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Attitudes and Behavioral Intentions of Eighth-Grade Students Toward Figures of Varying Body Weight

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ATTITUDES AND BEHAVIORAL INTENTIONS OF EIGHTH-GRADE STUDENTS
TOWARD FIGURES OF VARYING BODY WEIGHT

by

Erin L. McLeary

A thesis submitted in partial fulfillment
of the requirements for the degree

of

EDUCATIONAL SPECIALIST

in

Psychology

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2014

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ABSTRACT

Attitudes and Behavioral Intentions of Eighth-Grade Students Toward Figures of
Varying Body Weight

by

Erin L. McLeary, Educational Specialist

Utah State University, 2014

Major Professor: Gretchen Peacock, Ph.D.
Department: Psychology

This study examined attitudes and behavioral intentions of eight-grade students toward figures (representing hypothetical peers) of varying body weight (average, overweight, and obese). The primary aim of this study was to investigate how weight impacts students' attitudes toward and interactions with peers. Second, impact of the rater's gender was explored. It was hypothesized that girls would rate average-weight figures more positively than overweight figures and overweight figures more positively than obese figures. It was also hypothesized that boys would rate average-weight figures more positively than overweight and obese figures, with less discrepancy between their ratings of overweight and obese figures. One-hundred seventy primarily Caucasian, eight-grade students (72 male, 98 female; mean age = 13.61, $SD = .49$) were identified as part of a convenience sample from a public elementary school and were randomly assigned to view a target photo of their same gender in one of three conditions: average-

weight, overweight, obese. Participants rated attitudes toward the figures on the Adjective Checklist and behavioral intentions on the Shared Activity Questionnaire-B (SAQ-B). Results showed the hypotheses to be partially supported. Students' responses on the SAQ-B showed they were statistically significantly more willing to interact with an overweight peer ($M = 16.33$, $SD = 4.19$) than an obese peer ($M = 14.30$, $SD = 3.83$) for active-recreational activities. The overall effect size (males and females combined) was moderate (.51), with a small effect size for females (.42) and a moderate effect size for males (.64). There were no other statistically significant differences on the SAQ-B subscales of active-recreational, academic, and social, or on the Adjective Checklist. Although differences were not significant, effect sizes for social domain for average versus obese and overweight versus obese were mostly small to medium. Conversely, almost all effect sizes for academic were nonmeaningful. Therefore, it appears weight has less impact in academic interactions than the other two areas. Effect sizes were larger for males than females for overweight versus obese on the Adjective Checklist and SAQ-B social and active recreational, showing that males tended to hold more negative views of obesity than females in these areas.

(73 pages)

PUBLIC ABSTRACT

Attitudes and Behavioral Intentions of Eighth-Grade Students Toward Figures of Varying Body Weight

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Erin L. McLeary, Educational Specialist

Utah State University, 2014

The current study examined attitudes toward and willingness to interact of 8th grade students toward their peers based on peer weight status. One-hundred-seventy primarily Caucasian, eighth-grade students (72 male, 98 female) from a public elementary school viewed a picture of a potential peer who was either average weight, overweight, or obese. After viewing the figure, participants completed The Adjective Checklist and The Shared Activity Questionnaire-B (SAQ-B). The Adjective Checklist measured attitudes toward obesity and the SAQ-B measured how they would interact with the potential peer in general social, academic, and active recreational situations. It was hypothesized that girls would rate average-weight figures more positively than overweight figures and overweight figures more positively than obese figures. It was also hypothesized that boys would rate average-weight figures more positively than overweight and obese figures, but without a significant difference between their ratings of the overweight and obese figures. Students' responses on the SAQ-B showed that they were significantly more willing to interact with an overweight peer than an obese peer in active-recreational situations. For overweight versus obese in the active-recreational domain, analyses also showed that there was a moderate effect overall (boys and girls combined) on responses, with small effects for girls and moderate effects for boys. Although there were no other statistically significant results effect sizes for the social and active recreational domains for average versus obese and overweight versus obese were almost all small to medium, whereas almost all effect sizes for academic were nonmeaningful. Therefore, it appears weight has less impact in academic interactions than the other two areas. Effect sizes were larger for males than females for overweight versus obese on the Adjective Checklist and SAQ-B social and active recreational, showing that males tended to hold more negative views of obesity than females in these areas.

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CHAPTER I

INTRODUCTION

Obesity is a growing epidemic with its prevalence among children and adolescents almost tripling since 1980. Approximately 17% (or 12.5 million) of U.S. children and adolescents aged 2-19 years are obese (Centers for Disease Control and Prevention [CDC], 2013). Up until 2000, national obesity prevalence was on a clear and consistent rise. However, in the U.S. between 1999-2000 and 2007-2008, the only significant increase was seen in the highest BMI cut-off point for 6- to 19-year-old males. There was no change in obesity prevalence between 2007-2008 and 2009-2010. However trends in obesity prevalence between 1999-2000 and 2009-2010 among children and adolescents aged 2-19 years showed significant increases among males but not females (CDC, 2013).

Although Utah has a lower percentage of obese adolescents than the U.S. average, the percentage for grades 9-12 was significantly higher in 2011 (8.6%) than in 1999 (5.4%), an increase of 63% (Utah Department of Health, 2012). In Utah in 2011, 7.5% of adolescents (grades 8, 10, and 12) were obese with boys (9.5%) being 1.8 times more likely to be obese than girls (5.4%; Utah Department of Health, 2012). In terms of obese and overweight youth combined, rates in Utah in 2012 (20.8%) were similar to 2010 (20.4%). In 2012, more boys were overweight or obese than girls in every grade and overall a significantly higher percentage of males (11.4%) than females (7.5%) were obese (Utah Department of Health, 2012). Although increases may be leveling off, obesity remains a health threat to the nation's youth and is considered "one of the most

stigmatizing and least socially acceptable conditions in childhood” with respect to psychosocial outcomes (Schwimmer, Burwinkle, & Varni, 2003, p. 1818).

Given that obesity has become so widespread, increasing attention is being focused on exploring how weight status plays a role in how children are viewed and treated by their peers. Overweight stigma has been assessed in a number of ways. Several researchers have shown children figures ranging from skinny to fat and asked them to judge the figures in terms of descriptors that are provided (Bell & Morgan, 2000; Brylinsky & Moore, 1994; Cramer & Steinwert, 1998; Hill & Silver, 1995; Kraig & Keel, 2001; Musher-Eizenman, Holub, Miller, Goldstein, & Edwards-Leeper, 2004; Staffieri, 1967, 1972; Tillman, Kehle, Bray, Chafouleas, & Grigerick, 2007). Other studies have asked children to pick adjectives from a list that they feel are suitable descriptors for each target figure. Results from earlier studies by Staffieri (1967, 1972) indicated that adjectives assigned to an overweight body type from a list were primarily unfavorable, for example: cheats, fights, argues, lazy ugly and mean. On the other hand, adjectives assigned to an average body type were all favorable: neat, smart, good-looking, happy, helps others, and has a lot of friends. The thin body type was labeled with adjectives portraying a socially submissive and socially withdrawn individual. In general, these results have remained consistent in the literature.

Children have also been asked to pick from two opposing adjectives to represent a given figure (i.e., nice versus mean). More nice responses were given to the thin figure than to the overweight figure (Cramer & Steinwert, 1998; Tillman et al., 2007). However, this assessment method is limiting. Participants were not afforded the opportunity to say

that neither “nice” nor “mean” applied, or that there was not enough information to make a judgment.

Other researchers have applied a non-forced-choice methodology in an effort to understand these commonly held stigmatizing attitudes toward overweight and obese individuals (Brylinsky & Moore, 1994; Hill & Silver, 1995; Kraig & Keel, 2001; Musher-Eizenman et al., 2004). Such studies have asked how much an attribute/adjective describes the target figure through use of a Likert scale rating, or have presented the polar opposite adjectives on a continuum, asking if the target figure is one, the other, or somewhere in between. Some examples of the adjective pairs Brylinsky and Moore presented to participants include: quiet/loud, brave/afraid, many friends/few friends, works hard/lazy, happy/sad, and so forth. Children rated the target figure on a continuum rather than being forced to assign and attribute to a body type. This and other studies showed negative stigma to be associated with heavier body types in comparison to average and thin (Hill & Silver, 1995; Kraig & Keel, 2001; Musher-Eizenman et al., 2004) and average body types (Kraig & Keel, 2001; Musher-Eizenman et al., 2004). In addition, it was found that body mass index (BMI) of the rater had limited influence on ratings (Hill & Silver, 1995; Kraig & Keel, 2001) and the more the rater believed the target figure had control over his/her weight, they were less likely to rate the figure positively (Musher-Eizenman et al., 2004).

Just as the previously noted researchers have applied a non-forced-choice format with attributes, others have applied this method to explore to what degree various body types are liked or disliked by children (Cohen, Budesheim, & MacDonald, 1997; Cohen,

Klesges, Summerville, & Meyers, 1989). In assessing liking, Cohen and colleagues (1989) found that when judging other children, elementary school students viewed weight as a less considerable factor as age increased. Cohen and colleagues (1997) found that liking was more impacted by behavior than weight. In addition, results suggest that participants may respond in a socially desirable way, as boys stated that their evaluations are not influenced by weight but others' are. However, these results contradict findings using different methodology that convey weight is an important factor influencing attitudes more negatively as age increases. These conflicting findings and possible socially desirable response styles make it difficult to ascertain the role that stigmatization plays in peer interaction.

Researchers have also examined weight stigma using sociometric techniques. Cohen and colleagues (1989) found that weight had no effect on "dislike" nominations; rather sex of both the rater and rated peer had a noteworthy influence. This is illustrated by the apparent cross gender stigmatization among females in all grades and males in fifth grade. In these groups, children rated children of the same gender more favorably regardless of weight. On the other hand, from sociometric data Staffieri (1967) found that subjects with average body type were much better liked in comparison to their overweight peers; however all participants in this study were male.

Some researchers have asked children to rank pictures of healthy children, obese children, and children with disabilities (Latner, Simmonds, Rosewall, & Stunkard, 2007; Latner & Stunkard, 2003; Richardson, Goodman, Hastorf, & Downburst, 1961). In a replication of Richardson and colleagues' study, Latner and Stunkard found that when

asked to choose which figure they liked best, second best, third best, and so on, children rated the healthy child highest and the obese child lowest, with children with disabilities in the middle. Results indicated that stigmatization had increased in severity since 1961 with the highest ranked children in the 2003 study being rated more highly and the lowest ranked being rated more poorly in comparison to ratings in 1961. In addition, results showed larger discrepancies between the most well liked and second most well liked as well as between the least well liked and the second least well liked, further indicating and increase in stigmatization. Considering that childhood obesity is on the rise, one might expect that increased exposure would lead to more tolerance, making this an interesting finding. Another interesting finding of Latner and Stunkard is that girls ranked aesthetic impairments (facially disfigured, obese) worse while boys ranked physical impairments (no left hand, in a wheelchair) worse.

There have been a number of criticisms regarding the methodology employed in this area of research. A standardized way of depicting overweight and obese children has not been established, which complicates the ability to draw conclusions and compare results from one study to another. Studies that have used vignettes and stories to describe target children require that the character's body size be explicitly stated. Overtly stating this detail may imply to the raters that it is an important factor in their evaluation of the character and thus inadvertently affecting their responses. To avoid the explicit statement of body size, researchers have utilized the presentation of target pictures. However, some have criticized the use of line drawings because of their limited realism. The less that target figures resemble real life figures, the less generalizable the findings (Hill & Silver,

1995). Latner and colleagues (2007) sought to combat this drawback by constructing computer generated target figures for updated appearance and increased realism. The updated target pictures were rated more favorably in comparison to previously used pictures, implying more tolerance for the new, and more realistic looking, figures. This exemplifies the importance of greater realism given that it may have influenced participants' responses. Even greater realism has been utilized by Bell and Morgan (2000) through the presentation of target figures via video. They utilized the same children for average weight and overweight conditions but had the child wear a "fat suit" in the overweight condition. The children (one male, one female) were coached to use the "same affect, mannerisms, and voice tone for each condition" (p. 139), wearing or not wearing the fat-suit. Results showed that in terms of traits, as measured by the Adjective Checklist, the average weight child was rated significantly more positively than the obese child with a significant obesity by gender interaction. Boys rated the average-weight child more favorably than the obese child. There were no significant differences for girls between figures. There was a main effect for age, with younger children giving more positive ratings than older children. For the SAQ-B Total score there were main effects for age and gender, with younger children and girls generally showing more positive behavioral intentions. An interaction between gender of the rater and gender of the target showed that more positive behavioral intentions were shown for the participant's own gender. The same main effects for age and gender that were found for the Total score were also found for the activity area scores (academic, social, and active recreational). There was a significant interaction between obesity condition and age with a significant

effect for Recreational. Younger children were less willing to engage in recreational activities with a child in the obese condition than the average-weight child.

Regardless of the benefit of added realism, another limitation of many studies is the forced-choice format for collecting data. The forced-choice format requires participants to assign an attribute to a body type regardless of whether it seems to be relevant or not.

The purpose of this study was to assess attitudes toward differing body builds by evaluating how much children commit to interacting with their peers in different settings. This method allowed the issue to be assessed from a contextual perspective by assessing behavioral intentions in academic, recreational, and social settings in a non-forced choice format. This was accomplished by presenting a picture of an average weight, overweight, or obese target figure to 8th grade students and asking them to assign adjectives to the target figure as well as answer questions pertaining to their willingness to engage in activities with the pictured child.

The research question asked in this study was, “Do gender of rater and weight of figures impact ratings”? It was hypothesized that girls would rate average-weight figures more positively than overweight figures and overweight figures more positively than obese figures. It was also hypothesized that boys would rate average-weight figures more positively than overweight and obese figures, but without a significant difference between their ratings of the overweight and obese figures.

CHAPTER II

REVIEW OF THE LITERATURE

In the United States, as well as in many other countries, there has been an increasing prevalence rate of in childhood and adolescent obesity, with its prevalence almost tripling since 1980. Up until 2000, obesity prevalence overall was on a clear and consistent rise, however, recent data indicate rates are leveling off. Childhood obesity is defined as exceeding the 95th percentile with respect to BMI. The health consequences of obesity are devastating and widespread (Theodore, Bray, & Kehle, 2009). Many health-related problems are long term, such as cardiovascular and pulmonary conditions (Daniels, 2006). Furthermore, obesity seems to be a long-term condition, as children and adolescents who are obese are likely to stay obese into adulthood (Magarey, Daniels, Boulton, & Cockington, 2003).

Psychosocial Outcomes

Some argue that psychological effects equal (Pearce, Boegers, & Prinstein, 2002) the physiological effects of the condition. Because of the increasing prevalence rate of childhood obesity and the negative psychosocial outcomes associated with it, studies have investigated the extent to which being overweight and obese influences these areas. Literature on psychosocial outcomes related to body dissatisfaction, teasing and discrimination, quality of life, self-esteem, and depression will now be reviewed.

Body Dissatisfaction

In a review of the literature Ricciardelli and McGabe (2001) found that there was consistent evidence of a positive relationship between BMI and body dissatisfaction in children, particularly in girls, and increasing with age. In a subsequent review of the literature by Wardle and Cooke (2005), the authors concluded that more recent research supports these deductions. Gender differences were not as clear, with two studies reporting no gender differences and three detailing less dissatisfaction among boys. Their review also noted a positive correlation between body dissatisfaction and age for girls, whereas the opposite trend was seen for boys. However, because boys often wish to be bigger, existing measures may need improvement to accurately distinguish between bigger due to more muscle and bigger due to more fat. Both reviews reported ethnic differences, with African-American girls considering themselves to be attractive and socially acceptable at a higher BMI than Caucasian girls. Only one study, Vander Wal (2004), looked at African-American and Hispanic girls, which also found a positive relationship between BMI and body dissatisfaction, with African-American girls having higher body satisfaction than Hispanic girls.

Teasing and Discrimination

Hayden-Wade and colleagues (2005) found that a significantly higher percentage of overweight than nonoverweight children and adolescents reported being teased about their appearance, were teased significantly more about weight related aspects, were teased more frequently and the teasing lasted more years. Hayden-Wade and colleagues also found weight-related teasing to be positively correlated with weight concerns,

loneliness, and liking of sedentary/isolative activities and a significant negative correlation of teasing with self-perception and liking of active/social activities. Puhl and Brownell (2001) reviewed literature on discriminatory attitudes and behaviors toward obese individuals and found that clear and consistent stigmatization, and sometimes discrimination occurs in three major areas of life: education, employment, and healthcare.

Quality of Life

Schwimmer and colleagues (2003) found that compared with healthy children and adolescents, obese children and adolescents reported significantly lower health-related quality of life in terms of psychosocial functioning ($d = 1.13$; emotional functioning, $d = .90$; social functioning, $d = 1.16$; and school functioning, $d = .71$) and were similar to children and adolescents diagnosed as having cancer. Gibson and colleagues (2008) also found higher BMI to be associated with decreased health-related quality of life.

Self-Esteem

In a review of 35 studies, French, Story, and Perry (1995) concluded that the association between obesity and low self-esteem is modest and that self-esteem scores of the overweight children and adolescents were in normal ranges, while noting that the studies examined were limited by weak methodology. In a more recent review, Wardle and Cooke (2005) reported that children and adolescents in clinical samples (i.e., referred to a dietician, participating in treatment) exhibit lower self-esteem than obese or normal-weight community controls; however, self-esteem is not uniformly low amongst these samples and the effects are moderate at most. There is evidence that overweight and

obesity negatively impacts specific domains of self-esteem such as physical appearance and athletic competence (Phillips & Hill, 1998) and lower body esteem and perceived cognitive ability (Davison & Birch, 2001). On the other hand, prospective studies provide a clear picture of higher BMI predicting lower self-esteem in the future (Brown et al., 1998; Davison & Birch, 2001, 2002; Hesketh, Wake, & Waters, 2004; Strauss, 2000; Tiggemann, 2005). Similar to body dissatisfaction, adolescents appear to be more at-risk than younger children, girls are more affected than boys, and Caucasian youth are more vulnerable than Hispanic or African-American youth.

Depression

In their review of the literature, Wardle and Cooke (2005) concluded that evidence suggested the link between obesity and depression among children and adolescents was modest and possibly negligible. However, Friedman and Brownell (1995) hypothesized that the association between depression and obesity may be obscured by the failure of most researchers to examine potential moderating variables, such as gender, socio-economic status or ethnicity. Wardle and Cooke posited that inconsistent results may be due in part to the different methods used for measuring depression and obesity. Atlantis and Baker (2008) explained that more high-quality research is needed to draw conclusions. Similar to self-esteem, more research is needed to understand the correlation between depression and obesity.

Measurement of General Attitudes Towards Obese Individuals

There has been growing research interest in exploring attitudes regarding excess

weight as well as psychological effects of being overweight in childhood and adolescence. Overweight and obese youth face potential hardships in many areas due to their own cognitions as well as social stigma associated with larger body size. In addition, it is beneficial to understand attitudes held by children interacting with their overweight peers. It is important to understand how and at what age social values are integrated into the perceptions of children because stereotypes influence the way that children interact with their peers (Hill & Silver, 1995).

Several approaches have been used in investigating the attitudes held by children toward their peers who are overweight and obese in comparison those who are of average weight. Researchers have generally used the presentation of target figures of varying body size. However, the way in which the target figures have been evaluated has varied and a standardized way of depicting overweight and obese children has not been established. Measurement of children's attitudes has been accomplished by asking participants to assign adjectives to target figures, rank obese target figures in comparison to figures with other physical disabilities, rate social acceptability of target figures, rate liking of target figures, and provide sociometric nominations. Such methods and findings from studies utilizing these methods are reviewed below along with their limitations.

Assignment of Adjectives in a Forced-Choice Format

In several studies children have been shown figures ranging from skinny to fat and asked to judge them in terms of descriptors that are provided (Bell & Morgan, 2000; Brylinsky & Moore, 1994; Counts, Jones, Frame, Jarvie, & Strauss, 1986; Cramer &

Steinwert, 1998; Hill & Silver, 1995; Johnson & Staffieri, 1971; Kirkpatrick & Sanders, 1978; Kraig & Keel, 2001; Lerner, 1969; Lerner & Korn, 1972; McCandless, 1961; Musher-Eizenman et al., 2004; Staffieri, 1967, 1972; Tiggemann & Wilson-Barrett, 1998; Tillman et al., 2007). Some researchers have used methodology in a forced-choice format. For example, Lerner asked participants whether the thin, average, or overweight figure “best fit” the given description without allowing participants the option to choose that the description does not fit any group or multiple groups. Other studies have also excluded the option of indicating that the description does not describe any given group (Kirkpatrick & Sanders, 1978; Lerner & Korn, 1972; Staffieri, 1967, 1972). Other studies have allowed participants more variability in their responses by having them judge *how much* a descriptor applies to a target figure is by through use of a scale for responses (Brylinsky & Moore, 1994; Hill & Silver, 1995; Kraig & Keel, 2001; Musher-Eizenman et al., 2004). However, the participants were still not given an option to indicate that the descriptor did not at all depict a target figure or depicted multiple figures. The most open format to date was used by Bell and Morgan (2000) in which participants were presented with the Adjective Checklist, a list of 32 adjectives, and asked to freely choose which adjectives described each target figure.

To evaluate children’s attitudes toward body types, Lerner (1969) showed pictures of three body types (thin, average, and overweight) to 50 participants who were separated into three groups of boys with an average age of 11, 15, and 20. Participants were asked to pair thirty short phrases, taken from those used by Brodsky (1954) with the body type they felt it most appropriately suited. Results indicated that participants paired

negative statements with the overweight body type while positive statements were paired with the average body type. Lerner and Korn's (1972) results were consistent with those found by Lerner when using a list of item pairs that included a positive and opposing negative description. When given the list of adjectives and short phrases, groups of males ranging from 5 to 20 years old attributed negative descriptions to the overweight and thin target figures while attributing positive descriptors to average-build target figure. The descriptions used reflected three areas: physical attractiveness, social attributes, and personal attributes. Kirkpatrick and Sanders (1978) presented participants ranging from the age of 6 to 60 with descriptors related to temperament and behavior (taken from Staffieri, 1967), requiring them to pair each item with a thin, average, or chubby body type. As in Lerner (1969) and Lerner and Korn (1972), the average body build was depicted positively and the chubby target figure was characterized negatively by 6 to 9 year olds. The only exception to the negative portrayal of the chubby figure was the positive label of "strong." Kirkpatrick and Sanders noted that "strong" may have been given due to the negative connotations of the word that imply forcefulness. The thin body type was also portrayed negatively, but not as negatively as the chubby figure. Some differences were found between 6- to 9-year-olds and 10- to 12-year-olds. Ten- to 12-year-olds assigned some negative adjectives to the average body type, although most adjectives given were positive. The thin body type was described similarly with the exception of the addition of a positive adjective. Although all adjectives assigned to the chubby figure by 10- to 12-year-olds were negative, there were fewer given compared to Group 1, indicating that the chubby figure was not depicted as negatively by 10- to 12-

year-olds as 6- to 9-year-olds.

In an all-male sample of 8- to 12-year-olds, Johnson and Staffieri (1971) had participants assign 36 descriptors to figures of varying body types. Findings showed that the average body type was assigned only descriptors with positive connotation while the very obese body type was assigned only descriptors with a socially unfavorable connotation. These results convey that body build is perceived by others to have an influence on the behavior and personality traits an individual possesses. A limitation of this study, and many of the earlier studies, is that the sample consisted solely of Caucasian males limiting the ability to generalize results. However, Staffieri's (1972) results were similar to those of Lerner (1969) and were found with an all female (but all Caucasian) sample. Staffieri asked 60 second to sixth graders to assign 38 adjectives used by Staffieri (1967) to three body types similar to those used in previous studies. Again, adjectives assigned to the average body type were overwhelmingly favorable while those assigned to the overweight body type were unfavorable, specifically those holding negative social inferences.

Twenty-four third-, fourth-, and fifth-grade participants were instructed by Counts and colleagues (1986) to pair a sample of negative and positive characteristics with either an obese or normal weight target figure. Both target figures were shown by photograph, wearing a spacesuit and helmet in an effort to isolate weight by concealing other factors, such as facial attractiveness. Participants paired the obese spaceperson with negative characteristics more often, such as "more sad" and "fights," and paired the normal-weight spaceperson with positive characteristics more often, such as "smarter," "friendlier," and

a “better partner.” Furthermore, participants’ answers were independent of their own weight status.

In a sample of 30 boys and girls (mean age = 60.3 months and 56.2 months, respectively), Cramer and Steinwert (1998) presented participants with stories (one fantasy story and one realistic story for each gender) describing a scenario that included one “nice” character and one “mean” character. Participants were then asked to choose which target figure (thin, average, or chubby) represented the “nice” character and which represented the “mean” character in the story. The chubby target figure was chosen to be the “mean” character significantly more often than the thin figure, $F(3,28) = 28.24, p < .001$. Cross gender stigmatization was also found, with boys rating girls more negatively than boys and vice versa. In a second study presented in the same publication, Cramer and Steinwert used shorter versions of the stories used in Study 1 with 83, primarily Caucasian 3, 4, and 5 year olds. These children were also asked to identify the “nice” and “mean” character, which produced similar results to Study 1 with the chubby figure being represented as “mean” significantly more often than the thin or average figure, $t(82) = 9.92, p < .001$. Furthermore, coding reasons for their responses indicated a shift from reasoning being related to appearance and body size at age 4, to solely emphasizing body size at age 5. It is important to note that at age 3, participants did not denote weight as the basis for their decisions. At age 4, many participants exhibited a clear focus on weight as reasoning for choices, and by age 5, participants were articulating body size as their basis for labeling the chubby figure as mean. With thirty-four 6½- to 8½-year-olds, Tillman and colleagues (2007) used the methodology employed by Cramer and Steinwert with the

exception of replacing the hand drawn target figures previously used with computer generated pictures. When assigning target figures to the two story characters, participants chose the thin figure as the “nice” character significantly more often than the “mean” character, $t(33) = -5.48, p \leq .001$, consistent with Cramer and Steinwert’s findings. This result was consistent for all four stories that were presented. Contrary to Cramer and Steinwert’s results, Tillman and colleagues did not find evidence of any cross gender stigmatism, whereas Cramer and Steinwert found that girls rated boys “mean” more often than boys did and boys rated girls “mean” more often than girls did. Tillman and colleagues posited that this discrepancy may be due to the age difference in the samples used. For example, Cramer and Steinwert’s preschool participants may hold more negative views of the opposite sex in comparison to the elementary school age sample used by Tillman and colleagues.

The forced choice methodology used in studies previously mentioned has limited the understanding among the scientific community related to the stereotypes and perceptions held by children regarding individuals of varying weight status. In comparison to more open formats, a forced choice format restricts the range in which a participant may respond. Therefore, it is unclear if the participant’s response reflects his/her actual viewpoint, or if the response is merely a result of being required to choose a response.

Assignment of Adjectives Using a Continuum or Scale

Some studies have applied more open formats, recognizing that respondents may

take advantage of choosing answers in between the limited, extreme choices that are offered by forced-choice format. Applying methodology that is less forced-choice can increase confidence in findings related to body size attitudes by having children evaluate body sizes on adjectives that are presented on a Likert-type scale. This allows the respondent more variability in responding. For instance, Brylinsky and Moore (1994) used a larger sample of 268 male and female participants in first through fourth grade. Researchers asked the participants to judge thin, average, and chubby line drawings on twelve pairs of opposing adjectives. Each pair of adjectives were placed at left and right side of a 7-point Likert scale and participants were asked to rate each line drawing on the scale. Analyses revealed that average figures were rated most favorably on composite scores of positive traits and the chubby figure was rated more negatively. On the other hand, similar to previous results, the average build was rated the most favorably on both functions. Results also conveyed an increase in negative association with the chubby body associated with an increase in age. The use of the scale for rating assigned adjectives in this particular study provides a nonforced choice format that does not require the participant to assign an attribute to a target figure regardless of whether it fits or not. In addition, Kraig and Keel (2001) also used a more open format, asking thirty-four 7- to 9-year-old children to judge target figures of varying body size. Similar to the methodology employed by Cramer and Steinwert (1998), participants rated how much a characteristic describes a figure. The traits were presented to participants on a scale of 1 to 5, with 1 representing least likely that the adjective describes the target figure. Results remained consistent with previous findings with more negative traits being associated

with the overweight target figure. Also, the thin target figure was viewed as the most favorable. In addition, the BMI of the participant did not have an effect on ratings; however, sex of the participant did. Cross gender stigmatism was apparent, with participants rating same sex target figures superior to those of the opposite sex. Girls rated the thin figure more favorably than the average figure, but rated the average and chubby figure similarly. On the other hand, boys rated the chubby figure less favorably than the average, but rated the average and thin figures similarly.

Hill and Silver (1995) also used a scale in assessing attitudes toward overweight and obesity. One hundred eighty-eight children (average age of 9 years, 8 months) rated thin and overweight target figures on eight areas. The overweight target figure was judged as having fewer friends, $F(1,186) = 514.62, p < .001$, being less liked by parents ($F = 642.08$), being less capable in school ($F = 76.12$), being less satisfied with their looks ($F = 644.76$), and preferring to be thinner ($F = 330.94$). Contradicting findings of other studies, BMI of the participant was related to response style. The children with higher BMIs considered every target figure to be more fit in comparison to participants with lower BMIs. In addition, girls with higher BMIs perceived parents to be fonder of all figures in comparison to girls with lower BMI.

Musher-Eizenman and colleagues (2004) also used a scale in assessing children's attitudes about body size during preschool years. Four- to 6-year-old children were shown target figures of varying body types and asked to judge them on a scale with a positive adjective on one end and a negative adjective on another. For example, one of the scales was anchored with "nice" and "mean" on the ends with seven empty boxes in

between them. Results showed that ratings given to the chubby figure were significantly lower than those given to thin and average target figures, with an average of 2.9 and 5.3 and 5.2, respectively, on a 7-point scale. Similar ratings given to the thin and average figure in this study contradict other findings (from more forced choice formatted studies) that indicated a preference among preschool children for the average body type over both thin and chubby body types (Brylinsky & Moore, 1994; Cramer & Steinwert, 1998; Staffieri, 1967).

Use of Adjectives in Other Open Formats

In addition to the use of scales and continuums, other more open formats have been employed in a limited number of studies. By allowing the participant to assign more than one target figure to a characteristic or not requiring that all adjectives be endorsed, the following studies have provided children with a more open format for responding. For instance, when asking 7- to 12-year-old children to pick whether an average weight or obese target figure or is more “friendly, happy, lazy,” and so forth, Tiggemann and Wilson-Barrett (1998) also gave participants the option to indicate that the two body types are the same. A better assessment of attitudes is likely to be gained by not limiting the respondent to only one answer. In this study, participants only identified the chubby and average figure as being the same in terms of friendliness. Otherwise, the chubby figure was characterized more negatively than the average weight target figure.

Bell and Morgan (2000) used the Adjective Checklist as one of their dependent variables in assessing attitudes toward overweight peers with a sample of 184 third through sixth graders. The researchers specifically wanted to see if the inclusion of

medical information as a reason for weight status had an effect of responses of participants. A brief explanation of the child's medical condition was provided that explained that he/she had problems with his/her glands making it easy for him/her to gain weight, regardless that he/she eats the same amount of food as most children. The Adjective Checklist includes 32 adjectives, half of which have a positive connotation and the other half have a negative connotation. The participants chose words from the list that describe the figure in question. The more open format lies in the participant's ability to choose any number of adjectives among the list. Use of the Shared Activities Questionnaire as an additional measure served for a more comprehensive assessment of respondents' intent to interact with the target figures in three different settings (academic, social, and active recreational). Weight status had a significant main effect, $F(1, 109) = 22.01, p < .001$. The inclusion of medical information did play a role with less fault given to the obese target figure with information ($M = 1.5$) and more fault being given to the obese target figure without information ($M = 2.1$).

Rankings of Various Physical Disabilities and Obesity

Attitudes related to overweight and obesity have also been explored by having participants rate or rank target figures of varying body size. This method has assisted in further understanding what degree various body types are liked and disliked by children (Cohen et al., 1989, 1997; Rand & Wright, 2000; Richardson et al., 1961). Using a culturally diverse sample, Richardson and colleagues followed up on pilot data collected in 1957 that revealed a stable way of judging target figures with disabilities (including

obesity). In the follow up study, over six hundred 10- and 11-year-old participants ranked six target figures: a child with no handicap, a child with crutches, a child in a wheelchair, a child missing a hand, a child with a facial disfigurement, and a child with obesity.

Uniformity in responding was evident with all groups, regardless of culture, ranking the target figure with obesity as liked the least. To analyze differences in responding among genders, average ranks of each drawing were analyzed. This revealed girls' aversion to appearance-related features that would influence social interaction, such as facial disfigurement and obesity, while boys were more concerned with functional impairments, such as having crutches, being in a wheelchair, or the absence of a hand. Richardson and colleagues repeated the study with 20 children and then asked the group to elaborate on the reasoning behind their rankings. There was overwhelming agreement within the group that target figures had not been evaluated based on appearance. In response, the researchers prompted the group for an explanation for the "discrepancies between their rankings and reasons they had given for the rankings," to which most children did not respond. One child said that "he did not feel uncomfortable with a handicapped child" and another explained, "He did not know what to say to a handicapped child" (p. 246).

In a replication of Richardson and colleagues (1961), Latner and Stunkard (2003) presented the target figures previously used to 415 fifth and sixth graders, asking them to provide rankings. Results were consistent with previous findings, indicating that the child without disabilities was liked best and the child with obesity was liked least.

Furthermore, boys' and girls' styles of responding were also consistent with Richardson and colleagues (1961), with girls showing opposition to disabilities associated with

appearance, while boys exhibited aversion to functional impairments. Latner and Stunkard's aim was to see how stigmatization may have changed given the increase in prevalence rate of obesity since Richardson and colleagues (1961). Results revealed that the child without disabilities was more well-liked in 2003 than in 1961 and the child with obesity was ranked less well-liked in 2003 than in 1961, suggesting an increase in stigmatization since 1961.

In an effort to update methodology used by Richardson and colleagues (1961), Latner and colleagues (2007) used target figures exhibiting the same disabilities as those used in 1961; however, pictures were computer generated. Ninety boys and 171 girls ranging from 10 to 13 years old ranked the six figures and then responded to five questions by placing a line on a scale which was anchored by the phrases "not at all" and "very much." The five questions asked how much they liked the figure, how much the figure has control over its condition, how much they would want to be like the figure, how smart the figure is, and how lazy the figure is. Researchers found a strong correlation between the rankings given in the current study and those found by Latner and Stunkard in 2003, $p(77) = 0.72, p < .001$, for boys; $p(153) = .68, p < .001$, for girls). Results also indicated that both genders liked target figures with obesity and facial impairments the least and researchers labeled these as social impairments. However, when analyzing the average rank given by boys and girls to each target figure, it is evident that girls were more concerned with social impairments while boys were more concerned with impairments that limit physical movement.

Ratings of Liking

Cohen and colleagues (1997) had 225 first, third, and fifth graders listen to one of four stories via audiotape, which presented the character, Lee, as average-weight or overweight, and displaying positive or negative behavior. After hearing a story, participants rated Lee on a 6-point Likert scale in terms of how much they, their teacher, and their parents would like Lee. Lee was also rated, on the same scale, according to how much participants felt he/she was happy, sneaky, smart, helpful, fun to be with, a slob, would steal, would share, or would cheat. Results showed that sex of the rater, $F(1,177) = 4.27, p < .05$, and Lee's behavior (positive or negative), $F(1,177) = 95.60, p < .001$ had a significant effect on how much the participants liked Lee. Regardless of weight, Lee was more well-liked when displaying positive behaviors. However, when Lee displayed negative behaviors, weight served as a more significant factor in disliking for boys in comparison to girls. Girls ($M = 3.87, SD = 1.89$) rated Lee as more likeable than boys ($M = 3.47, SD = 1.94$) and both sexes liked the character that performed a positive behavior ($M = 4.64, SD = 1.42$) over the character that performed a negative behavior ($M = 2.69, SD = 1.57$). Participants also felt that their peers, teachers, and parents would like Lee better if he/she had positive behavior. Girls felt that their peers would like Lee the same, regardless of weight. On the other hand, boys admitted they thought their peers would like Lee better at average-weight, suggesting that the boys may have responded in a socially desirable way when responding to how much they liked Lee personally.

Cohen and colleagues (1989) investigated the relationship between body type and ratings of how much peers are liked. One hundred thirty-six first, third, and fifth graders

were asked to rate how much they liked each of their classmates on a 5-point Likert scale. Negative ratings were not influenced by weight; however, sex of the target figure did have an impact. Those who were rated lowest were overweight first- and third-grade boys. Furthermore, cross gender stigmatism was apparent for all grades of females and only fifth grade males. Child's weight status did not have a significant impact on ratings of their peers. Unlike many of the other studies under consideration this study had the advantage of a more diverse sample, almost 50% White and 50% Black. The results may have been helpful in understanding different social stereotypes among the races, but unfortunately race was not considered in analyses.

In addition to ratings of liking, there has been research regarding to social acceptability of various body size. Rand and Wright (2000) asked participants ranging from elementary school age to middle-aged adults rate target figures of various body size and then choose all target figures that were socially acceptable as well as which on they liked best. There were nine figures in each array, numbered 1 to 9, with weight increasing as number increases. Along with participants in the other age groups, over 300 third through fourth graders consistently chose the ideal body size from middle of the array of target figures. No other studies to date have investigated the social acceptability of particular body sizes.

Rating Assessed by Sociometric Nominations

Asher and Hymel (1981) proposed that ratings specifically tap into liking but not preference regarding friendships, therefore, Cohen and colleagues (1989) also assessed

for nominations with the sample of 136 children, which were used to assess rating. Children were asked to name three peers they most liked and three peers they most disliked for three conditions: (a) in the classroom, (b) on the playground, and (c) to sit with. Although positive nominations were influenced by weight, negative nominations were not. In addition, sex had an influence with children rating figures of their own gender more positively.

Musher-Eizenman and colleagues (2004) also studied friendship selection by asking 4 to 6 year old boys and girls to select children they would like to play with and a best friend from a group of target figures varying in body size. In selecting whom to play with, average figures were the most frequently selected (45%), then thin (39%), and chubby (16%). Chubby figures were chosen significantly less than thin, $t(41) = 3.7, p < .01$, and average, $t(41) = 4.1, p < .01$, figures. When choosing a best friend, a thin figure (55%) was chosen most frequently, then average (38%), and chubby (7%).

Attitudes Held by Overweight/Obese Individuals

Studies have investigated to what degree, if at all, attitudes toward obesity differ among overweight/obese individuals and healthy-weight individuals. Staffieri (1967) found that adjectives assigned healthy-weight target figures were positive and adjectives assigned to overweight target figures were negative, regardless of the weight-status of the participant assigning the adjectives. In a replication of Staffieri (1967, 1972), Kraig and Keel (2001) found that regardless of the BMI of the participant, more positive descriptors were assigned to the average weight target figure and more negative descriptors were

given to the overweight target figure. In another study conducted by Lerner and Korn (1972) with an all male sample, when asked which body type they preferred, participants of all ages overwhelmingly excluded the overweight target figure from their choice, regardless of their own weight status (overweight or average weight). However, this preference was most pronounced among older participants (ages 14-15 and 19-20) and was still developing among younger participants (ages 5-6). In addition negative attitudes regarding overweight were found in a sample of individuals who were overweight by Wang, Brownell, and Wadden (2004) on both implicit and explicit measures of their attitudes. Specifically, participants reported that, in comparison to thin individuals, those who are overweight are lazier and less motivated. Moreover, many other studies have also reported that participants' BMI did not have any effect on outcomes on dependent variable measures (Cohen et al., 1989; Latner et al., 2007; Musher-Eizenmen et al., 2004). Furthermore, findings from Counts and colleagues (1986) also found that ratings and partner selection were not influenced by the weight status when controlling for the facial attractiveness of the target figures.

These results imply that attitudes toward obesity are similar regardless of an individual's weight status or BMI. These findings suggest that individuals who are obese are socialized similarly to individuals of different weight status, internalizing the value for slimness and having a bias toward individuals who are overweight in a similar way of individuals of healthy weight. Research has consistently shown that both healthy-weight and overweight individuals hold negative attitudes toward the overweight and obese persons (Kraig & Keel, 2001; Lerner & Korn, 1972; Musher-Eizenman et al., 2004;

Staffieri, 1967; Wang et al., 2004). However, Counts and colleagues found that the body type of participants in their small sample study held no bearing on response style.

Summary

Research has consistently documented that attitudes held by children are more negative toward chubby and overweight peers in comparison to those held regarding their average-weight counterparts. Even in the presence of mediating variables, the larger target figures are rated lowest. This has been shown with the use of various methodologies, including ratings, rankings, friendship selection, and adjective assignment.

There have been a number of criticisms regarding the independent variables employed in this area of research in relation to limitations of generalizability of findings. First, there has been no set, standardized way of depicting overweight and obese children. Researchers have used vignettes, videos, line drawings, and computer generated photos. Vignettes and stories require the character's body size be explicitly stated. Line drawings and computer-generated pictures have also been criticized for their limited realism. Previous research points out that these are limitations to understanding attitudes toward overweight and obese individuals. The present study utilized photographs of varying body sizes to avoid the limited realism offered by line drawings and to eliminate the explicit statement of body size in vignettes. The photographs provided more true-to-form impression of the target figure.

The present study also utilized the SAQ-B and Adjective Checklist to assess attitudes and behavioral intentions. The most recent use of these measures was in 2000

(Bell & Morgan, 2000). Since their study, obesity prevalence has increased and the current study is needed to explore attitudes and behaviors toward children based on weight status. Additionally, Bell and Morgan were more focused on the impact of medical information on attitudes toward obesity. The present study is focused on attitudes and behaviors toward overweight and obese individuals without medical information as a variable. The current study has an addition of an overweight category along with average-weight and obese categories, whereas Bell and Morgan included only average weight and obese categories. Additionally, existing literature has neglected to explore the attitudes and behaviors of middle school aged students. Studies to date have focused on samples of preschool, elementary school, and high school students. The present study extends the literature by using a sample of eight-grade students.

CHAPTER III

METHOD

Sample Characteristics

The participants in this study consisted of 170 eighth-grade students (72 male, 98 female; mean age = 13.61, $SD = .49$) from two public elementary schools. The percentage of students receiving free or reduced lunch at one school was 12% and 23.7% for the second. The sample was 82.4% Caucasian, 5.3% Hispanic, 4.1% mixed race, 1.8% Asian/Pacific Islander, 1.8% Native American/Alaskan Native, 0.6% African American, and 4.1% unknown due to lack of response. These are the only demographic data that were collected.

Experimental Conditions

The independent variable was target figure weight status with three conditions (average weight, overweight, obese) and was presented in photograph form. The photo presented to participants was consistent with their own gender. Therefore there were a total of six stimulus photos that varied only in terms of body weight, with all other characteristics being held constant.

While viewing the stimulus photo participants were asked to complete the Shared Activity Questionnaire and the Adjective Checklist.

Measures

Shared Activity Questionnaire

The SAQ-B (Morgan, Walker, Bieberich, & Bell, 2000) is a paper and pencil measure developed to evaluate elementary school children's commitment to interact with a target child in three domains. The questionnaire consists of 24 items, 8 in each domain, asking whether the participants if they would interact with a target figure in general social, academic, and active recreational areas of life. The items were adapted for eighth-grade students as necessary. Since the SAQ-B was originally developed for use with elementary students, the items were evaluated to ensure appropriateness for the current eighth-grade sample. Only one item was changed from "share my colored pencils with Suzy" to "Let Suzy borrow a pen or pencil." The only other change that was made was that "no," "maybe," and "yes" was used as responses instead of smiley, flat, and frown face emoticons. No, maybe, and yes were coded as 1, 2, and 3, respectively (see Appendix A).

Reliability was evaluated for the SAQ-B with a sample of 184 elementary school children. Internal consistency reliability, as reflected by coefficient alpha, was .94 for the SAQ-B Total Score, .86 for the General Social factor score, .83 for the Academic factor score, and .86 for the Recreational factor score (Morgan et al., 2000). Reliability for the adapted version of the SAQ-B used for current study was evaluated and reflected Cronbach's alpha of .94 for the Total Score, .83 for the General Social score, .84 for Academic, and .85 for Active Recreational.

The Adjective Checklist

The Adjective Checklist (Siperstein, 1980; Siperstein & Bak, 1977) is a paper and pencil measure that lists 32 adjectives, half with positive connotation and half with negative connotation (see Appendix B). This measure has been used in the assessment of attitudes held by elementary school children toward individuals with handicaps or obesity.

Participants select adjectives from the list that they feel represent the target child. It is important to note that participants can choose any number of adjectives among the list, providing a more open format in comparison to some measures previously used for assessing attitudes. The total number of positive adjectives assigned, minus the number of negative adjectives assigned, plus a constant of 20 yields the participant's score. Scores range from 4 to 36, with scores below 20 indicating more negative attitudes and scores above 20 indicating more positive attitudes.

Construct validity was confirmed by factor analysis for positive or negative value of the adjectives, and a coefficient alpha of .91 indicated acceptable internal consistency (Siperstein, 1980). Concurrent validity reflected by Pearson correlations between the SAQ-B and the Adjective Checklist were .59 for the total Score, .55 for the general social factor score, .53 for the academic factor score, and .56 for the recreational factor score (Morgan et al., 2000). In the current study concurrent validity between the two measures were .51 for the total score, .51 for general social, .50 for academic, and .50 for active recreational. Internal consistency, Cronbach's alpha, for the current sample was .77 for positive adjectives and .76 for negative adjectives.

Target Photos

The target photos were produced from stock photos that were purchased from a photo website (see Appendix C). The photos were then edited by a freelance professional photo editor. The student researcher instructed the photo editor to hold all variables constant in the photos except for weight status. The original, unedited stock photo appeared to be appropriate to represent the average weight status; therefore, no changes were made to the photo for this weight category. To familiarize the photo editor with the higher weight statuses, the student researcher informed the photo editor that overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile and that obese is defined as a BMI at or above the 95th percentile. The following BMI categories were also made available to the photo editor: normal weight = 18.5-24.9, overweight = 25-29.9, and obese ≥ 30 . The photo editor was also instructed to use modelmydiet.com as a reference for making the edited photos closely represent their weight categories. Modelmydiet.com was considered helpful because a height, weight, and other variables are inserted and an image of a person is generated. With this information, the photo editor was able to compare images for which actual BMIs could be computed to the images that were being edited. This process was used in an effort to make the weight status labels reliable.

Procedure

Participants were identified as part of a convenience sample through a Utah school district. First, approval was obtained from the university IRB as well as the school

district research board. Following this, 11 middle school building principals were contacted for permission to collect data in their schools, all of whom gave permission. The student researcher then sought out health/physical education (PE) teachers, of which 1 did not respond and 10 allowed the students to participate in the research project. The required number of participants were gained from two schools and data were not collected in the remaining eight schools; therefore, only two schools participated in the study. Participation occurred as part of the health class. An explanation of the study was sent home to the parents of 255 potential participants. Along with the explanation, parents were also asked to check “yes” or “no” to indicate their consent for their child’s participation in the study. An incentive of a small school supply (pencil, pencil sharpener, eraser) was provided for returned consent forms regardless of participation in the study. One hundred eighty-seven consent forms were returned, of which consent was given for 178. For student assent, a statement was included at the beginning of the surveys stating that the student’s parent gave consent for him/her to participate in the study. Assent was obtained by informing students that if they wanted to participate, they were to complete the survey and if they did not want to participate they were asked to turn in a blank survey. There were no blank surveys returned.

For the survey administration, a class seating chart was used to place surveys and target photos face down on the students’ desks prior to their arrival to class. Students who were not participating in the study were given an alternate task on their desk that was also placed face down. The classroom teacher confirmed that students were in their assigned seats before the study began. As they arrived to class, students were asked to leave all

materials face down until instructed otherwise and were informed not to put their name on any materials on their desk. Once the class bell rang and students were in their seats they were given the following instructions:

You have been given a picture of a student who could be your classmate next year. Today you will be completing two surveys. This survey [said while holding up the SAQ-B] will ask you about how you would interact with this student if he or she were at your school. For each questions you will circle your answer: yes, no, or maybe. Please complete every question and do not skip any. Make sure that you clearly circle your answer. It is very important to answer every item and not leave any blank. The other survey [said while holding up the Adjective Checklist] has a list of adjectives that can describe a person. You are to circle any of the words that you feel describe the person in the picture, your potential classmate. You can circle as many or as few words as you want. All of your answers are completely confidential. Your name will not be on anything you gill out today and no one will know how you answered. No on at the school will see your answers. Please know that it is very important that you are honest in your answers and that you try to answer truthfully.

Then students were asked if they had any questions. They were also told that if they are a boy they should have a photo of a boy and if they are a girl they should have a photo of a girl. They were asked to raise their hand if they had a photo that was different than their own gender to ensure that participants rated only gender-same photos. Survey completion was projected to take about 10 minutes, but it did not take that long for most students.

Participants were randomly assigned to view one of three target figures: (a) average weight, (b) overweight, and (c) obese. Each child was given a copy of the stimulus photo corresponding to their assigned condition. Participants were only assigned one photo so they would not know that weight was a factor being explored as part of the study. All participants completed the adapted version of the SAQ-B and Adjective Checklist based on the target peer presented via picture to assess their perceptions. Students who were not participating in the study were given an activity to work on that was not distinguishable

as different from participation in the study. All students turned in their papers once completed. Of the 178 children whose parents had given consent, 1 was absent and 7 were not used because of missing responses to SAQ-B questions resulting in a total sample size of 170.

CHAPTER IV

RESULTS

This study investigated how gender of rater and weight of figures impact ratings in a sample of eighth-grade students. It was hypothesized that girls would rate average-weight figures more positively than overweight figures and overweight figures more positively than obese figures. It was also hypothesized that boys would rate average-weight figures more positively than overweight and obese figures, with no significant differences between their ratings of the overweight and obese figures. Two-way between groups analyses of variance were conducted to explore the impact of participant gender and picture weight status.

Correlation Between Measures

Pearson correlations were run to determine the relationship between scores on the two dependent measures: the Adjective Checklist and the SAQ-B. There was a strong, positive correlation between scores on the Adjective Checklist and scores on the SAQ-B Social ($r = .517, n = 168, p < .001$), SAQ-B academic ($r = .497, n = 167, p < .001$), and SAQ-B active recreational ($r = .496, n = 169, p < .001$).

Descriptive Statistics

Means and standard deviations for all variables were calculated. These can be found in Tables 1 and 2.

Table 1

Means and Standard Deviations for Males and Females

Dependent variable	Female rater (weight condition)			Male rater (weight condition)		
	Average weight	Overweight	Obese	Average weight	Overweight	Obese
SAQ-B total						
<i>M</i>	52.13	51.68	48.75	51.00	51.83	47.50
<i>SD</i>	10.12	11.52	10.66	9.58	10.61	10.78
Range	28-72	26-70	26-66	36-66	27-72	26-64
<i>N</i>	31	34	32	23	23	22
SAQ-B academic						
<i>M</i>	18.06	17.50	16.94	16.76	17.22	16.64
<i>SD</i>	3.84	4.26	3.86	3.62	3.94	3.82
<i>Range</i>	10-24	8-24	9-23	10-24	8-24	8-23
<i>N</i>	31	34	32	25	23	22
SAQ-B social						
<i>M</i>	18.55	18.06	17.50	17.96	18.25	16.59
<i>SD</i>	3.36	3.51	3.50	2.94	3.13	3.92
<i>Range</i>	10-24	10-23	9-22	13-22	11-24	10-23
<i>N</i>	31	35	32	24	24	22
SAQ-B active rec						
<i>M</i>	15.52	16.00	14.31	15.67	16.80	14.27
<i>SD</i>	3.65	4.17	3.94	4.04	4.26	3.75
<i>Range</i>	8-24	8-24	8-21	9-24	8-24	8-21
<i>N</i>	31	35	32	24	25	22
Adjective Checklist						
<i>M</i>	25.39	23.94	23.63	25.52	26.32	23.05
<i>SD</i>	4.29	6.47	5.01	5.61	4.10	5.66
<i>Range</i>	16-34	12-34	13-34	12-35	18-35	13-35
<i>N</i>	31	35	32	25	25	22

Table 2

Means and Standard Deviations for All Raters

Dependent variable	Weight condition		
	Average weight	Overweight	Obese
SAQ-B total			
<i>M</i>	51.65	51.74	48.24
<i>SD</i>	9.82	11.07	10.63
Range	28-72	26-72	26-66
<i>N</i>	54	57	54
SAQ-B academic			
<i>M</i>	17.48	17.39	16.81
<i>SD</i>	3.77	4.11	3.82
<i>Range</i>	10-24	8-24	8-23
<i>N</i>	56	57	54
SAQ-B social			
<i>M</i>	18.29	18.14	17.13
<i>SD</i>	3.17	3.34	3.67
<i>Range</i>	10-24	10-24	9-23
<i>N</i>	55	59	54
SAQ-B active rec			
<i>M</i>	15.58	16.33	14.30
<i>SD</i>	3.79	4.19	3.83
<i>Range</i>	8-24	8-24	8-21
<i>N</i>	55	60	54
Adjective Checklist			
<i>M</i>	25.45	24.93	23.39
<i>SD</i>	4.88	5.69	5.24
<i>Range</i>	12-35	12-35	13-35
<i>N</i>	56	60	54

Two-way between groups analyses of variance were conducted to explore the impact of participant gender and picture weight status on participants' willingness to interact with a prospective peer in academic, social and active-recreational domains, as measured by the SAQ-B. As shown in Table 3, there was not a significant interaction between participant gender and stimulus photo weight status on SAQ-B Social, $F(2, 162) = .380, p = .685$; SAQ-B Academic, $F(2, 161) = .305, p = .738$; and SAQ-B Active Recreational scores, $F(2, 163) = .171, p = .843$.

Although there were no significant interactions between gender and weight, effect sizes in Table 4 indicated some variables differed in strength for males and females depending on weight status. Cohen's d was used to calculate mean differences, using Cohen's guidelines for interpreting effect size magnitude (Cohen, 1977). First, on the SAQ-B Academic, when comparing average versus obese pictures, Cohen's d was small for females (.30) and nonmeaningful for males. Secondly, on the SAQ-B Social, for overweight versus obese Cohen's d was nonmeaningful for females (.16) and small for males (.48). Lastly, on the Adjective Checklist, for overweight versus obese Cohen's d

Table 3

*Interaction Effects (Participant Gender * Picture Weight)*

Measure	Type III sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Academic	9.360	2	4.680	.305	.738
Social	8.857	2	4.429	.380	.685
Active recreational	5.436	2	2.718	.171	.843
Adjective Checklist	66.815	2	33.408	1.194	.306

* $p < 0.05$.

Table 4

Cohen's d Effect Sizes

Variables	Total	Females	Males
SAQ-B academic			
Avg. vs. overweight	.02	.14	-.12
Avg. vs. obese	.18	.30	.03
Overweight vs. obese	.15	.14	.15
SAQ-B social			
Avg. vs. overweight	.05	.14	-.09
Avg. vs. obese	.34	.31	.41
Overweight vs. obese	.29	.16	.48
SAQ-B active recreational			
Avg. vs. overweight	-.19	-.12	-.28
Avg. vs. obese	.34	.32	.37
Overweight vs. obese	.51	.42	.64
Adjective Checklist			
Avg. vs. overweight	.10	.27	-.17
Avg. vs. obese	.41	.38	.45
Overweight vs. obese	.28	.05	.68

Note. < .20 = nonmeaningful, .3 to .5 = small, .5 to .8 = medium, > .80 = large.

was nonmeaningful for females (.05) and moderate for males (.68). Otherwise, effect sizes showed that both genders responded similarly across the different weight pictures.

In sum, males were more discriminatory based on weight than females with regards to social interactions and endorsing adjectives with negative connotations with overweight versus obese peers, while females held more negative attitudes toward obese versus average weight peers for academic interactions. However, these differences were not statistically significant.

There were no significant main effects for gender on the adjective checklist, $F(1,$

164) = .612, $p = .435$; SAQ-B active recreational, $F(1, 163) = .239$, $p = .626$; SAQ-B social, $F(1, 162) = .663$, $p = .417$; or SAQ-B academic, $F(2, 161) = 1.047$, $p = .308$; as noted in Table 5. All effect sizes for females for average versus overweight were nonmeaningful. All effect sizes for average versus obese were small. The effect size for females for overweight versus obese on the active recreational scale was small. All other effect sizes for females were nonmeaningful. The effect sizes for males were moderate for overweight versus obese for active recreational and adjective checklist. Small effect sizes were found for males for average versus obese for social, active-recreational, and adjective checklist and for average versus overweight for active recreational. All effect sizes for males for average versus overweight were nonmeaningful.

As shown in Table 6, simple main effects analysis showed that there was a significant main effect for weight for the active recreational subscale on the SAQ-B ($p = .022$). There were no other significant main effects for weight.

A post hoc Tukey test, shown in Table 7, reflected that ratings of the overweight ($M = 16.33$, $SD = 4.193$) and obese ($M = 14.3$, $SD = 3.834$) pictures differed significantly

Table 5

Main Effects for Gender

Measure	Type III sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Academic	16.072	1	16.072	1.047	.308
Social	7.726	1	7.726	.663	.417
Active recreational	3.784	1	3.784	.239	.626
Adjective Checklist	17.132	1	17.132	.612	.435

* $p < 0.05$.

Table 6

Main Effects for Weight

Measure	Type III sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Academic	12.767	2	6.383	.416	.661
Social	47.757	2	23.879	2.049	.132
Active recreational	123.538	2	61.769	3.896	.022
Adjective Checklist	139.312	2	69.656	2.489	.086

* $p < 0.05$.

Table 7

Tukey HSD Comparison for Active Recreational

(I) Pic weight	(J) Pic weight	Mean difference (I-J)	Std. error	Sig.
Average weight	Overweight	-.75	.743	.571
	Obese	1.29	.763	.214
Overweight	Average weight	.75	.743	.571
	Obese	2.04*	.747	.019
Obese	Average weight	-1.29	.763	.214
	Overweight	-2.04*	.747	.019

* $p < 0.05$

($p = .019$). There were no significant differences between average weight ($M = 15.58$, $SD = 3.79$) and the other weight categories. Overall, effect sizes were moderate (Cohen's $d = .51$); with moderate effect size for males (Cohen's $d = .64$) and a small effect size for females (Cohen's $d = .42$). There was no significant main effect for weight (the target photo) for the SAQ-B social ($p = .132$), SAQ-B academic ($p = .661$), and adjective checklist ($p = .086$).

CHAPTER V

DISCUSSION

Summary

The current study examined attitudes and behavioral intentions of 8th grade students toward figures of varying body weight. The primary aim of this study was to investigate how weight impacts students' attitudes toward and interactions with their peers. Second, the impact of the rater's gender was explored. It was hypothesized that girls would rate average-weight figures more positively than overweight figures and overweight figures more positively than obese figures. It was also hypothesized that boys would rate average-weight figures more positively than overweight and obese figures, but without a significant difference between their ratings of the overweight and obese figures. Results showed these hypotheses to be partially supported. Students' responses on the SAQ-B showed that they were significantly more willing to interact with an overweight peer ($M = 16.33$, $SD = 4.19$) than an obese peer ($M = 14.30$, $SD = 3.83$) for active-recreational. The overall effect size (males and females combined) was moderate (.51), with a small effect size for females (.42) and a moderate effect size for males (.64). There were no other statistically significant differences for on the SAQ-B subscales of active-recreational, academic, and social, or on the Adjective Checklist. Although differences were not significant, effect sizes for Social domain for average versus obese and overweight versus obese were almost all small to medium. On the other hand, almost all effect sizes for Academic were nonmeaningful. Therefore, it appears weight has less

impact in academic interactions than the other two areas.

The present study was similar to Bell and Morgan (2000) in its assessment of attitudes and behaviors by using the Adjective Checklist and The Shared Activity Questionnaire-B. Differences include the use of photos instead of a video, the inclusion of an overweight category, and the present study did not include medical information. Also, the current study used a sample of eighth-grade students whereas Bell and Morgan's sample was comprised of elementary school students. Bell and Morgan's results showed that boys and younger children held more negative attitudes toward obesity.

There are additional studies that have found males to be less accepting of obesity than females in elementary school (Cohen et al., 1989, 1997). However, there were no significant interactions between gender and weight in the current eighth-grade sample. For obese versus overweight on the SAQ-B social, SAQ-B active recreational, and Adjective Checklist males were more discriminatory than females based on effect sizes. For instance, on the SAQ-B Social Cohen's d was small for males (.48) and nonmeaningful for females (.16). Second, on the SAQ-B active recreational effect size was medium for males (.64) and small for females (.42). Last, the most considerable difference in effect size between genders was found on the adjective checklist, with medium effect size for males (.68) and nonmeaningful for females (.05). Although effect sizes show males to be more discriminatory of weight than females, differences in means were not statistically significant.

Previous literature has illustrated that children hold negative attitudes toward

overweight and obese individuals with a variety of assessments (Latner & Stunkard, 2003; Richardson et al., 1961), such as rating and selecting short phrases/statements (Brodsky, 1954; Latner et al., 2007; Lerner, 1969; McCandless, 1961) and adjectives to describe target pictures (Bell & Morgan, 2000; Brylinsky & Moore, 1994; Counts et al., 1986; Cramer & Steinwert, 1998, Hill & Silver, 1995; Kirkpatrick & Sanders, 1978; Kraig & Keel, 2001; Lerner, 1969; Lerner & Korn; 1972; Musher-Eizenman et al., 2004, Staffieri 1967, 1972; Tillman et al., 2007). Some studies have found that body size became increasingly important with respect to negative ratings as age of the rater increases among preschool and elementary school-aged children (Cramer & Steinwert, 1998; Tillman et al., 2007). On the other hand, it is possible that individuals become more accepting of obesity in adulthood. For example, Rand and Wright (2000) found adolescents, young adult university students, and middle-aged adults to be more tolerant of obesity compared with elementary school children. The results from the current study suggest that 13- to 14-year-old students may be less likely to discriminate against their peers based on weight in academic and social interactions, as no statistically significant differences were found in these areas and effect sizes were nonmeaningful to small.

One explanation for the differences between results in SAQ-B active-recreational compared with social and academic could be the nature of the interactions in terms of physical demands. Specifically, students may be more likely to interact with obese peers in settings in which weight does not impact their performance on the given task. The lack of physical demands in academic (e.g., work on an assignment or homework together) and social (e.g., sit next to, share with, etc.) settings may explain the nonmeaningful to

small effect sizes in those areas compared with the small to medium effect sizes for the active-recreational (hike, ride bikes, play soccer, go to ball game or swimming party). However, it is interesting that on the SAQ-B active recreational subscale, overweight peers were viewed more positively than average-weight peers, although, effect sizes were nonmeaningful for females and small for males. This is consistent with one study, which found the midrange of body sizes to be preferred in terms of ideal body size and social acceptability (Rand & Wright, 2000). Although, since Rand and Wright's target photos ranged from thin to obese, the midrange body size was smaller than the midrange in the present study, which were overweight.

Previous studies have also noted behaviors toward others to be a function of attitudes held toward a group of people (e.g., minorities, persons with disabilities) *and* attitudes toward the situation (Kutner, Wilkins, & Yarrow, 1952; MacDonald & Hall, 1969; Minard, 1952; Rokeach, 1968; Sloat & Frankel, 1972). However, the present study did not assess for attitudes toward academic, social and active recreational settings and therefore its impact is unknown. Gaining a broader understanding of students' attitude toward academic, social, and active-recreational activities in general can create a better context from which to understand their willingness or unwillingness to interact with peers who are overweight and obese. Therefore, future studies may find it insightful to assess for participant attitudes toward the contexts in which interactions are taking place along with attitudes toward weight.

In previous research, negative stigma of body weight has been consistent regardless of realism with which the target figure is presented. For example, negative

attitudes regarding larger body size have been found using hand drawn pictures (Cramer & Steinwert, 1998), black and white pictures, color photographs, computer-generated photos (Latner et al., 2007; Tillman et al., 2007), silhouettes, and in vivo video (Bell & Morgan, 2000). The present study attempted to use increased realism by using real photographs that were modified in terms of weight. All other aspects of the photograph were kept constant. Regardless, negative attitudes toward larger weight status were not generally supported outside of active-recreational settings.

The lack of significant results in the present study may also be explained by the students' increased exposure to individuals who are overweight and obese. Since rates of obesity have drastically risen over the last 30 years (CDC, 2013) there are more and more overweight individuals and it is possible for students to hold less negative attitudes about weight because they more often see overweight people.

Limitations

A major limitation of the present study is its small sample size of 170. Future research will benefit from larger samples to increase statistical power. If using a small number of participants, it may be helpful to focus on fewer domains to get a more in-depth look in to chosen areas. Additionally, the current study used a convenience sample, limiting its ability to be replicated and the degree to which the sample is representative of the target population.

Another limitation is that the sample used for this study was primarily white individuals. Future research would benefit from sampling a more diverse population, or

by focusing on specific minority groups to better understand how attitudes toward obesity vary across cultures. Additionally, there were no cross-gender ratings in this study, as females only rated females and males only rated males. Previous research supports the presence of cross-gender stigmatism, the tendency to view one's own gender more favorably in terms of attitudes regarding overweight and obesity. Future studies may find it beneficial to explore ratings across genders to look at how attitudes and behaviors differ toward each gender.

Additionally, although target photos were developed with the intention of representing average weight, overweight, and obese weight statuses, an assessment was not conducted regarding how students actually perceived the weight statuses.

Additionally, the photos were not reviewed by experts to confirm they represented their given labels. In the future it will be advantageous to assess for this to ensure construct validity of the weight statuses being examined. Furthermore, a standardized way of depicting overweight and obese children has not been established. Since representations of overweight and obese children vary across studies, it is difficult to compare and contrast results.

The present study may also be limited by the fact that completing surveys about a "potential peer" is more distant from real-life interactions. Sloat and Frankel (1972) found attitudes toward individuals with disabilities to be more positive as social distance decreased. However, variance in response style as a function of social distance is outside the scope of this study. With most of the academic effect sizes being nonmeaningful, it may be interesting for future studies to be able to understand whether participants viewed

academics as a more socially distant interaction than the other two areas. In addition, it may be interesting for future research to explore the participant's degree of familiarity with the target person and if, and how, it impacts the participant's attitudes and behavioral intentions.

There are also limitations in generalizing attitudes assessed through self-report. Cohen and colleagues (1997) explained that participants might respond to questions based on what is socially appropriate as opposed to how they truly feel. The degree to which students' responses are representative of how they would act when in a particular situation is unknown. Overall it is safer to assess attitudes by observing real-life interactions to limit this as a potential confounding variable.

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APPENDICES

Appendix A

Shared Activity Questionnaire-B (SAQ-B)

7. Study for a test with Suzy at school.

No **Maybe** **Yes**

8. Invite Suzy to my birthday party.

No **Maybe** **Yes**

9. Ask Suzy to go to a swimming party with me.

No **Maybe** **Yes**

10. Ask Suzy to walk my dog with me.

No **Maybe** **Yes**

11. Ask Suzy to eat lunch with my friends and me at school.

No **Maybe** **Yes**

12. Walk together with Suzy in between classes.

No **Maybe** **Yes**

13. Do art with Suzy in class.

No **Maybe** **Yes**

14. Pick Suzy to be on my sports team.

No **Maybe** **Yes**

15. Work on an assignment in class with Suzy.

No **Maybe** **Yes**

16. Write a story or book report for school with Suzy.

No **Maybe** **Yes**

17. Ask Suzy to join my 4-H club.

No **Maybe** **Yes**

18. Do homework with Suzy at home after school.

No

Maybe

Yes

19. Go to the movies with Suzy.

No

Maybe

Yes

20. Play basketball with Suzy at lunch.

No

Maybe

Yes

21. Pick Suzy as my partner in relay games.

No

Maybe

Yes

22. Be good friends with Suzy.

No

Maybe

Yes

23. Go to a sports event with Suzy.

No

Maybe

Yes

24. Go on a bike ride with Suzy.

No

Maybe

Yes

Appendix B
Adjective Checklist

ADJECTIVE CHECKLIST

If you had to describe this student to your classmates, what kinds of words would you use? Below is a list of words to help you. Circle the words you would use. You can use as many or as few as you want. Here is the list:

smart
weak
dirty
helpful
sad
lazy
happy
lonely
sloppy
ashamed
handsome

dumb
slow
friendly
healthy
kind
alert
careless
cheerful
foolish
clever
glad

greedy
bright
honest
selfish
stupid
nice
ugly
neat
careful
unhappy

Appendix C

Target Photos

Female Target Photos



Average-weight

Overweight

Obese

Male Target Photos



Average-weight

Overweight

Obese