with a possible range from  $-7$  to  $7$ . Two-week test-retest reliability for the BIS was reported to be .77 for Perceived Body Size, .74 for Ideal Body Size, and .82 for Body Dissatisfaction (Candy & Fee, 1998a). Internal consistency for this sample was .62.

### *Self-Perception Profile for Children (SPPC; Harter, 1985; Appendix E)*

The Self-Perception Profile for Children (SPPC; Harter, 1985) was used to assess participants' perceptions of their competence and global self-worth. The SPPC consists of six subscales, including Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Behavioral Conduct, and Global Self-Worth. The scales being used in the current study are the Social Acceptance, Athletic Competence, Physical Appearance, and Global Self-Worth subscales. Each subscale contains six items. For each item, the child is asked to decide which type of kid is most like him/her, and then asked whether the statement is "sort of true for me" or "really true for me." Items are scored on a scale from 1 to 4, with a score of 1 indicating low perceived competence and a score of 4 indicating high perceived competence. Thus, higher scores indicate greater perceived confidence and global self-worth. Internal consistency reliability for each of the six subscales is reported by Harter (1985) to be .80 to .85 for Scholastic Competence, .75 to .80 for Social Acceptance, .80 to .86 for Athletic Competence, .76 to .82 for Physical Appearance, .71 to .77 for Behavioral Conduct, and .78 to .84 for Global Self-Worth. Internal consistencies for the current sample were .76 for Social Acceptance, .71 for Athletic Competence, .85 for Physical Appearance, and .83 for Global Self-Worth.

### *Height and Weight Assessment*

The child participants were weighed and measured after the administration of the test measures. In order to preserve confidentiality, the participants were brought into a separate room one at a time to be individually weighed and measured. To ensure continuity of measurement, the same scale was used to weigh each participant. The participants were asked to remove their shoes before being weighed and measured. The

participants were not informed of their weight or height status so as to prevent them from becoming concerned or upset about their bodies. Body Mass Index (BMI) was calculated by dividing their weight in kilograms by height in meters squared (Keyes, Fidanza, Karvonen, Kimura, & Taylor, 1972). A BMI of 18 to 24 is considered to be in the Normal range, while a BMI of 25 to 29 is considered to be in the Overweight range, a BMI of 30-39 is considered to be in the Obese range, and a BMI of 40 and over is considered in the Extremely Obese range. For the current sample, 4 children were in the Overweight range (BMI ranging from 26.01 to 28.94), while only one child was in the Obese range (BMI = 34.52). Therefore, 6.67% of the sample was considered heavier than “normal.” In addition, 32 children (42.67% of the sample) had a BMI under 18, indicating that they may be under “normal” weight. Thus, only 50.67% of the current sample was considered in the “normal” range for BMI.

### *Procedure*

#### *Recruitment of Public School Participants*

For recruitment of public school participants, permission was first obtained from the superintendents and principals of the school systems (See Appendix F and G for respective consent forms). A total of 18 superintendents were contacted, 2 in Arkansas and 16 in Kansas, for recruitment of public school participants. Of those 18, four superintendents agreed to allow their students to participate, and four principals from three of those schools allowed the investigator to collect data with students from their schools. Next, teachers within each approved school district were asked if they were willing to send materials home with students and have students miss portions of their class to participate in the study. Parental consent (Appendix H) was then obtained by

sending a letter home with each child within a class after superintendent and principal consents and teacher assents were obtained. Child assent (Appendix I) was obtained before each testing session. The teachers received an explanation of the study and instructions about how to assist the experimenter.

Once permission was obtained from the superintendent and the principal, the classroom teachers (See Appendix J for letter and instructions to teachers), with aid from the researcher, were asked to send home parental consent forms with participants in their classes. Approximately 15% of parents who received a letter consented to allow their children to participate in the study. Students who returned the parental consent form were then asked to complete the EBBIT, the KEDS (including the BIS), and the SPPC at a time agreed upon by the researcher and the students' teachers. Testing sessions were held at the schools during regular school hours in a quiet place (e.g., the conference room or nurse's office).

#### *Recruitment for Home-Schooled Participants*

The investigator attempted multiple times to recruit participants who were home-schooled but was unsuccessful. Home school associations in Central Kansas were contacted multiple times and no messages were returned. Emails were sent to 21 home school support groups throughout central and western Kansas. Two support group leaders responded, one who was not interested and one person who was willing to present the current study for parents' consideration. No parents wanted to participate. Personal contacts of the investigator and the investigator's advisor also did not materialize. Furthermore, the investigator received no responses to a newspaper ad (Appendix K) or to flyers (Appendix L) advertising the study.

The investigator discussed the feasibility of the research with home-schooled children in a phone conversation with Dr. Brian Ray (personal communication, September 15, 2006) of the National Home Education Research Institute (NHERI). Dr. Ray stated that he felt the investigator was trying all avenues that he would have suggested for recruitment. He mentioned that home-schooled populations are often suspicious of “outsiders” and are hesitant to trust people whom they do not know, especially if they are associated with a state school or government program. Dr. Ray stated that he felt the study was “important” but could not personally endorse it.

#### *Administration of Measures*

Once proper consent and assent were obtained from all appropriate parties, the participants were assessed at a time agreed upon by teachers and principals. The participants received a short description of the study and information about the assent form, which were read before the administration of the rating scales. The directions for the EBBIT and KEDS were read aloud once to the participants before administration of each measure, and any questions were answered. Each participant was then asked to read two items aloud to the investigator before beginning. The participants were then given the SPPC. The participants were read the standardized instructions for the SPPC as provided in the manual (Harter, 1985). The participants were told to raise their hands if they have any questions, and they were closely monitored throughout testing.

For any child who appeared confused by directions, individual assistance was provided until the child appeared to understand what he/she was supposed to do. Under these circumstances, the examiner read the first one or two items and explained the answer choices, and children were generally able to complete the measures on their own.

No child had to discontinue the study due to having difficulty reading and/or not understanding the task.

The participants' body images were assessed with the BIS. The participants were asked to circle the figure that looks most like them (Perceived Body Size), and then to underline the one that they would most like to resemble (Ideal Body Size). For increased confidentiality and privacy, a blank piece of paper was given to each participant to be placed over answers as they completed the BIS.

Upon completion of the BIS, EBBIT, KEDS, and SPPC, the participants' height and weight were measured. Height was measured to the nearest quarter of an inch, and inches were converted to meters in order to calculate BMI. The participants were measured by positioning their bodies so that their heels and buttocks were against the vertical support, and their heads were straightforward. Weight was measured to the nearest pound on a digital scale, and pounds were converted to kilograms in order to calculate BMI. The children were weighed and measured with their shoes off. Both weight and height were taken in private for each participant.

When all rating scales were completed, the participants were debriefed. If any child endorsed an item on the rating scales that may be indicative of an eating problem (e.g., one of the items from the Compensatory Behaviors Scale of the EBBIT or a high total score on the EBBIT), the child's parent(s) were sent a community referral sheet (Appendix M) that included phone numbers for agencies and organizations that provide counseling and/or support. Six letters in all were sent to the respective parents.

## CHAPTER IV

### FINDINGS

Analyses were conducted for two main hypotheses and two research questions. Specific models and results are described below. Correlations of the main variables of interest (BIDRE, BEB, BISDIS, KEDSTOT, SPPCSA, SPPCAC, SPPCPA, SPPCGSW, BMI) are included in Table 1. The means and standard deviations for the main variables of interest, excluding BISDIS, are included in Table 2. One child scored in the eating disorder range for total EBBIT score, while two children scored near the eating disorder range. Three children endorsed throwing up to lose weight (2 endorsed rarely/once per month and 1 endorsed often/once per week), one child endorsed using diet pills rarely/once per month, and one child endorsed using diuretics to lose weight rarely/once per month. Six children in all endorsed eating disorder behaviors or had high scores on the EBBIT, which was 8% of the total sample. Table 3 provides a summary of the outcomes for BISDIS by gender. Only 2.7% of children in the sample (1 boy and 1 girl) wanted to be larger than their perceived size, and 37.3% of children were satisfied with their perceived size, leaving 60% of children choosing a figure that was smaller than their perceived size.

Table 1

*Intercorrelations for Variables of Interest*

	Gender	BIDRE	BEB	BISDIS	KEDSTOT	SPPCSA	SPPCAC	SPPCPA	SPPCGSW
BIDRE	.08								
BEB	-.12	.05							
BISDIS	.06	.64**	.14						
KEDSTOT	.00	.79**	.05	.59**					
SPPCSA	.04	-.27*	-.02	-.44**	-.23*				
SPPCAC	.13	.08	.02	-.15	-.02	.33**			
SPPCPA	-.12	-.58**	-.20	-.60**	-.60**	.46**	.23		
SPPCGSW	.01	-.33**	-.33**	-.46**	-.37**	.57**	.39**	.73**	
BMI	.08	.46**	.01	.61**	.38**	-.28*	-.16	-.35**	-.28*

Note: BIDRE = Body Image/Restrictive Eating Factor of the EBBIT; BEB = Binge Eating Behavior Factor of the EBBIT; BISDIS = Body Image Dissatisfaction

scores on the BIS; KEDSTOT = Total score on the KEDS; SPPCSA = Social Acceptance Scale of the SPPC; SPPCAC = Athletic Competence Scale of the

SPPC; SPPCPA = Physical Appearance Scale of the SPPC; SPPCGSW = Global Self-Worth Scale of the SPPC; BMI = Body Mass Index.

\* $p < .05$ . \*\* $p < .01$ .

Table 2

*Means and Standard Deviations for the Variables of Interest by Gender*

	Total Sample		Boys		Girls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BIDRE	21.32	16.05	19.59	14.30	22.28	17.02
BEB	9.76	6.45	10.85	7.28	9.14	5.93
KEDSTOT	1.56	1.68	1.37	1.52	1.67	1.77
SPPCSA	2.91	.71	2.87	.78	2.93	.68
SPPCAC	2.91	.60	3.02	.60	2.86	.60
SPPCPA	2.94	.79	3.08	.74	2.87	.74
SPPCGSW	3.24	.67	3.22	.64	3.24	.64
BMI	19.37	3.74	19.00	3.25	19.58	4.00

Note: BIDRE = Body Image/Restrictive Eating Factor of the EBBIT; BEB = Binge Eating Behavior Factor

of the EBBIT; KEDSTOT = Total KEDS score; SPPCSA = Social Acceptance scale of the SPPC;

SPPCAC = Athletic Competence scale of the SPPC; SPPCPA = Physical Appearance scale of the SPPC;

SPPCGSW = Global Self-Worth scale of the SPPC; BMI = Body Mass Index. Higher scores on the

BIDRE and BEB factors indicate more dissatisfaction and eating problems; higher scores on the SPPC

factors indicate higher self-competence.

Table 3

*Frequency of BISDIS by Gender*

Score	Total Sample		Boys		Girls	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
-1	2	2.7	1	3.7	1	2.1
0	28	37.3	11	40.7	17	35.4
1	24	32	8	29.6	16	33.3
2	13	17.3	4	14.8	9	18.8
3	4	5.3	2	7.4	2	4.2
4	4	5.3	1	3.7	3	6.3

Note: BISDIS = Body Image Dissatisfaction Score as measured by the Body Image Silhouettes (BIS).

BISDIS is computed by subtracting the number corresponding to the silhouette representing desired body size from the number corresponding to the silhouette representing perceived body size. Negative numbers indicate a desire to be heavier, while positive numbers indicate a desire to be thinner, with possible range from -7 to 7.

*Preliminary Analyses*

Oneway ANOVAs were conducted with demographic variables in order to determine if there were any differences on the main variables of interest. There were no significant differences in the sample for the variables of interest with regard to age, race, school, grade, if the child had special needs (e.g., learning disability, received special education services, etc.), religion, or if the child had a special diet (e.g., no junk food, diabetic), with all  $p$ 's > .05.

### *Hypothesis One*

Hypothesis one stated that gender would predict body dissatisfaction (as measured by the BISDIS) and scores on an eating disorder measure (as measured by the BIDRE and BEB factors of the EBBIT) after controlling for BMI. Specifically, BIDRE and BEB scores were expected to be higher for girls than for boys. Three separate hierarchical regression analyses were conducted for the BISDIS and the BIDRE and BEB factors. In each hierarchical multiple regression analysis, BMI was entered on step 1 as a control variable based on theory and the research literature, with gender entered on step 2.

For the BISDIS as the criterion, the model was significant for the final regression,  $F(2, 72) = 20.91, p < .001$ . BMI was the only significant predictor in the final model for BISDIS, accounting for 36.4% of the variance. Specifically, children with a higher body mass index tended to have higher body image dissatisfaction. Gender was not a significant predictor of BISDIS (See Table 4), and thus hypothesis one was not supported regarding the relationship between gender and BISDIS.

For the BIDRE factor, the model was significant for the final regression,  $F(2, 72) = 9.60, p < .001$ . BMI was the only significant predictor in the final model for BIDRE, accounting for 20.4% of the variance. Specifically, children with higher body mass index were more likely to endorse having body image dissatisfaction and engaging in restrictive eating. Gender was not a significant predictor of the BIDRE factor (See Table 4), and thus hypothesis one was not supported regarding the relationship between gender and the BIDRE factor.

For the BEB factor, the model was not significant for the final regression,  $F(2, 72) = .61, p = .55$ . Neither BMI nor gender was a significant predictor of binge eating behavior (as measured by the BEB factor; See Table 4). Hypothesis one was not supported regarding the relationship between gender and the BEB factor.

Table 4

*Summary of Hierarchical Regression Analysis for Hypothesis One (N = 75)*

Predictor Variable	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
<b>BISDIS</b>				
Step 1-BMI	.189	.029	6.438	.00
Step 2-Gender	.027	.227	.121	.90
<b>BIDRE</b>				
Step 1-BMI	1.946	.451	4.313	.00
Step 2-Gender	1.577	3.487	.452	.65
<b>BEB</b>				
Step 1-BMI	.031	.202	.152	.88
Step 2-Gender	-1.724	1.565	-1.101	.27

Note: Body Dissatisfaction (BISDIS); Body Image Dissatisfaction/Restrictive Eating (BIDRE) factor of the EBBIT; Binge Eating Behavior (BEB) Factor of the EBBIT; Body Mass Index (BMI) is a ratio of weight in kilograms by height in meters squared; Gender included boys and girls.

## *Hypothesis Two*

### *Hypothesis 2a*

Hypothesis 2a stated that social acceptance would predict body dissatisfaction (as measured by the BISDIS) and scores on an eating disorder measure (as measured by the BIDRE and BEB factors of the EBBIT) after controlling for BMI. Specifically, the relationship was expected to be negative, such that children with higher perceived social acceptance would have lower body dissatisfaction and scores on the EBBIT. Three separate hierarchical regression analyses were conducted for the BISDIS and the BIDRE and BEB factors. In each hierarchical multiple regression analysis, BMI was entered on step 1 as a control variable based on theory and the research literature, with social acceptance (as measured by the SPPC) entered on step 2.

For BISDIS as the criterion, the model was significant for the final regression,  $F(2, 70) = 28.30, p < .001$ . BMI was a significant predictor in the final model for BISDIS, accounting for 25.5% of the variance. Specifically, children with a higher body mass tended to have higher body image dissatisfaction. In addition, social acceptance was a significant predictor of BISDIS, accounting for 8.0% of the variance. Specifically, the relationship was in the expected negative direction. Children with higher perceived social acceptance scores were more likely to have less body image dissatisfaction (See Table 5). Thus, Hypothesis 2a was supported regarding the relationship between perceived social acceptance and BISDIS.

For the BIDRE factor, the model was significant for the final regression,  $F(2, 70) = 10.55, p < .001$ . BMI was the only significant predictor in the final model for BIDRE, accounting for 17.0% of the variance. Specifically, children with a higher body

mass index were more likely to endorse body image dissatisfaction and restrictive eating behaviors. Social acceptance was not a significant predictor of BIDRE (See Table 5), which indicated that social acceptance was not related to restrictive eating and body image dissatisfaction. Thus, Hypothesis 2a was not supported regarding the relationship between perceived social acceptance and the BIDRE factor.

For the BEB factor, the model was not significant for the final regression,  $F(2, 70) = .02, p = .98$ . Neither BMI nor social acceptance was a significant predictor of binge eating behavior (as measured by the BEB factor; See Table 5), which indicated that body size and perceived social acceptance were not related to binge eating as measured by the BEB factor. Thus, Hypothesis 2a was not supported regarding the relationship between perceived social acceptance and the BEB factor.

Table 5

*Summary of Hierarchical Regression Analysis for Hypothesis 2a (N = 73)*

Predictor Variable	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
<b>BISDIS</b>				
Step 1-BMI	.163	.029	5.682	.000
Step 2-SPPCSA	-.482	.152	-3.172	.002
<b>BIDRE</b>				
Step 1-BMI	1.748	.463	3.779	.000
Step 2-SPPCSA	-3.598	2.451	-1.468	.147
<b>BEB</b>				
Step 1-BMI	-.009	.205	-.046	.963
Step 2-SPPCSA	-.209	1.088	-.192	.848

Note: Body Dissatisfaction (BISDIS); Body Image Dissatisfaction/Restrictive Eating (BIDRE) factor of the EBBIT; Binge Eating Behavior (BEB) Factor of the EBBIT; Body Mass Index (BMI) is a ratio of weight in kilograms by height in meters squared; SPPCSA = Social Acceptance scale of SPPC.

*Hypothesis 2b*

Hypothesis 2b stated that athletic competence would predict body dissatisfaction (as measured by the BISDIS) and scores on an eating disorder measure (as measured by the BIDRE and BEB factors of the EBBIT) after controlling for BMI. Specifically, the relationship was expected to be negative, such that children with higher perceived athletic competence would have lower body image dissatisfaction and scores on the EBBIT. Three separate hierarchical regression analyses were conducted for the BISDIS and the BIDRE and BEB factors. In each hierarchical multiple regression analysis, BMI was

entered on step 1 as a control variable based on theory and the research literature, with athletic competence (as measured by the SPPC) entered on step 2.

For BISDIS as the criterion, the model was significant for the final regression,  $F(2, 70) = 20.63, p < .001$ . BMI was the only significant predictor in the final model for BISDIS, accounting for 34.7% of the variance. Specifically, children with a higher body mass index tended to have more body image dissatisfaction (as measured by BISDIS). Athletic competence was not a significant predictor of BISDIS (See Table 6), which indicated that athletic competence was not related to body image dissatisfaction as measured by BISDIS. Thus, hypothesis 2b was not supported regarding the relationship between perceived athletic competence and BISDIS.

For the BIDRE factor, the model was significant for the final regression,  $F(2, 70) = 10.52, p < .001$ . BMI was the only significant predictor in the final model for BIDRE, accounting for 22.6% of the variance. Specifically, children with a higher body mass index were more likely to endorse body image dissatisfaction and restrictive eating behaviors as measured by the BIDRE factor. Athletic competence was not a significant predictor of the BIDRE factor (See Table 6), which indicated that athletic competence was not related to body image dissatisfaction and restrictive eating as measured by the BIDRE factor. Thus, hypothesis 2b was not supported regarding the relationship between perceived athletic competence and the BIDRE factor.

For the BEB factor, the model was not significant for the final regression,  $F(2, 70) = .01, p = .99$ . Neither BMI nor athletic competence was a significant predictor of the BEB factor (See Table 6). Hypothesis 2b was not supported regarding the relationship between perceived athletic competence and the BEB factor of the EBBIT,

which indicated that perceived athletic competence was not related to binge eating as measured by the BEB factor.

Table 6

*Summary of Hierarchical Regression Analysis for Hypothesis 2b (N = 73)*

Predictor Variable	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
<b>BISDIS</b>				
Step 1-BMI	.185	.030	6.215	.000
Step 2-SPPCAC	-.112	.186	-.601	.550
<b>BIDRE</b>				
Step 1-BMI	2.041	.451	4.528	.000
Step 2-SPPCAC	4.086	2.822	1.448	.152
<b>BEB</b>				
Step 1-BMI	.007	.200	.033	.974
Step 2-SPPCAC	.201	1.253	.160	.873

Note: Body Dissatisfaction (BISDIS); Body Image Dissatisfaction/Restrictive Eating (BIDRE) factor of the EBBIT; Binge Eating Behavior (BEB) Factor of the EBBIT; Body Mass Index (BMI) is a ratio of weight in kilograms by height in meters squared; SPPCAC = Athletic Competence scale of SPPC.

*Hypothesis 2c*

Hypothesis 2c stated that physical appearance would predict body dissatisfaction (as measured by the BISDIS) and scores on an eating disorder measure (as measured by the BIDRE and BEB factors of the EBBIT) after controlling for BMI. Specifically, the relationship was expected to be negative, such that children with higher perceived physical appearance scores would have lower body image dissatisfaction and scores on the EBBIT. Three separate hierarchical regression analyses were conducted for the

BISDIS and the BIDRE and BEB factors. In each hierarchical multiple regression analysis, BMI was entered on step 1 as a control variable based on theory and the research literature, with physical appearance (as measured by the SPPC) entered on step 2.

For BISDIS as the criterion, the model was significant for the final regression,  $F(2, 70) = 40.57, p < .001$ . BMI was a significant predictor in the final model for BISDIS, accounting for 17.8% of the variance. Specifically, children with a higher body mass index tended to have higher body image dissatisfaction (as measured by BISDIS). In addition, physical appearance was a significant predictor of BISDIS, accounting for 16.9% of the variance. Specifically, the relationship was in the expected negative direction. Children with higher scores on perceived physical appearance were more likely to have lower body image dissatisfaction (as measured by BISDIS; See Table 7). Thus, Hypothesis 2c was supported regarding the relationship between perceived physical appearance and BISDIS.

For the BIDRE factor, the model was significant for the final regression,  $F(2, 70) = 24.60, p < .001$ . BMI was a significant predictor in the final model for BIDRE, accounting for 7.1% of the variance. Specifically, children with a higher body mass index tended to endorse more body image dissatisfaction and restrictive eating behaviors (as measured by the BIDRE factor). In addition, physical appearance was a significant predictor of the BIDRE factor, accounting for 20.4% of the variance. Specifically, the relationship was in the expected negative direction. Children with higher scores on perceived physical appearance were less likely to endorse body image dissatisfaction and restrictive eating behaviors as measured by the BIDRE factor (See Table 7). Thus,

Hypothesis 2c was supported regarding the relationship between perceived physical appearance and the BIDRE factor.

For the BEB factor, the model was not significant for the final regression,  $F(2, 70) = 1.69, p = .19$ . Neither BMI nor physical appearance was a significant predictor of the BEB factor (See Table 7), which indicated that body size and perceived physical appearance were not related to binge eating for this sample. Thus, Hypothesis 2c was not supported regarding the relationship between perceived physical appearance and the BEB factor.

Table 7

*Summary of Hierarchical Regression Analysis for Hypothesis 2c (N = 73)*

Predictor Variable	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
<b>BISDIS</b>				
Step 1-BMI	.140	.027	5.190	.000
Step 2-SPPCPA	-.651	.129	-5.057	.000
<b>BIDRE</b>				
Step 1-BMI	1.211	.415	2.916	.005
Step 2-SPPCPA	-9.800	1.984	-4.940	.000
<b>BEB</b>				
Step 1-BMI	-.132	.206	-.641	.524
Step 2-SPPCPA	-1.808	.984	-1.837	.070

Note: Body Dissatisfaction (BISDIS); Body Image Dissatisfaction/Restrictive Eating (BIDRE) factor of the EBBIT; Binge Eating Behavior (BEB) Factor of the EBBIT; Body Mass Index (BMI) is a ratio of weight in kilograms by height in meters squared; SPPCPA = Physical Appearance scale of SPPC.

### *Hypothesis 2d*

Hypothesis 2d stated that global self-worth would predict body dissatisfaction (as measured by the BISDIS) and scores on an eating disorder measure (as measured by the BIDRE and BEB factors of the EBBIT) after controlling for BMI. Specifically, the relationship was expected to be negative, such that children with higher scores on perceived global self-worth would have lower body image dissatisfaction and scores on the EBBIT. Three separate hierarchical regression analyses were conducted for the BISDIS and the BIDRE and BEB factors. In each hierarchical multiple regression analysis, BMI was entered on step 1 as a control variable based on theory and the research literature, with global self-worth (as measured by the SPPC) entered on step 2.

For BISDIS as the criterion, the model was significant for the final regression,  $F(2, 70) = 29.88, p < .001$ . BMI was a significant predictor in the final model for BISDIS, accounting for 31.5% of the variance. Specifically, children with a higher body mass index tended to have more body image dissatisfaction (as measured by BISDIS). In addition, global self-worth was a significant predictor, accounting for 14.7% of the variance. Specifically, the relationship was in the expected negative direction. Children with higher scores on perceived global self-worth were tended to have less body image dissatisfaction (as measured by BISDIS; See Table 8). Thus, hypothesis 2d was supported regarding the relationship between perceived global self-worth and BISDIS.

For the BIDRE factor, the model was significant for the final regression,  $F(2, 70) = 11.76, p < .000$ . BMI was a significant predictor in the final model for BIDRE, accounting for 14.4% of the variance. Specifically, children with a higher body mass index tended to endorse more body image dissatisfaction and restrictive eating behaviors

as measured by the BIDRE factor. In addition, global self-worth was a significant predictor of BIDRE, accounting for 5.5% of the variance. Specifically, the relationship was in the expected negative direction. Children with higher scores on perceived global self-worth were less likely to have body image dissatisfaction and restrictive eating behaviors (as measured by the BIDRE factor; See Table 8). Therefore, hypothesis 2d was supported regarding the relationship between perceived global self-worth and the BIDRE factor.

For the BEB factor, the model was significant for the final regression,  $F(2, 70) = 4.68, p = .01$ . Global self-worth was the only significant predictor in the final model, accounting for 11.8% of the variance. Specifically, the relationship was in the expected negative direction. Children with higher scores on perceived global self-worth tended to endorse fewer binge eating behaviors as measured by the BEB factor (See Table 8). Thus, hypothesis 2d was supported regarding the relationship between global self-worth and the BEB factor. BMI was not a significant predictor of the BEB factor, which indicated that body size was not related to binge eating behaviors in this sample.

Table 8

*Summary of Hierarchical Regression Analysis for Hypothesis 2d (N = 73)*

Predictor Variable	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
<b>BISDIS</b>				
Step 1-BMI	.161	.028	5.675	.000
Step 2-SPPCGSW	-.559	.161	-3.473	.001
<b>BIDRE</b>				
Step 1-BMI	1.680	.457	3.679	.000
Step 2- SPPCGSW	-5.241	2.596	-2.019	.047
<b>BEB</b>				
Step 1-BMI	-.162	.193	-.840	.404
Step 2- SPPCGSW	-3.358	1.097	-3.060	.003

Note: Body Dissatisfaction (BISDIS); Body Image Dissatisfaction/Restrictive Eating (BIDRE) factor of the EBBIT; Binge Eating Behavior (BEB) Factor of the EBBIT; Body Mass Index (BMI) is a ratio of weight in kilograms by height in meters squared; SPPCGSW = Global Self-Worth scale of SPPC.

*Research Question 1*

Research Question 1 asked if the EBBIT has good internal consistency for preadolescent boys. Cronbach's alpha was used to answer this question, with internal consistency reliability calculated for the BIDRE factor and BEB factor of the EBBIT. For the total sample, internal consistency was .91 for the BIDRE factor and .82 for the BEB factor. For girls only, internal consistency was .90 for the BIDRE factor and .79 for the BEB factor. For boys only, internal consistency was .94 for the BIDRE factor and .87 for the BEB factor. Both of these coefficients indicate good internal consistency for use of the EBBIT with preadolescent boys, and slightly higher internal consistency coefficients for boys than for girls in this sample.

### *Research Question 2*

Research Question 2 asked if there is evidence for the validity of the EBBIT as evidenced by a positive relation between it and the KEDS (another reliable, validated measure of eating disorders used with children). Zero-order (Pearson) correlation coefficients were calculated to answer this question. Because the BIDRE factor and BEB factor of the EBBIT clearly measure two different constructs, zero-order (Pearson) correlation coefficients were also calculated for the two factors of the EBBIT. BIDRE and BEB scores were correlated with KEDS total scores for boys and girls separately. For girls, the correlation between the BIDRE factor and KEDS total scores was significant,  $r(46) = .87, p < .01$ . However, the correlation between the BEB factor and the KEDS total scores was not significant,  $r(46) = .01, p = .95$ . For boys, the correlation between the BIDRE factor and KEDS total scores was significant,  $r(25) = .82, p < .01$ . However, the correlation between the BEB factor and the KEDS total scores was not significant,  $r(25) = -.12, p = .56$ . These results indicate that the BIDRE factor of the EBBIT is a valid measure for the detection of problem eating behaviors as compared with KEDS total scores.

## CHAPTER V

### CONCLUSION

The purpose of the present study was to assess the relationship of gender and self-perceptions to body image dissatisfaction and eating behaviors in preadolescent girls and boys. Specifically, the extent to which perceptions of social acceptance, athletic competence, physical appearance, and global self-worth predicted body dissatisfaction, restrictive eating, and binge eating behavior were examined. Three primary measures of body dissatisfaction and eating behaviors were used. The Body Image Silhouettes were used for measuring body dissatisfaction (BISDIS). Two factors of the Eating Behaviors and Body Image Test (EBBIT) were used to assess eating behaviors, including the Body Image Dissatisfaction/Restrictive Eating (BIDRE) factor and the Binge Eating Behavior (BEB) factor. The Self-Perceptions Profile for Children (SPPC) was used to assess perceived social acceptance, athletic competence, physical appearance, and global self-worth of participants.

Historically, research related to body image in children has focused on identifying the prevalence of body image concerns and the risk factors associated with such concerns. There are numerous risk factors for distorted body image and eating disorders. As evidenced in the current and past research, self-esteem has consistently been found to be an important factor related to the development of body image (Button et al, 1997; Button et al., 1996, Grant & Fodor, 1986; Keel et al., 1997) and problems with self-

esteem may be expressed through maladaptive weight control practices (Button et al, 1997; Button et al., 1996, Grant & Fodor, 1986). The current study included three hypotheses regarding the relationship of body mass index (BMI) and self-perceptions on the eating behaviors and body image of preadolescent girls and boys attending public school. The following sections provide a discussion of the results. In addition, implications of the findings, methodological considerations, and directions for future research are provided.

### Summary of and Interpretation of Results

#### *Relationship Between BMI, Body Dissatisfaction, and Eating Behaviors*

For each of the hypotheses in this study, BMI was used as a control variable and entered first because of its consistent presence in the literature as a predictor of body image dissatisfaction and eating disorders. In the current study, BMI accounted for the majority of the variance in body image dissatisfaction and restrictive eating. Thus, having a larger body size made it more likely that children would choose to look thinner than they currently were and/or would engage in some restrictive eating behavior to lose weight or to prevent gaining weight. This relationship has been shown elsewhere in the literature, as BMI has been shown to be associated with body dissatisfaction (Candy & Fee, 1998a; Garner, 2002; Sands & Wardle, 2003; Taylor et al., 1998). For example, Mendelson and colleagues (1996) found that as youngsters' weights increased, they were more likely to have poor opinions of their appearance. For this sample,

BMI was not a significant predictor of the binge eating in any of the regressions conducted in this study. It is unclear exactly why BMI did not predict binge eating behavior. Most participants did not endorse many binge eating behaviors. It may be that

binge eating is not prevalent in younger populations, as most children this age continue to have a large amount of parental control and supervision over their eating behaviors.

Sixty percent of the current sample chose a figure smaller than their perceived current size, indicating that they wanted to be thinner. This figure may appear to be an accurate reflection of current obesity trends and reflect a reasonable need to be thinner, as obesity rates in the United States tend to be around 60%. However, in the current sample, only about 7% of children were in the overweight or obese range, while approximately 43% were below normal for BMI and about 51% were in the normal range for BMI. Therefore, many children in this sample wanted to be smaller than their current size despite having normal or lower than normal weight for their height.

#### *Relationship Between Gender, Body Dissatisfaction, and Eating Behaviors*

It was expected that gender differences would exist for body image dissatisfaction, restrictive eating, and binge eating behaviors. Specifically, girls were expected to show significantly greater body dissatisfaction, restrictive eating, and binge eating behaviors than were boys. This hypothesis was not supported, as there were no gender differences found. These results were surprising, as much of the research literature indicates greater body image dissatisfaction and eating disorders symptoms in girls and women than in boys and men (APA, 2000; Cooper & Fairburn, 1983; Field et al., 1999; Furnham & Calnan, 1998; Gustafsen-Larson & Terry, 1992; Lawrence & Thelen, 1995; Parkinson et al., 1998; Teinboon et al., 1994; Thompson, et al., 1997; Tiggeman & Wilson-Barrett, 1998; Wardle et al., 1995; Wood et al., 1996).

However, similar to the current study, some researchers are finding that boys and girls have comparable levels of body esteem through much of childhood (Hill et al.,

1994; Hill & Pallin, 1998; Smolak & Levine, 1994). Many of the studies that reveal gender differences were conducted with adolescents and adults. Therefore, it may be that younger children do not yet show the gender disparity in how they perceive their bodies either because they have not yet entered puberty, they are not yet aware of social pressures to be thin, or the social pressures to be thin are not yet prominent at this age. Another explanation could be that boys are beginning to internalize and feel the social pressures to be thinner as societal attitudes toward what constitutes an acceptable male figure may be changing.

Moreover, it is important to note that a lack of gender differences in this sample at this young age does not necessarily indicate that a lack of gender differences in body image dissatisfaction, restrictive eating, and binge eating behaviors will continue throughout the course of these children's lives. In fact, much of the research indicates that gender differences are more likely to emerge as children become adolescents and adults. Furthermore, it should not be assumed that because gender differences were not apparent in this study that girls and boys hold similar attitudes regarding body image or that they receive similar societal messages regarding acceptable standards for their bodies.

The research literature indicates that the age at which body image concerns develop may be decreasing. A recent increase in the number of treatment referrals for children with anorexia nervosa or related eating problems has been noted (Lask & Bryant-Waugh, 1992; Nagel & Jones, 1992). It is unclear whether the rise in child referrals reflects a true increase in eating disorders for younger populations or better detection methods (Striegel-Moore & Franko, 2002). The available measures of body esteem typically show few changes until late elementary school (Levine & Smolak, 2001;

Smolak, 2002). This is especially important to consider when looking at the EBBIT, as it is a relatively new measure of body image concerns and maladaptive eating patterns. The current study should be conducted with a larger sample that is more representative of the United States population before more conclusions can be made.

*Relationship Between Perceived Social Acceptance, Body Dissatisfaction, and Eating Behaviors*

It was hypothesized that perceived social acceptance would predict body image dissatisfaction, restrictive eating, and binge eating behaviors. This hypothesis was partially supported in that social acceptance was significantly related to body image dissatisfaction after controlling for BMI. Specifically, the relationship was negative, thus children with higher perceived social acceptance had lower body dissatisfaction scores. There was no significant relationship between social acceptance and restrictive eating or binge eating behaviors, which did not support the hypothesis. It is surprising that social acceptance did not also predict body image dissatisfaction and restrictive eating as measured by the BIDRE factor of the EBBIT. This finding may indicate that the BIDRE factor and the BISDIS (body image dissatisfaction as measured by body silhouettes) are not examining the same body image dissatisfaction constructs. The BISDIS is assessing the children's perceptions of their ideal body size versus their current body size. The BIDRE factor may be tapping more into the attitudinal factors related to body dissatisfaction.

The relationship between social acceptance and body dissatisfaction has been demonstrated in the literature, as body image concerns have been associated with parental attitudes and acceptance of children's weight and shape, peer acceptance, and peer

teasing. Specifically, parents and peers placing high importance on weight and shape and peer and sibling teasing are correlated with higher body dissatisfaction (Cash, 2002; Fabian & Thompson, 1989; Flynn & Fitzgibbon, 1996; Smolak et al., 1999; Taylor et al., 1998).

The relationship between social acceptance and body dissatisfaction emerged for this sample despite their young ages, which lends further support for studying body image concerns in young children. Initially, the investigator wondered if the lack of relationship between social acceptance and restrictive eating and binge eating behaviors was due to the young age of the sample. However, Levine and colleagues (1994) found that 40% of girls in the same age range as this sample discussed weight, shape, and dieting on a regular basis with friends. In addition, the strongest predictor of weight concerns in a sample of elementary and middle school children (similar grades as this sample) was the importance peers placed on weight and eating (Taylor et al., 1998). These social comparison behaviors could potentially be precursors to problem eating behaviors that reflect body image dissatisfaction and the relationship between social acceptance and problem eating behaviors may not be apparent at such a young age. Additionally, perhaps social acceptance in the early elementary years may be more related to only body size and not to maladaptive eating behaviors. Furthermore, the relationship between the variables may be moderated by one or more demographic variables, which was not tested in the current study.

*Relationship Between Perceived Athletic Competence, Body Dissatisfaction, and Eating Behaviors*

It was hypothesized that perceived athletic competence would predict body image dissatisfaction, restrictive eating, and binge eating behaviors. The hypothesis was not supported, as athletic competence was not related to body dissatisfaction, restrictive eating, or binge eating behavior for this sample. It was expected that athletic competence would be negatively related to body image concerns and problem eating behaviors because of the literature regarding such a relationship in athletes. Some studies have indicated that participation in sports is positively related to body satisfaction (Asci et al., 1997; Bowker et al., 2003; Bucaria, 1989; Cok, 1990; Koivula, 1999, Snider & Kivlin, 1975). Conversely, a few studies suggest that participation in athletics is a risk factor for body image concerns (Abraham, 1996; Davis, 2002; Richman & Shaffer, 2000). However, a positive relationship was not found between athletic competence and body dissatisfaction, restrictive eating, or binge eating behaviors. It should be noted that all of the studies about athletes cited in the current study were conducted with adolescents; therefore, the age of the participants in the current study may be a factor in why neither a positive nor negative relationship was found. Specifically, perhaps preadolescent children are not yet old enough to get involved in serious competitive athletics or are just beginning to do so and have not yet felt pressure to keep a certain weight to perform better. Another explanation could be that children who are athletic may not experience weight difficulty and may not have many concerns about body image or restrictive eating because of that. For instance, a meta-analysis by Smolak and colleagues (2002) found

that athletes tended to have a high drive for thinness, but not necessarily body dissatisfaction.

Furthermore, it is important to make a distinction between children who are involved in athletics and considered athletes and children who are considered “elite” athletes and involved in very serious and competitive sports that involve an evaluative component. Examples of such sports include gymnastics, ballet, wrestling, and volleyball. Many studies conducted regarding weight concerns in athletes use such elite athletes in their samples and typically find body image dissatisfaction and compensatory eating behaviors (Abraham, 1996; Davis, 2002; Richman & Shaffer, 2000).

*Relationship Between Perceived Physical Appearance, Body Dissatisfaction, and Eating Behaviors*

Perceived physical appearance was expected to predict body image dissatisfaction, restrictive eating, and binge eating behaviors. The hypothesis was partially supported, in that a significant relationship emerged between physical appearance and body image dissatisfaction. In addition, a significant relationship was found between physical appearance and restrictive eating. Specifically, the more positively children felt about their appearance, the lower their body dissatisfaction and restrictive eating scores. No significant relationship was found between perceived physical appearance and binge eating, and thus the hypothesis was not supported regarding the relationship between physical appearance and binge eating.

The results regarding perceived physical appearance as related to body dissatisfaction and restrictive eating are not surprising, as it would make sense that how one feels about his/her body is related to the perception of one’s appearance. This

relationship has been shown in the research literature, as well, particularly with regard to BMI (Cash, 2002; Sands & Wardle, 2003; Taylor et al., 1998). The results of this study indicate that even in children as young as age 9, perceptions of physical appearance are related to body dissatisfaction and restrictive eating. Typically, this relationship has been found in previous research with girls only, and this study found that there were no significant differences between boys and girls.

The absence of a relationship between perceived physical appearance and the binge eating behavior is consistent with the finding in the current study that BMI is unrelated to binge eating (as measured by the BEB factor of the EBBIT). Again, few participants endorsed binge eating behavior in this sample, and binge eating may not be prevalent in younger populations due to parent control over food and behavior.

#### *Relationship Between Perceived Global Self-Worth, Body Dissatisfaction, and Eating Behaviors*

Finally, it was hypothesized that perceived global self-worth would predict body image dissatisfaction, restrictive eating, and binge eating behavior. This hypothesis was supported. Specifically, global self-worth was negatively related to body image dissatisfaction; children with higher perceived global self-worth had lower body image dissatisfaction. In addition, global self-worth was significantly related to restrictive eating, such that children with higher perceived global self-worth endorsed fewer restrictive eating behaviors. Consistent with the literature, the results of this study indicate that global self-worth is a consistent predictor of body image dissatisfaction and problem eating behaviors.

Global self-worth is seen as a general, rather than a specific risk factor for body image disturbance and disordered eating patterns because it is also related to other psychological difficulties (Button, 1990; Hill & Pallin, 1998; Stice et al., 2000; Wichstrom, 1999). It is often the general factors (e.g., low self-esteem, poor family relations, and negative emotionality) that are cited as distinguishing between children, and more specifically girls, who have serious weight concerns and eating problems and those who are displaying weight concerns that reflect the “normative discontent” experienced by many women and girls in modern society (Leung et al., 1996; Shisslak & Crago, 2001; Shisslak et al., 1995). Although self-esteem predicted body dissatisfaction and restrictive eating in this sample, the results do not indicate whether poor self-esteem leads to problems related to body image and maladaptive eating patterns, or if poor body image leads to poor self-esteem. Longitudinal research that could determine the onset of body image concerns and self-esteem problems would be needed to investigate the directionality of this relationship.

Global self-worth was the only variable that significantly predicted binge eating behavior. Thus, children with higher perceived global self-worth were less likely to endorse binge eating behaviors. Conversely, children with lower global self-worth were more likely to endorse binge eating behaviors. Similar results were found by Kansi et al. (2003), who found that girls with lower self-esteem had higher scores for bulimia on an eating attitudes survey. Gross and Rosen (1988) also found that adolescents with bulimia in their sample had a more negative self-esteem and more depression than adolescents with no eating pathology. Furthermore, for a sample of bulimic adolescents in treatment, low self-esteem at admission was predictive of poor outcome at four-year follow-up (van

der Ham, van Strein, & van England, 1998). Thus, self-esteem appears to be an important variable related to binge-eating and bulimic symptoms.

#### *Internal Consistency of EBBIT with Preadolescent Boys*

One research question asked in this study was if the Eating Behaviors and Body Image Test (EBBIT) was reliable for use with preadolescent boys as well as girls. The EBBIT was originally constructed for use with only preadolescent girls. The results indicated that the EBBIT was a reliable measure for use with boys. However, this question should be tested in future studies to determine if the reliability is consistent across samples and with more diverse groups.

#### *Validity of EBBIT as compared with the KEDS*

A second research question was asked regarding whether the EBBIT was a valid measure as compared with the Kid's Eating Disorders Survey (KEDS). The correlation between the measures was high for the factor of the EBBIT that measures body image dissatisfaction and restrictive eating, which indicated that this factor is a valid measure of maladaptive eating behaviors and body image concerns. However, the factor of the EBBIT that measures binge eating behavior was not highly correlated with the KEDS. The KEDS includes only two questions regarding binge eating behavior, with one question asking about the approximate amount a child has ever eaten and the second question asking how many times the child had eaten that amount. During data collection, the investigator was asked several questions by the participants regarding the final two items on the KEDS, and many children did not seem to understand the questions. Therefore, the calculation of the final KEDS scores did not include the two items about bingeing. The exclusion of those two items is likely the reason why binge eating

behaviors did not correlate with the KEDS. Validity studies with the EBBIT need to be conducted with other eating disorder and body image measures for children in order to further establish its validity.

### Implications of Findings

It is apparent from the current study and the literature that body image concerns and some maladaptive eating patterns emerge even at an early age. For instance, nearly 10% of the current sample had high eating disorder scores or endorsed compensatory behaviors (e.g., taking diuretics or laxatives, vomiting after eating). In addition, 60% of the current sample wanted to be thinner than their current size even though nearly 50% were in the normal range for BMI and about 43% had BMI's lower than the normal range (i.e., may be considered underweight).

Unfortunately, these problems may emerge at even earlier ages than in the current sample. However, it is often difficult to measure body image perceptions and related constructs in younger children due to their development and understanding of abstract constructs and their own attitudes and perceptions about themselves. This study lends support for the presence of body dissatisfaction and eating behaviors that can put one at risk for an eating disorder in boys as well as in girls. The literature has focused on girls and women because prevalence rates of eating disorders are higher in female populations; however, there is evidence that prevalence rates for men are increasing. Thus, one must not assume an eating disorder or body dissatisfaction is absent or not as severe because a person is male. The increasing number of men and boys presenting with such concerns points to the importance of studying these constructs in males and developing appropriate prevention and intervention programs to meet their needs; prevention and intervention

programs developed based on research with women and girls cannot be assumed as appropriate for boys and men.

Perceived social acceptance was related to body dissatisfaction. Thus, it is important to consider one's environment and social network in order to examine the origins of body image concerns. Particularly for young children, the level of weight concern in the family and the extent to which children are teased appears to have a large impact on one's bodily perceptions and attitudes. In addition, physical appearance was related to body dissatisfaction. Society currently places great importance on physical appearance, and ways to modify one's physical appearance through exercise, diet, and plastic surgery are often topics on the news, in magazines, on the Internet, and in the research literature. Thus, physical appearance and the importance one places on it are notable variables to consider when evaluating body image concerns.

Global self-worth was the only variable to predict scores on all three constructs measured: body dissatisfaction, restrictive eating, and binge eating. Therefore, it appears that global self-worth affects many different areas related to body satisfaction and eating behaviors. Global self-worth may be an important factor to consider when creating prevention and intervention programs for children with extreme weight concerns and eating patterns. Specifically, finding ways to foster positive self-worth in children may serve as a protective factor for the development of body image and eating concerns. In addition, creating intervention programs to boost low-self esteem in addition to addressing body image and eating problems may be very important.

Finally, this study contributes to the current literature regarding body image in children. First, a relatively new measure created specifically for children, the EBBIT, was

used to assess body image and maladaptive eating patterns. The results were generally similar to results found in the literature, which lends more support for the validity of the EBBIT. Additional validity for the factor of the EBBIT that measures body image dissatisfaction and restrictive eating was shown with its high correlation to another eating disorders measure, the KEDS. In addition, the EBBIT was shown to be a reliable measure for use with preadolescent boys, which is important because the EBBIT was initially constructed for use with only preadolescent girls. Furthermore, the findings of this study were consistent with the literature in that the preadolescent girls and boys displayed concerns regarding their body image. It is unclear when young children internalize ideas about the cultural ideal for their body image and what exact combination of factors contributes to body image dissatisfaction. The onset of body image dissatisfaction and the factors related to its development are likely different for each individual.

#### Methodological Considerations

Before the future directions for research on body image are discussed, there are certain methodological issues to consider. First, the current study was cross-sectional. Therefore, global conclusions cannot be made about the implications of this study for other children. Replications of the current study as well as longitudinal research must be conducted in order to make firm conclusions.

Additionally, all measures used in this study were self-report measures completed by children. The research did not conduct research to corroborate their reports and so there is no information about the accuracy of the children's perceptions or reports of their behaviors. Because all measures were self-report, this could influence the chance of having significant correlations between variables (i.e., make it more likely significant

correlations would be found). However, as there were only eight significant correlations and ten nonsignificant correlations found for this study, it is unlikely that the results of this study were due to method variance caused by using self-report measures.

Recruitment for the current study was more difficult than expected. First, return rates from public schools were only 15%, which was much lower than the 30% or higher return rates the investigator had for similar studies in the past. It is unclear why the return rates were so low for the study. One reason the return rates were lower could be that recruitment of public school participants was conducted in rural areas of Arkansas and Kansas that do not see much research activity. Parents may have been unfamiliar with requests for children to participate in a research study and thus reticent to allow their children to participate.

Furthermore, home-schooled children were not included in the study because all attempts to recruit children who were home schooled failed. The investigator attempted numerous ways of contacting home school associations and support groups, including phone calls, emails, a newspaper ad, and flyers. These efforts were carried out over several months with no success. Per the investigator's telephone conversation with Dr. Brian Ray (personal communication, September 15, 2006) of the National Home Educators Research Institute (NHERI), the investigator learned that many parents of home-schooled children are extremely hesitant to talk with people outside of their immediate social circle and are suspicious of people who would want to collect information about them. The difficulty in recruitment with home-schooled children revealed good information about beginning research in a new area. Specifically, one must consider that there are most likely reasons why research literature is limited for certain

populations, including that data collection may be very difficult with that population. In addition, if one wants to pursue research in a particular area or with a particular population, it would be beneficial to find ways to form relationships over time so as to gain the trust and respect of those with whom data will be collected.

The results of this study may have been more conclusive had information regarding pubertal status been collected. Previous research has suggested that the onset of puberty is a risk factor for eating disorders (Koff & Reirdan, 1993; Leon et al., 1997). As body image dissatisfaction is a strong risk factor for eating disorders (Smolak, 2002; Smolak & Levine, 2001; Striegel-Moore & Franko, 2002), the relationship between pubertal status and body image dissatisfaction would be an important area to explore. Many researchers have found that pubertal weight gain and body changes affect the development of body image (Attie & Brooks-Gunn, 1989; Gralen et al., 1990; Keel et al., 1997; Killen et al., 1994; Koff & Reirdan, 1993), although others have not found this relationship (Stice, 2001; Stice, Presenell, & Bearman, 2001; Stice & Shaw, 2002). The contrary findings may be due to the effects of puberty on body image being developmentally localized to early adolescence; therefore, collection of data at any other life stage than early adolescence may lead to null findings when looking at that relationship (Stice, 2001).

As children enter puberty, body image concerns become more common. In addition, girls are more likely than boys to experience a decrease in body esteem following puberty (Abramowitz et al., 1984; Gardner et al., 1997; Gardner et al., 1999; Richards et al., 1990). Girls also enter puberty approximately two years before boys, which presents a confound in the measurement of the relationship between puberty and

body image concerns. Furthermore, Hermes and Keel (2003) found that in their ethnically diverse sample, girls in mid to late puberty had higher BMIs, body dissatisfaction, drive for thinness, and greater internalization of the thin beauty ideal than girls in early puberty or prepubertal girls. Finally, after the onset of puberty, boys tend to favor a larger body size, while girls often want a smaller body size. Accordingly, assessment of pubertal status would have been beneficial for this study to further understand gender differences and may have helped to clarify if onset of body image dissatisfaction and restrictive eating behaviors was different for children who have entered puberty versus children who are prepubertal.

#### Future Research Directions

The potential for further research in the area of body image as it relates to children is quite vast. Thus, the discussion of future research directions here will be limited to issues related directly to the present study. Much of the literature has focused on body image as a precursor to eating pathology, and has not directly investigated body dissatisfaction and its effects on functioning and quality of life. Thus, more focus in future research should be placed on the development of body image concerns. The prevalence of body image concerns is much higher than eating disorder prevalence, as noted by the many studies finding that half or more of young children would like to be thinner (Cohn et al., 1987; Fallon & Rozin, 1985; Thompson et al., 1997). In addition, eating disorders and sub-clinical eating disorder symptoms are quite rare among prepubescent children (Stein, Chalhoub, & Hodes, 1998). The greater concern about body image disturbance among children is that it might be a risk factor for the future development of eating disorders (Koff & Reirdan, 1991; Stice, 2001). Because many

young children prefer a body shape that is thinner than their current shape (as in the current study with 60% of children wanting to be thinner) or have problematic eating attitudes and behaviors (Hill et al., 1994; Rolland et al., 1997), it may be important in the future to conduct longitudinal studies for the collection of baseline information before concerns arise. Subsequently, insight could be gained into the contributing factors for body image disturbances in young children (Shisslak & Crago, 2001).

With regard to social acceptance, research should be conducted with younger age groups in order to determine at what point children internalize ideas about what is an acceptable body and from whom those ideas originate. In addition, the relationship between peer relationships and interactions and body image concerns should continue to be studied in order to evaluate the types, frequency, and quality of interactions that most contribute to body image, both positive and negative.

Additionally, research should focus on the differentiation between having a poor body image and the effect that body dissatisfaction has on one's life. For instance, some people may experience feelings of being overweight and dissatisfaction with their bodies. However, the body dissatisfaction may not affect their functioning in occupational, educational, or social settings (Cash, 2002). It is unknown whether there are maladaptive body concerns and general body dissatisfaction that do not lead to distress. A potential step in this research area is to first differentiate the types of body dissatisfaction, whether maladaptive or not, that are experienced by participants in body image research. Next, investigations should be conducted to determine the differences between those whose body image dissatisfaction negatively affects quality of life and those whose body image dissatisfaction does not affect quality of life.

Furthermore, additional studies on the EBBIT should be conducted to further test the reliability and validity of the measure. The current study revealed reliability for use of the EBBIT with preadolescent boys as well as validity of one factor of the EBBIT when compared with another eating disorder measure. More studies using the EBBIT with boys would be useful for further establishing its reliability with that population. In addition, the EBBIT should be correlated with other eating behavior and body image measures in order to prove that it is a valid measure for use with children. Furthermore, larger studies including different regions of the country and with diverse populations are needed. Finally, studies examining the factor structure with other samples may yield interesting results. For example, a study conducted by Turner et al. (2005) indicated that the EBBIT may have a 3-factor structure, including a body image dissatisfaction factor, a restrictive eating factor, and a binge eating behavior factor. However, the 2-factor structure proposed by Candy and Fee (1998a) also emerged when the structures was forced into two factors. More research regarding the factor structure of the EBBIT would be useful in determining how best to measure the constructs of the EBBIT.

Further investigation of the protective factors against the development of body dissatisfaction would be greatly beneficial for prevention efforts (Steck, Abrams, & Phelps, 2004). In addition, changes at the societal level to eliminate stereotypes against overweight individuals may help overweight people to accept their bodies and not experience high levels of body dissatisfaction (Schwartz & Brownell, 2002). Finally, there has been a recent trend in the literature to focus on the positive aspects of psychological phenomena (Seligman, 2002; Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2002). Research on body image and eating disorders should also follow this

direction (Steck et al., 2004). For example, research should focus on developing higher self-esteem in children, as high self-esteem has been found as a protective factor for risk of eating disorders (Shisslak, Crago, Reiger, & Clark-Wagner, 1998; Striegel-Moore & Cachelin, 1999). Likewise, investigation of factors that contribute to body satisfaction and the creation and maintenance of a positive body image would greatly contribute to the literature.

### Conclusions

The purpose of the present study was to examine how self-perceptions were related to body dissatisfaction and eating behaviors in preadolescent girls and boys. Gender differences in body dissatisfaction, restrictive eating, and binge eating behaviors were expected in this study. However, no significant gender differences were found, which indicates that both boys and girls should be studied with regard to their level of body image concerns. Typically, the research has focused on girls and women with regard to body image concerns and eating disorders, and further research is needed using boys and men as participants in order to determine what factors contribute to their body image concerns.

As expected, lower global self-worth led to greater body image dissatisfaction, restrictive eating, and binge eating behavior. Previous studies have shown that self-esteem is related to body image dissatisfaction and maladaptive eating behaviors. This study supports the literature, as the results showed that global self-worth accounted for a significant portion of the variance for body image dissatisfaction, restrictive eating, and binge eating behavior. Thus, self-esteem appears to play a role in the severity of maladaptive eating problems and body image satisfaction. Furthermore, perceptions of

social acceptance and physical appearance were related to body dissatisfaction as indicated in the literature. Physical appearance has been consistently found to be a predictor of body image dissatisfaction, especially when BMI has been used as a measure of physical appearance. Perceived athletic competence was unrelated to body dissatisfaction and maladaptive eating behaviors in this sample, which may indicate that this relationship does not appear until adolescence or that young athletes may not feel dissatisfied with their bodies.

The current study provides further validation of the EBBIT as compared to another measure of eating disturbance, which is important because the EBBIT is a relatively new measure in the literature. In addition, this study may have important implications for treatment of eating disorders in that global self-worth may be an important factor to assess for children at risk for eating disorders, and treatment programs may benefit from including an emphasis on global self-worth. Furthermore, the current study offers validation of the findings that problems with body dissatisfaction and self-esteem are apparent at young ages. The elementary school years may present an opportunity to stop these problems before they lead to more severe pathology, such as eating disorders (Smolak, 1999; Smolak & Levine, 1996).

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## APPENDICES

APPENDIX A

Demographic Information Form

## Demographic Information Form

Please answer all questions honestly. All information on this form will be kept confidential. Your cooperation is greatly appreciated and will help us out a great deal.

1. Child's Age \_\_\_\_\_
2. Child's Grade \_\_\_\_\_
3. My child is a (circle one):  
Boy                  Girl
4. I consider my child to be \_\_\_\_\_ ? (Please circle one)  
African American/Black  
Native American  
Asian/Pacific Islander  
Hispanic  
Caucasian  
Other (please specify) \_\_\_\_\_
5. Does your child have any medical problems that would cause him/her to eat certain foods? (Please circle one)  
No                  Yes  
If yes, please list \_\_\_\_\_
6. Does your family have a special diet (e.g., vegetarian, vegan, diabetic)? (Please circle one)  
No                  Yes  
If yes, what is it? \_\_\_\_\_
7. What is your estimated household income per year? (please leave blank if desired)  
\$0 to \$9999      \$10000 to \$24999      \$25000 to \$49999      \$50000 and above
8. How many people are dependent on the above income? \_\_\_\_\_
9. Do you consider yourself to be religious? (Please circle one)  
No                  Yes  
If yes, what is your religious affiliation? \_\_\_\_\_

10. Which statement best describes your child? (Please circle one)

My child attends public school

My child is home-schooled

11. About how much time per day does your child spend in classroom activities and/or educational activities at home? \_\_\_\_\_hours

12. If your child is home-schooled, why did you decide to home-school your child?

13. Does your child have any developmental disabilities or special needs for which he/she requires special services or accommodations (whether provided by the school system or otherwise)?

Yes

No

If Yes, Please explain:

APPENDIX B

The Eating Behaviors and Body Image Test (EBBIT)  
for Preadolescent Girls

EBBIT

Circle the best answer below

	<b>3</b> <b>Most of the</b> <b>time</b> Everyday)	<b>2</b> <b>Often</b> (Once a week)	<b>1</b> <b>Rarely</b> (Once a month)	<b>0</b> <b>Never</b> (Never)
<b>Example:</b> I eat a lot when I watch T.V.	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
1. I diet (to lose weight by eating less than normal) like my friends do	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
2. My current weight bothers me	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
3. I eat a lot of food all at once	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
4. I try not t eat even when I am hungry	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
5. I wish I was thinner	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
6. I do not eat junk food or “fatty” food because I want to lose weight	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
7. I try to lose weight by dieting	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
8. I eat when I feel mad	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
9. I collect food in my room and sometimes I eat it all at once	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
10. I think I am fat	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
11. I make myself throw up after eating	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
12. I think I weigh more than most kids my age and height	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
13. I eat what I want, when I want	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
14. I eat until my stomach feels uncomfortable	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
15. I worry about gaining weight	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
16. I eat all of my Halloween candy at once	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
17. I take diet pills to lose weight	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
18. I feel really bad after I eat a lot of food	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
19. I skip meals to lose weight.	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
20. I feel hungry when I am not eating	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
21. I like my stomach to feel empty	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>

	<b>Most of the time Everyday)</b>	<b>Often (Once a week)</b>	<u>Rarely</u> (Once a month)	<u>Never</u> (Never)
22. I eat junk food alone in my room so no one sees what I am eating	3	2	1	0
23. I take laxatives to lose weight	3	2	1	0
24. I feel fat	3	2	1	0
25. I feel really bad after I eat a lot of junk food, so I think about how to get rid of what I just ate	3	2	1	0
26. I eat a lot of food sometimes when I am not very hungry	3	2	1	0
27. I worry that if I eat, I might gain weight	3	2	1	0
28. I look at food labels to see the calories and fat content	3	2	1	0
29. After I eat a lot of food at one time, I try to skip the next meal or the next two meals	3	2	1	0
30. I would eat 10 candy bars at once if my parents would let me	3	2	1	0
31. I sometimes sneak food	3	2	1	0
32. I try not to eat food with a lot of fat	3	2	1	0
33. I look at the fat on my body and wish that it was not there	3	2	1	0
34. I eat when I feel sad	3	2	1	0
35. I eat when I feel bored	3	2	1	0
36. I take diuretics to lose weight	3	2	1	0
37. I exercise to burn off the food I eat	3	2	1	0
38. I diet like my mother or sister does	3	2	1	0
39. There are some foods I would eat way too much of if I had the chance	3	2	1	0
40. I think about food a lot when I'm not eating	3	2	1	0
41. I drink diet soda instead of eating meals or snacks	3	2	1	0
42. I do not eat dessert (cake, ice cream, cookies) because I want to lose weight	3	2	1	0
43. I try to lose weight like my father does	3	2	1	0

## APPENDIX C

### The Kids Eating Disorders Survey (KEDS)

## KEDS

Circle the best answer below. If you are not sure, circle the question mark.

- |   |     |    |   |
|---|-----|----|---|
| 1. Do you want to lose weight now?  | Yes | No | ? |
| 2. Have you <i>ever</i> thought that you looked fat to other people?  | Yes | No | ? |
| 3. Have you <i>ever</i> been afraid to eat because you thought you would gain weight?   | Yes | No | ? |
| 4. Have you <i>ever</i> tried to lose weight by <i>dieting</i> ? (Dieting means eating at least some food, but less than you usually eat) | Yes | No | ? |
| 5. Have you <i>ever</i> tried to lose weight by <i>fasting</i> ? (Fasting means eating no solid food for at least 24 hours)               | Yes | No | ? |
| 6. Have you ever made yourself throw up (vomit) to lose weight?   | Yes | No | ? |
| 7. Have you ever exercised a lot to lose weight? (A lot means more than one hour a day every day.)  | Yes | No | ? |
| 8. Have you ever taken diet pills to lose weight?   | Yes | No | ? |
| 9. Have you ever taken diuretics or water pills to lose weight?   | Yes | No | ? |
| 10. Have you ever taken laxatives to lose weight?   | Yes | No | ? |

**11. Circle the best example below that is similar to the largest amount of food you have ever eaten in less than two hours (even if you did not eat exactly the same foods.)**

Example 1: Less food than in Example 2.

Example 2: Two doughnuts and a cup of ice cream and two cookies.

Example 3: Four doughnuts and a pint of ice cream and five cookies.

Example 4: Six doughnuts and a quart of ice cream and ten cookies.

Example 5: Eight doughnuts and a half gallon of ice cream and fifteen cookies.

Example 6: More food than in Example 5.

12. How many times have you ever eaten the amount of food you circled above?

1 or 2 times

3 to 12 times

13 to 24 times

25 to 50 times

More than 50 times

## APPENDIX D

### Body Image Silhouettes (BIS)

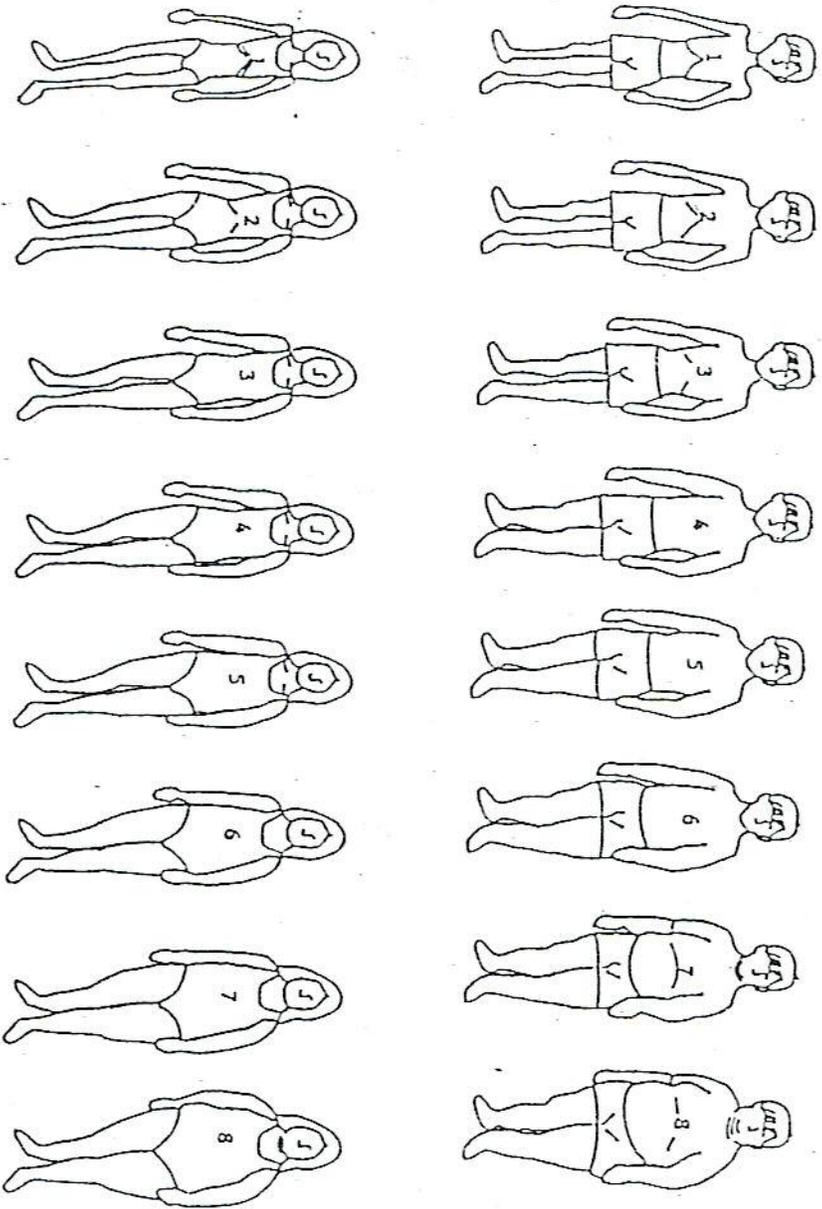


FIG. 3. Instructions: "Circle the drawing that most looks like you, then underline the drawing you would most like to look like."

## APPENDIX E

### Self-Perception Profile for Children (SPPC)

Copyrighted Material  
Cannot Be Reproduced Here

APPENDIX F  
Superintendent Letter

Dear Superintendent:

My name is Andrea Kinlen, and I am a graduate student from Oklahoma State University currently working on my dissertation project to complete my doctoral degree in psychology. My advisor and I are interested in conducting research using rating scales to understand children's attitudes about eating, body image, and self-esteem. We are seeking permission from you to recruit children in grades 4-6 in your schools to assist us with this task by allowing us to administer these measures. For those children whose parents consent and who would like to participate, we would like to work with the children in small groups for approximately forty-five minutes **one time only**. We hope to work with teachers to find a time convenient for them and that will not interfere with academic activities.

Attached you will find a brief description of this project, which has been approved by the Oklahoma State University Institutional Review Board. We are currently asking your assistance and permission for the administration of these rating scales. Please note that we will be gaining permission from each principal within your school district before pursuing research at their respective schools. For those children whose parents consent and who choose to participate, an identification number will be assigned to all students and identifying information about the children will be kept separately and in a secure location. **Participation will be on a completely voluntary basis for both parents and children.**

Please contact me at 620-200-5069 if you have any questions or would like any additional information. For additional information regarding human participation in research, please feel free to contact the OSU Office of University Research Compliance at 405-744-5700. We appreciate your taking the time to read this proposal and look forward to discussing the proposal with you further. If you are willing to help us, please sign below and return this letter in the enclosed envelope. I will be calling to follow-up with you soon regarding this proposal should you have any questions.

Sincerely,

Andrea D. Turner Kinlen, M.S.  
Doctoral Student  
Oklahoma State University

Melanie C. Page, Ph.D.  
Associate Professor  
Oklahoma State University

---

I, \_\_\_\_\_, Superintendent of the \_\_\_\_\_ School District, provide permission to Andrea Kinlen, Dr. Page, and their supervised research assistants to work on the aforementioned project within our school system.

---

(signature)

---

(date)

APPENDIX G

Principal Letter

Dear Principal:

My name is Andrea Kinlen, and I am a graduate student from Oklahoma State University currently working on my dissertation project to complete my doctoral degree in psychology. My advisor and I are interested in conducting research using rating scales to understand children's attitudes about eating, body image, and self-esteem. We are seeking permission from you to recruit children in grades 4-6 in your school to assist us with this task by allowing us to administer these measures. For those children whose parents consent and who would like to participate, we would like to work with the children in small groups for approximately forty-five minutes **one time only**. We hope to work with teachers to find a time convenient for them and that will not interfere with academic activities.

Attached you will find a brief description of this project, which has been approved by the Oklahoma State University Institutional Review Board. We are currently asking your assistance and permission for the administration of these rating scales. For those children whose parents consent and who choose to participate, an identification number will be assigned to all students and identifying information about the children will be kept separately and in a secure location. **Participation will be on a completely voluntary basis for both parents and children.**

Please contact me at 620-200-5069 if you have any questions or would like any additional information. For additional information regarding human participation in research, please feel free to contact the OSU Office of University Research Compliance at 405-744-5700. We appreciate your taking the time to read this proposal and look forward to discussing the proposal with you further. If you are willing to help us, please sign below and return this letter in the enclosed envelope. I will be calling to follow-up with you soon regarding this proposal should you have any questions.

Sincerely,

Andrea D. Turner Kinlen, M.S.  
Doctoral Student  
Oklahoma State University

Melanie C. Page, Ph.D.  
Associate Professor  
Oklahoma State University

---

I, \_\_\_\_\_, Principal of the \_\_\_\_\_ School,  
provide permission to Andrea Kinlen, Dr. Page, and their supervised research assistants to work  
on the aforementioned project within our school.

---

(signature)

---

(date)

APPENDIX H  
Parent Consent Form

Consent Form - An Analysis of the Relationship between Self-Perceptions and Body Image in Preadolescent Girls and Boys

I, \_\_\_\_\_, hereby authorize and direct Andrea Turner, M.S., who is under the supervision of Melanie Page, Ph.D. in the Department of Psychology at Oklahoma State University, to perform the procedures listed here:

**Purpose:** This study is designed to examine the relationship between self-perceptions and eating behaviors/body image in preadolescent girls and boys.

**Procedures:** Your child's participation in this study will include filling out 4 surveys and taking height and weight measurements (your child will not see these measurements). **The questions asked pertain to eating habits and behaviors related to dieting, feelings of self worth and competence in school, athletics, and in general, and satisfaction with his/her body size.** Some of the questions asked might be personal and your child will be told he/she can skip any questions that he/she does not wish to answer. Also, your child's participation is voluntary and he/she will be told he/she may stop at any time without penalty. Your child will receive a small prize and be entered into a drawing for a \$20 gift card for his/her participation.

**Duration of Participation:** This study will take place at a pre-approved location at a time that is most convenient for your child's schedule. The study will take approximately 45 minutes of your child's time.

**Confidentiality:** All questionnaires will be identified by a numerical subject number which will be assigned after your child has turned them in to the experimenter. They will NOT be associated with his/her name in any way. This form will be kept, along with a list of participants, in a locked file cabinet in 316 North Murray at Oklahoma State University until they are no longer necessary. **If we have a concern about your child's answers, we will inform you of that concern at the end of your child's session if you are present or by phone if you are not with him/her. When we contact you, we will give you information on potential community resources. After all research is complete, the list of participants and consent forms will be shredded and discarded. The data will be stored for 5 years. No individual data will be reported and only averages will be reported.**

This study has been approved by the Institutional Review Board of Oklahoma State University. You may contact Melanie Page at the following address should you wish further information about the study:

215 N. Murray  
Department of Psychology  
Oklahoma State University  
Stillwater, OK 74078  
(405) 744-7334

Sue Jacobs, IRB Chair  
or 219 Cordell North  
Oklahoma State University  
Stillwater, OK 74078  
(405) 744-11676

I have read the above consent form and fully understand what it entails. I sign it freely and voluntarily. A copy has been given to me. I hereby give permission for my daughter's participation.

\_\_\_\_\_  
Signature of Parent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Time

Phone: \_\_\_\_\_  
(to contact you if concerned about child)

Child's Name \_\_\_\_\_

APPENDIX I  
Child Assent Form

## **CHILD ASSENT FORM – HOW YOU FEEL ABOUT YOURSELF**

Your parent/guardian said it would be OK for me to ask you some questions about your eating habits and how you feel about yourself. I will ask you questions about how much you eat, do you diet, and are you happy with yourself. We will also measure your height and weight. No one but the researchers on the project will see your answers and your answers will be kept locked up. **The only time we would tell your parents/guardians about your answers is if we are worried about you – we would not tell anyone else about your answers.** If there are some questions you do not wish to answer, that is OK and if you want to stop answering questions at any time, that would be OK – just tell me and we will stop. This will take about an hour and you will receive a small prize and be entered into a drawing to win a \$20 gift card. You will receive the prize and be entered into the drawing even if you decide you do not want to answer questions or if you decide you want to stop. If you want to answer these types of questions, please sign below.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

APPENDIX J

Letter & Instructions to Teachers

Dear Teachers,

In order to understand the attitudes about eating, body image, and self-esteem in children, we are conducting a project at Oklahoma State University. We are seeking the assistance of teachers of grades 4-6.

We have received permission from your Superintendent and Principal for this project. At this time we are asking for your help by sending parent consent forms home with the children in your class. Once we have parent consent, we would ask you to allow us to administer rating scales (approximately 45 minutes) and to privately take each child's weight and height in a location outside of the classroom (e.g., the library or an empty classroom). All information gained will be kept confidential by assigning students identification numbers.

We understand and appreciate how busy teachers are. Thus, we will make every effort to work out a time that is at your convenience. If you are willing to allow us to conduct this project with the students in your classroom, please sign below and return this form to your principal.

Your assistance with this project would be greatly appreciated. Should you have any questions or concerns, please feel free to contact Andrea Kinlen at 620-200-5069. For additional information regarding human participation in research, please feel free to contact the OSU Office of University Research Compliance at 405-744-5700. We thank you for taking the time to read this letter and look forward to working with you.

Sincerely,

Andrea D. Turner Kinlen, M.S.  
Doctoral Student  
Oklahoma State University

Melanie C. Page, Ph.D.  
Associate Professor  
Oklahoma State University

---

I, \_\_\_\_\_, Teacher at the \_\_\_\_\_ School,  
provide permission to Andrea Kinlen, Dr. Page, and their supervised research assistants to work  
on the aforementioned project with students in my classroom.

---

(signature)

---

(date)

Directions for Teachers:

Please send a consent letter home with each child in your classroom. On the consent form, parents are instructed to send the signed form back to you in the envelope provided. Once the children have returned their forms to you, I would appreciate your returning the envelopes to the \_\_\_\_\_ for me to collect. I will be contacting you soon in order to determine a time convenient for you and your students to conduct this project.

Thank you again for your assistance. Your participation in this project is helping me out a great deal in reaching my goal of earning my degree.

Sincerely,

Andrea D. Turner Kinlen, M.S.  
Doctoral Student  
Oklahoma State University

APPENDIX K

Newspaper Advertisement

## Newspaper Ad

Are Your Kids Home-schooled? Give your 9 to 12-year-old the opportunity to win a \$20 gift card by participating in a study about body image and self-perceptions. Study conducted by a graduate student and has been approved by the Oklahoma State University IRB. Email [home\\_school\\_study@yahoo.com](mailto:home_school_study@yahoo.com) or call 620-200-5069 if interested.

APPENDIX L  
Recruitment Flyer

# Do You Home-School Your Children?

Please Help!

Children Ages 9-12 Years Are Needed to Participate in a Research Study About How They Feel About Themselves.

Your Child Will Be Entered To Win a \$20 Gift Card for Only About 1 Hour of Completing Questionnaires. Location of Study Will Be Set At a Time Convenient for Each Child and at a Public Location, such as the Public Library.

The Study is Conducted by a Doctoral Graduate Student from Oklahoma State University and Has Been Approved by the Oklahoma State University Institutional Review Board.

If Interested, Please call 620-245-5000 or email [home\\_school\\_study@yahoo.com](mailto:home_school_study@yahoo.com)

APPENDIX M  
Community Referral Sheet

Dear Parent:

As part of your child's participation in our study, he/she endorsed some items that were of concern to us. The behaviors that your child said "yes" to include the following:

- \_\_\_\_\_ taking diuretics to lose weight
- \_\_\_\_\_ taking laxatives to lose weight
- \_\_\_\_\_ taking diet pills to lose weight
- \_\_\_\_\_ vomiting after eating to get rid of food

Saying "yes" to one or more of these items may indicate that your child is engaging in problem eating behaviors and may be developing an eating disorder. If you are also concerned about your child's answers, we recommend first talking with your child to be sure he/she meant to say "yes" to these items. We realize sometimes people make mistakes in marking their answers. If you are still concerned after talking with your child, the following is a list of resources that may be able to answer questions and provide information for getting help for your child in your area:

<http://www.something-fishy.org/treatmentfinder>

Internet search site for finding treatment and support for various problems

858-481-1515

National Eating Disorder Referral and Information Center

International treatment referrals and prevention information

[edreferral@edreferral.com](mailto:edreferral@edreferral.com)

1-800-931-2237

National Eating Disorders Association

International treatment referrals and information

847-831-3438

Anorexia Nervosa and Associate Disorders (ANAD)

Referrals to treatment and information

1-800-RENFREW (1-800-736-3739)

The Renfrew Center

Referrals to Eating Disorder specialists (US and Canada)

1-800-841-1515

Rader Programs

Referrals to Eating Disorder specialists (US & Canada)

314-588-1683

Bulimia and Self-Help Hotline

24-hour crisis line

1-800-969-NMHA (1-800-969-6642)

The National Mental Health Association Information Center

...will put you in touch with your local Mental Health Association, who will help you find community mental health services and self-help support groups

APPENDIX N  
IRB Approval Form

Date: Wednesday, June 01, 2005  
IRB Application No AS0566  
Proposal Title: Self-Perceptions and Body Image of Preadolescent Boys and Girls

Reviewed and Processed as: Expedited (Spec Pop)

**Status Recommended by Reviewer(s): Approved Protocol Expires: 5/31/2006**

Principal Investigator(s)

Melanie Page  
215 N. Murray  
Stillwater, OK 74078

Andrea Turner  
215 N. Murray  
Stillwater, OK 74078

---

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, emct@okstate.edu).

Sincerely,



Sue C. Jacobs, Chair  
Institutional Review Board

VITA

Andrea Dawn Kinlen

Candidate for the Degree of

Doctor of Philosophy

Thesis: SELF-ESTEEM AND BODY IMAGE IN PREADOLESCENT GIRLS AND BOYS

Major Field: Clinical Psychology

Biographical:

Personal Data: Currently live in Hutchinson, KS with my husband. I work for Prairie View, Inc. in McPherson, KS as a Master's level psychologist.

Education: BS-Psychology, Mississippi State 1998; MS-Psychology, Mississippi State 2000; MS-Psychology, Oklahoma State 2004

Experience: Pre-doctoral Internship with Wichita Collaborative Psychology Internship Program, 2005-2006

Professional Memberships: American Psychological Association

Name: Andrea Dawn Kinlen

Date of Degree: December, 2006

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: SELF-PERCEPTIONS AND BODY IMAGE OF PREADOLESCENT  
GIRLS AND BOYS

Pages in Study: 135

Candidate for the Degree of Doctor of Philosophy

Major Field: Clinical Psychology

Scope and Method of Study: The literature reviewed reveals that body dissatisfaction and weight concerns are experienced by some preadolescent children. Studies in this area also suggest that self-perceptions may influence body image concerns and the development of eating disorders. Therefore, in order to provide further evidence of the association of self-perceptions to body image and eating problems, the purpose of the present study was to assess the relationship of self-perceptions to body image dissatisfaction and eating behaviors in preadolescent boys and girls. Seventy-five children from public schools were recruited, with 64% of the sample girls and 36% of the sample boys. The majority of the sample was Caucasian. Children were administered two body image and eating disorder rating scales and asked to complete a figure drawing task to measure body dissatisfaction. In addition, children completed a self-perception rating scale and were weighed and measured.

Findings and Conclusions: Overall, self-perceptions contributed to the variance in body image concerns. Perceptions of social acceptance were related to body dissatisfaction but not to the restrictive eating or binge eating when controlling for BMI. Physical appearance and global self-worth accounted for a significant part of the variance above and beyond BMI for body dissatisfaction and restrictive eating. Global self-worth was the only factor to account for a significant part of the variance for body dissatisfaction, restrictive eating, and binge eating. Athletic competence did not account for a significant portion of the variance for any of the variables of interest. No significant gender differences were found for body dissatisfaction, restrictive eating, or binge eating. The Eating Behaviors and Body Image Test (EBBIT), which was previously created for use with preadolescent girls, was shown to have good internal consistency for use with boys. The body image dissatisfaction/restrictive eating factor of the EBBIT was shown to be a valid measure when compared to another eating disorders measure for children.. This lends support for the use of the EBBIT as a reliable and valid measure for assessing body image concerns and eating behaviors in children. The findings point to the use of self-esteem and self-perceptions in assessment, treatment, and prevention of body image concerns and eating disorders.

ADVISER'S APPROVAL: Melanie C. Page, Ph.D.

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