

BODY SIZE AWARENESS, STEREOTYPES, FRIENDSHIP SELECTION, AND
SELF-PREFERENCES OF 3 TO 5 YEAR-OLD CHILDREN

by

Lena Jo May-Fraser

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

of

Master of Science

in

Applied Psychology

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2009

© COPYRIGHT

by

Lena Jo May-Fraser

2009

All Rights Reserved

APPROVAL

of a thesis submitted by

Lena Jo May-Fraser

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the Division of Graduate Education.

Dr. Wesley C. Lynch

Approved for the Department of Psychology

Dr. Richard A. Block

Approved for the Division of Graduate Education

Dr. Carl A. Fox

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of a master's degree at Montana State University, I agree that the Library shall make it available to borrowers under the rules of the Library.

If I have indicated my intention to copyright this thesis by including a copyright notice page, copying is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for permission for extended quotation from or reproduction of this thesis in whole or in parts may be granted only by the copyright holder.

Lena Jo May-Fraser

April 2009

TABLE OF CONTENTS

| | |
|--|----|
| 1. INTRODUCTION | 1 |
| Anti-Fat Bias and Attribute Assignment (Stereotypes) | 3 |
| Children's Friendship Preferences | 5 |
| Children's Self Body Size Preferences..... | 5 |
| The Role of Gender..... | 6 |
| Criticisms and Limitations of Past Studies | 8 |
| Improvements and Additions of the Current Study | 10 |
| Theoretical Explanation..... | 11 |
| Hypotheses..... | 12 |
| 2. EXPERIMENT | 14 |
| Method..... | 14 |
| Participants and Design | 14 |
| Materials and Measures | 15 |
| Target Figures | 15 |
| Target Figure Pilot Study..... | 16 |
| Body Size Judgment Questionnaire (BSJQ)..... | 17 |
| Questionnaire and Stimulus Organization | 19 |
| Body Mass Index (BMI) Z-Scores..... | 20 |
| Procedure | 21 |
| Results..... | 22 |
| Exclusion/Inclusion Criteria | 22 |
| Analyses..... | 22 |
| 18 Individual Body Size Items..... | 22 |
| Composite Scores..... | 24 |
| Correlations Between Composite Scores, Age, and BMI Z-Scores | 25 |
| Body Size Awareness Composite Score..... | 26 |
| Anti-Fat Stereotypes Composite Score..... | 27 |
| Anti-Fat Friendship Selection Composite Score..... | 28 |
| Awareness of Targets' Body Size | 29 |
| Individual Stereotype Items | 31 |
| Has Many Friends/Has No Friends..... | 31 |
| Nicest/Meanest | 31 |
| Smartest/Stupidest | 32 |
| Cutest/Ugliest..... | 32 |
| Individual Friendship Selection Items | 33 |
| Want to Play With..... | 33 |
| Do Not Want to Play With..... | 34 |
| Individual Body Size Self Awareness and Preference Items..... | 34 |

TABLE OF CONTENTS - CONTINUED

| | |
|--|----|
| Self Body Size Awareness..... | 34 |
| Non-Preferred Self Body Size | 34 |
| Preferred Self Body Size | 35 |
| Discussion..... | 36 |
| Limitations..... | 42 |
| Future Directions | 44 |
| Conclusions..... | 46 |
| | |
| REFERENCES CITED..... | 48 |
| | |
| APPENDICES | 54 |
| APPENDIX A: Example Stimulus Set of Target Figures | 55 |
| APPENDIX B: Body Size Judgments Questionnaire..... | 59 |
| APPENDIX C: Study Script..... | 63 |

LIST OF TABLES

| Table | Page |
|--|------|
| 1. Correlations Between Composite Score Variables and Participant Age, and BMI Z-Scores..... | 26 |

LIST OF FIGURES

| Figure | Page |
|---|------|
| 1. Participants' Mean Total Anti-Fat Bias Scores for 8 Stereotype Items as a Function of Participant Age | 28 |
| 2. The Number of Participants Who Selected Each Target Figure Body Size as the "Cutest" Target..... | 33 |
| 3. The Number of Participants Who Selected Each Target Figure Body Size as the One They "Want to Look Like."..... | 36 |

ABSTRACT

Research has found that anti-fat attitudes are pervasive among school-age children, adolescents, and adults (e.g., Ryckman, Robbins, Kaczor & Gold, 1989; Brylinsky & Moore, 1994). However, very few studies have examined this phenomenon in preschool-age children. Furthermore, prior methodology used to investigate this topic has been criticized for its unrealistic nature. Thus, the goal of this study was to examine body size awareness, stereotypes, friendship selection, and self-preferences of 3 to 5 year-old children, using improved methodology. The first improvement made to this study was the replacement of materials used in the past, with new stimuli: photographs of real children. These photographs were digitally altered to obtain three different body sizes (thin, average and overweight), while controlling for facial attractiveness. The intent of using photographs of real children rather than hand-made figures was to increase the realistic quality of the stimuli. Additionally, photographs of boys and girls were used to assess same- and cross-gender judgments of body size. For each item, children were asked to hand the selected target figure to the experimenter to decrease ambiguity about participant choices. Results showed that body size awareness increases as a function of age. Anti-fat bias was present in children as young as 3 years also increased as a function of age. Children were less likely to ascribe positive traits (e.g., “nicest” and “cutest”) to the overweight target compared to either the thin or average sized targets. Similarly, children were more likely to assign negative adjectives (e.g., “stupidest” and “ugliest”) to and prefer not to play with or look like the overweight targets relative to thin and average size targets. These results necessitate the implementation of body-size-acceptance-based programs in preschool and daycare facilities to reduce body-size-based stereotypes, prejudice, and discrimination at an early age.

CHAPTER 1

INTRODUCTION

The prevalence of childhood obesity in the United States has more than doubled in the past 30 years (Center for Disease Control [CDC], 2009). Also, in the United States, obese people comprise a stigmatized group (Carr & Friedman, 2005). The term “stigma” refers to “an attribute that is deeply discrediting” to an individual, also known as a “shortcoming” or “handicap” (Goffman, 1963, p. 3). According to Goffman (1963) there are three different types of stigma: “tribal” (e.g., race or religion), “physical deformities” and “blemishes of individual character” (p. 4). Obesity stigma constitutes a combination of the latter two classifications; thus, obesity stigma connotes both physical and personality deficiencies.

Obesity is associated with several physiological health risks including cardiovascular disease, type 2 diabetes, asthma, high blood pressure and high cholesterol. Another negative aspect of obesity is the perception that overweight individuals are less attractive than people with smaller body sizes (Hebl, Ruggs, Singletary, & Beal, 2008). Obese individuals are also at risk of becoming victims of stereotypes, prejudice, and discrimination. Stereotyping is the assumption that a set of characteristics, behaviors, and/or attributes can be ascribed to all members of a social group (Allport, 1954; Hilton & von Hippel, 1996). Prejudice, on the other hand, is a preconceived attitude that is directed towards members of a certain group, while discrimination refers to the

differential treatment of people based on their group membership (Eagly & Diekmann, 2005).

Westernized society endorses a negative stereotype of overweight individuals (Anesbury & Tiggeman, 2000). Studies have consistently found that anti-fat attitudes exist in adults (Ryckman, Robbins, Kaczor & Gold, 1989; Cogan, Bhalla, Sefa-Dedeh, & Rothblum, 1996; Swami et al., 2008) and can result in discrimination towards overweight individuals in areas of education, health care and employment (see Puhl & Brownell, 2001 for review; Baum & Ford, 2004; Cawly, 2004). Likewise, overweight individuals are more likely to report feeling discriminated against in professional and interpersonal settings as a result of their overweight body size (Carr & Friedman, 2005). Research has also shown a “mere proximity” effect, demonstrating that average sized targets are liked significantly less when they are in near proximity to overweight targets (Penny & Haddock, 2007). Furthermore, overweight individuals are often subjected to weight-based teasing, which has been associated with decreased body satisfaction and self-esteem and increased depressive symptoms, eating disorders, and suicidal ideation (Benas & Gibb, 2008; Eisenberg, Neumark-Sztainer, & Story, 2003).

In contrast to the negative attitudes associated with obesity, westernized society also promotes particular body size ideals. Specifically, the ideal body size for women in the United States is thin, while the ideal body size for men is muscular (Furnham, Badmin, & Sneade, 2002). To illustrate this point, researchers have found that female fashion models are thinner than 98% of women in the United States (Smolak, 1996). Similarly, Leit, Gray, and Pope (2001) found that over a 30 year time-span, the

muscularity of male models increased dramatically. Exposure to these body size ideals as well as pressure to attain them, have been shown to have detrimental effects on men and women. One study found that women who were exposed to photographs of models in popular women's magazines for a mere three minutes, had increased body image dissatisfaction, insecurity, depression, guilt, shame and stress in comparison to a control group who viewed photographs of average-size models (Stice & Shaw, 1994). In regards to men, results of a meta-analysis using 25 studies, showed that as men felt pressure from the mass media, they felt worse about their bodies (Barlett, Vowels, & Saucier, 2008).

Due to these negative consequences associated with obesity and cultural body size ideals, it is important to more clearly identify a developmental pattern of the relationships among body size awareness, stereotypes, and preferences. The current study first tested body size awareness of young children (3 to 5 year-olds) to determine how accurate children are at identifying the body size of others. Next, this study investigated how children differentially ascribe various attributes to targets with dissimilar body sizes (i.e., utilize body size stereotypes). Finally, this study examined how young children use body size to inform their own attitudes in terms of friendship selection and personal body size preferences.

Anti-Fat Bias and Attribute Assignment (Stereotypes)

In a classic study by Staffieri (1967), 6-10 year-old boys were presented silhouettes of thin, average, and overweight target figures and were asked to assign various adjectives to the best-fitting target. Subsequently, this adjective assignment

technique has been a dominant method used by researchers to assess participants' judgments of targets based on body size. Studies have shown that adults often label overweight individuals with adjectives such as "lazy", "sloppy", "dirty", "unattractive", and "unhappy" (Ryckman et al., 1989; Cogan et al., 1996; Swami et al., 2008). Anti-fat biases similar to those of adults have also been observed in child and adolescent populations. Studies have shown that school-age children and adolescents ascribe negative attributes (e.g., mean, ugly, gets teased, lonely, lies and cheats) to overweight targets (Staffieri, 1967; Stager & Burke, 1982; Kraig & Keel, 2001). Consistent with these findings, the few studies that have examined preschool children also found that the overweight target was rated more negatively than the other targets (Cramer & Steinwert, 1998; Turnbull, Heaslip, & McLeod, 2000; Margulies, Floyd, & Hojnoski, 2008).

Research has found that average-size targets are consistently associated with positive attributes such as "cute", "has friends", "nice", "strong", "smart", "healthy", "brave", "not teased", "works hard", and "happy" (e.g., Staffieri, 1967; Stager & Burke, 1982; Brylinsky & Moore, 1994). However, results have been mixed with regards to thin targets. Thin target figures are at times ascribed favorable traits such as "cute", "popular", "nice", "neat", and "smart" (e.g., Stager & Burke, 1982; Brylinsky & Moore, 1994; Kraig & Keel, 2001). In other cases, thin targets are assigned negative attributes, usually socially submissive in nature, such as "weak", "unhealthy", "afraid", "gets teased", and "sad" (e.g., Staffieri, 1967; Stager & Burke, 1982). Interestingly, the body size of participants has not significantly affected anti-fat bias ratings of targets (e.g., Staffieri, 1967; Lerner & Korn, 1972; Davison & Birch, 2003), implying that anti-fat attitudes are

not diminished as a result of ones' own larger body size. This finding suggests that negative perceptions of overweight individuals are pervasive and have the potential to be adopted by people who are overweight themselves.

Children's Friendship Preferences

In addition to perpetuating body size stereotypes, cultural standards also have the ability to affect the behaviors of children; specifically, in the realm of peer interactions and ultimately, friendship selection. As a result, some researchers have also examined how body size is used as a tool to select playmates. Research shows that relative to average-size peers, children liked overweight peers less and preferred to interact with them less often (Bell & Morgan, 2000). Similarly, many studies have found that overweight targets are selected as playmates significantly less often than thin or average targets (Cramer & Steinwert, 1998; Musher-Eizenman, Holub, Barnhart Miller, Goldstein, & Edwards-Leeper, 2004; Margulies et al., 2008). However, the target figure that children prefer to have as a playmate is inconsistent. Most often, the average target is favored (Staffieri, 1967; Musher-Eizenman et al., 2004; Margulies et al., 2008), but occasionally, the thin target is preferred (Cramer & Steinwert, 1998).

Children's Self Body Size Preferences

While studies have found that body size may play a role in friendship preference, it may also impact the way people view themselves. Past research has suggested that the tendency to *internalize* cultural ideals of attractiveness may be a potential mediator

between exposure to those ideals and the development of eating disorders (Heinberg & Thompson, 1995). Thus, it is important to examine which target's body size children prefer and do not prefer to personally resemble. Research has consistently found that children prefer not to look like overweight targets (e.g., Lerner & Gellert, 1969; Cramer & Steinwert, 1998; Musher-Eizenman, Holub, Edwards-Leeper, Persson, & Goldsein, 2003) and prefer to look like the thin and average targets (e.g., Staffieri, 1967; Cramer & Steinwert, 1998). However, some studies have found participant gender differences in ideal body size selections. One study showed that girls' (7-10 years-old) ideal body size was much smaller than boys' and girls perceived themselves as being larger than their ideal body size but boys did not (Gardner, Friedman, & Jackson, 1999). Likewise, another study found that boys did not rate their current and ideal body sizes significantly different from each other, but as age increased (5-8 year-old), the ideal body size of girls became significantly thinner than their actual size (Lowe & Tiggeman, 2003). These findings correspond to the adult gender differences in western body size ideals.

The Role of Gender

Although some participant gender differences have been observed in the past, very few previous studies have required participants to make body size assessments about targets of the opposite gender. The majority of previous research examined only same-gender judgments but a few studies have examined whether target gender affects children's body size judgments. These studies required participants to rate both same- and opposite-gender targets. In one study, children (7-9 years-old) evaluated a total of six

target figures, three boys and three girls (thin, average, and overweight). Results showed that both boys and girls rated the thin girl target most positively, while ratings of average and overweight targets did not differ in terms of favorability. In contrast, overweight boy targets were rated least favorably, while thin and average targets did not differ significantly (Kraig, & Keel, 2001). These results suggest that it is most important for girls to be thin and most important for boys to not be overweight. These priorities correspond with societal demands for girls to be thin and boys to be physically fit.

Another study had preschool children (2-5 years-old) assign adjectives to average or overweight line-drawn targets, but no thin target was used (Turnbull, et al., 2000). Unlike Kraig and Keel (2001), Turnbull et al. (2000) found that the overweight girl target was rated significantly more unfavorably than the overweight boy target and this tendency increased with age. Further, a different study utilized a story-telling technique to examine body size stereotypes of 3 to 5 year-old children (Cramer & Steinwert, 1998). Children were told four stories (two about girls, two about boys), each with two main characters (a protagonist and an antagonist). After being read each story, children were presented with pictures of an overweight and thin target (no average size target) and were asked to identify which was the “mean” character and which was the protagonist. Children chose the overweight target as the “mean” character significantly more often than the thin target. Interestingly, girls chose the overweight target as the “mean” character in the stories about boys significantly more than in stories about girls. The reverse pattern of these results was shown for judgments made by boys: overweight girl targets were selected as the “mean” character more often than overweight boy targets.

Thus, it seems that negative stereotyping was stronger for judgments made about the opposite gender. Yet again, these results are unlike those of the other two studies.

Unfortunately, it is unclear whether the mixed results of the aforementioned studies are a result of differences in participant ages or discrepancies in the methodologies used.

In summary, past research has firmly established anti-fat attitudes in children and adults alike. This type of bias has been found to influence both friendship selection and personal body size preferences. Furthermore, the few gender differences that have been observed are not consistent across studies. While some gender differences mimic cultural body size ideals, others do not.

Criticisms and Limitations of Past Studies

Although past studies have yielded consistent results regarding anti-fat biases of children, adolescents, and adults, conclusions that can be drawn from these studies are limited by methodological problems. The aforementioned studies have gauged body size judgments using a variety of stimuli: handmade line-drawings, cut-out silhouettes, and pictures.

Some of the target silhouettes used in the past have been criticized for their gender-ambiguity (LeBow, 1988); other stimuli have consisted of targets whose heads had been removed altogether (e.g., Lerner & Gellert, 1969; Lerner & Korn, 1972; Lerner, Knapp & Pool, 1974; Cramer & Steinwert, 1998). These types of stimuli have the potential to severely limit the external validity of results because people never encounter others with missing heads and rarely come across people whose gender is ambiguous.

Additionally, blocking out the heads of targets may increase body size salience, calling to the participants' attention the component on which their decisions should be based.

Further, some studies do not control for facial attractiveness (Penny & Haddock, 2007), making it unclear whether the corresponding results reflect judgments based on the body size or the attractiveness of target figures. Also, many studies (e.g., Stager & Burke, 1982; Cramer & Steinwert, 1998; Turnbull et al., 2000; Penny & Haddock, 2007) have utilized only two of the three body figures (e.g., average and overweight targets or thin and overweight targets). In these cases, it is uncertain whether participant judgments were accurate representations of body size attitudes or simply default judgments due to a missing body size category. In sum, previously used materials have lacked realistic quality, which limits the real-world applicability of the judgments associated with them.

A further limitation of previous research is the inconclusive results that have been found in the few studies that have examined cross-gender judgments of body size. Additionally, very few studies have examined body size judgments of children as young as three years-old, and those that did, have specific drawbacks that limit the generalizability of their results. For example, results of one study were specific to African American preschool-age children of low socioeconomic status, making same-gender judgments (Margulies et al., 2008). Another study of preschool children was limited to an adjective assignment task that utilized only two different-sized (average and overweight) targets (Turnbull et al., 2000). Results of a further study were primarily confined to same-gender judgments made about headless target figures (Cramer & Steinwert, 1998). Moreover, these three studies of preschool-age children did not explicitly ask children to

identify the body sizes (body size awareness) of targets (e.g., Cramer & Steinwert, 1998; Turnbull et al., 2000; Margulies et al., 2008). Thus, anti-fat bias has been assessed without first confirming that these very young children were able to effectively identify body sizes differences.

Improvements and Additions of the Current Study

The methodology used in the current study is an endeavor to overcome limitations of past research. The first improvement made to this study was the replacement of materials used in the past, with new stimuli: photographs of real children. These photographs were digitally altered to obtain three different body sizes (thin, average and overweight), while controlling for facial attractiveness (see Appendix A). The intent of using photographs of real children rather than hand-made figures was to increase the realistic nature of the stimuli. Similarly, photographs of 36 different children were digitally altered and used in hopes that results of this study would be generalizable to a broader range of real-world targets. Additionally, photographs of boys and girls were used to assess same- and cross-gender judgments of body size.

Although adjectives and phrases used in this study were the same as those used in the past (Staffieri, 1967; Lerner & Gellert, 1969; Lerner & Korn, 1972; Brylinsky & Moore, 1994; Cramer & Steinwert, 1998), a slightly different technique was used to create a rank-ordering of targets. Items were phrased in terms of superlative adjectives (e.g., “nicest”) for attribute assignment. Thus, when a participant indicated the target figure that was the “nicest”, this choice did not inherently imply that the other figures

were not nice, just not *as* nice as the selected target. However, this method is still considered a forced-choice technique, so although the implications of the items are somewhat different, the same problems associated with forced-choice techniques still exist in the present study.

A questionnaire (see Appendix B) was created to examine multiple constructs of body size judgments: awareness, stereotypes, friendship selection and self-preferences. Body size awareness refers to children's ability to accurately identify the body sizes of others. Body size stereotyping was assessed by having participants assign positive and negative adjectives to targets with different body sizes (thin, average, and overweight). Friendship selections were assessed by asking participants to identify which targets they would or would not like to play with. Finally, children's personal body size preferences were evaluated by having participants select targets they did and did not want to look like.

Theoretical Explanation

Social learning theory (Bandura, 1977; Bandura, 1986) suggests that stereotypes are learned either directly (e.g., by being personally reinforced for specific behaviors) or indirectly (e.g., by observing the behaviors of and consequences experienced by others' or cultural transmission). This theory would support the notion that children have observed or directly experienced reinforcement for being a certain body size (e.g., child observes thin people being praised for their beauty) and punishment for being or judging others of a certain body size (e.g., peers tease child for being "fat"). If this theory is

correct, children should repeat behaviors that have been previously reinforced, imitate the reinforced behaviors of significant others (i.e., models) that they have observed, or mimic what they perceive to be existing cultural standards (e.g., fat is bad, thin is good).

Presumably, according to social learning theory, body size stereotypes should increase with age as children have more opportunities for social learning or greater exposure to cultural beliefs. In support of this assumption, past research has found that the attribution of negative adjectives to the overweight target increases with age (Lerner & Korn, 1972; Lawson, 1980; Cramer & Steinwert, 1998). Further, stereotypes should develop regardless of participant body size (e.g., overweight children should negatively stereotype same-body-type targets), if they have accepted the prevailing cultural standards. This assumption has also been supported by previous research (e.g., Staffieri, 1967; Lerner & Korn, 1972; Davison & Birch, 2003).

Hypotheses

The hypotheses of the current study are based on the results of past research and the cultural transmission of stereotypes and attitudes (i.e., social learning theory).

Specifically, the cultural standards of ideal body sizes (i.e., women should be thin, men should be muscular) are used to inform the current hypotheses. Based on the aforementioned theory and findings, the hypotheses tested by the current study are as follows:

1. Body size awareness will increase as a function of participant age.

2. Similar to past research, children will exhibit an anti-fat bias when ascribing attributes, selecting playmates and determining personal body size preferences (e.g., Cramer & Steinwert, 1998).
3. Similar to past research, children will display anti-fat attitudes regardless of participant body size (e.g., Staffieri, 1967; Lerner & Korn, 1972; Davison & Birch, 2003).
4. Anti-fat bias will increase as a function of participant age.
5. According to social learning theory, if any gender differences are observed, they will reflect the cultural stereotypes regarding body size ideals. Thus, children will assign more positive and fewer negative attributes to average-size boy targets and thin girl targets.

CHAPTER 2

EXPERIMENT

MethodParticipants and Design

A total of 83 predominantly white children (42 girls and 41 boys) between the ages of three and five participated in the current study. To obtain informed consent, letters were sent home to the parents of all 3- to 5-year-old children at seven local daycare facilities and preschools. The letters described the purpose and procedures of the study and asked parents or guardians to give consent for their child to participate. Signed consent forms were returned for 83 participants. However, five children did not meet the inclusion criteria used to establish task comprehension; therefore, their data were excluded from the present analysis. The mean age of the 78 qualified participants was 4.49 (range, 3.03-5.95 years). Although age was treated as a continuous variable in this study, the number of participants per age group was relatively even: 20 three year-olds, 36 four year-olds and 22 five year-olds. The BMI percentiles of most (82%) participants were within the healthy weight range ($n = 63$), 4% were underweight ($n = 3$), 10% were overweight ($n = 8$) and 4% were obese ($n = 4$). Boys and girls of varying ages were assigned to one of two conditions. Half of the participants ($n = 39$) made judgments of peer-aged girl targets (18 girls and 21 boys) and the other half ($n = 39$) were assigned to

judge boy targets (20 girls and 19 boys). This study was approved by the MSU Institutional Review Board.

Materials and Measures

Target Figures. The target figures used to elicit children's responses consisted of 108 photographs (36 photos each represented at 3 different body sizes: thin, average and overweight). Photographs were taken of 3- to 5-year-old children (18 boys and 18 girls) in the community of Helena, Montana (98 miles from data collection site), after obtaining parental consent. Helena was selected as the location for target figure photo collection as a precaution to assure that participants were not familiar with any of the children represented as target figures. For the photographs, children used as target figures stood expressionless with their feet shoulder-width apart and their arms held out to their sides. This pose was utilized because it allowed the graphic designer to effectively alter the child's body size.

After the photographs were collected, they were digitally altered using *Adobe Photoshop*© software. Each child's photograph was adjusted to obtain three different apparent body sizes: thin, average and overweight. Three versions of a single child (thin, average and overweight) comprised a stimulus set of target figures. Appendix A provides an example of a stimulus set. For this paper, the target's face is blurred in the three variations to protect the child's privacy. However, participants in this study viewed target figures whose faces were visible. In each set, body size was the only characteristic of the photograph that was modified. Thus, the target figures within each stimulus set were

wearing the same clothing, had the same features (e.g., hair and face) and stood in the same position. This provision was employed to ensure that judgments made by the participants about the stimuli were based strictly on the apparent body size of target figures. In addition, the children selected as target figures varied on many dimensions including age, gender, clothing, facial features, hair color, and hair style.

Target Figure Pilot Study. After gathering and digitally adjusting the photographs of target figures, pilot data were collected to ascertain whether or not the stimuli were perceived as they were intended to be (e.g., the thin target rated as thin, etc.). It was essential to the validity of this study that the target figures were not rated differently on any dimension other than body size and that the body size of each target figure was correctly identified. To pilot test the target figures, 126 undergraduate students from Montana State University rated the quality of each image (e.g., 1 = very poor, 4 = neither poor nor good, 7 = very good) and the body size (e.g., 1 = very thin, 4 = average, 7 = very overweight) of the targets on 7-point Likert-type scales. Undergraduates served as participants because their rating-criteria are presumed to be stricter than young children and they understand the use of Likert-type rating scales.

In a classroom setting, groups of undergraduate student participants were presented with one photograph at a time to avoid comparisons between figures. Furthermore, participants never viewed more than one body size version of any target figure in order to prevent awareness of digital modifications. The target figures used in the current study did not significantly differ based on ratings of quality within stimulus sets. Also, stimulus sets were only used for this study if the body size of the target figures

were rated in the intended direction (e.g., the overweight figure was rated as overweight) and significantly different from other figures within the set (e.g., the overweight figure was rated as significantly heavier than the average figure). A total of 45 target figure stimulus sets were pilot tested, but the 36 sets with the highest quality ratings (in addition to the other criteria) were utilized in the current study. Based on these requirements, it is assumed that participants in both the pilot and main studies were differentiating among figures primarily on basis of body size and not other features of the target figures.

Body Size Judgment Questionnaire (BSJQ). A 26-item questionnaire (see Appendix B) was developed by the author to assess how children use body size to make judgments of their peers (18 items) and to gauge task comprehension (8 items). Five items on the BSJQ were used to assess body size awareness (e.g., “Give me the picture of the child that you think looks the biggest.”). Children were asked to identify which target figure was the “smallest”, “fattest”, “skinniest” and had a “normal body.” With the exception of “normal body” item, these questions were objective and were used to determine whether or not children were able to understand the concept of body size and correctly identify the body size of their peers.

Eight items were designed to evaluate body size stereotypes (e.g., “Give me the picture of the child that you think is the nicest.”). The bipolar adjectives/phrases selected for this measure have been used in previous studies (Staffieri, 1967; Lerner & Gellert, 1969; Lerner & Korn, 1972; Brylinsky & Moore, 1994; Cramer & Steinwert, 1998) and included “meanest”, “cutest”, “ugliest”, “smartest”, “stupidest”, “has many friends”, and “has no friends.” Two items were designed to assess friendship selection (e.g., “Give me

the picture of the child that you want/do not want to play with.”) and were taken from a previous study by Cramer and Steinwert (1998).

The final three body-size-related items measured children’s own body size awareness and preferences (i.e., “Give me the picture of the child that looks like you,” “Give me the picture of the child that you want to look like,” and “Give me the picture of the child that you do not want to look like.”). For these items, children viewed same-gender targets, regardless of which gender condition they were originally assigned to.

An additional eight items focused on topics other than body size and were used to evaluate children’s understanding of the task and also served as distracter items,. It was important to intersperse distracter items, taking the focus off body size, to decrease the tendency for children to focus on their own body size and to make the topic of primary interest less obvious. For these items, children viewed pictures of various animals (e.g., dog, alligator, bunny, turtle, etc.) and objects (e.g., bench, penny, house, glue, etc.), three pictures at a time, and were asked objective questions in the same format as the other items (e.g., “fastest”, “stickiest”, “softest”, “biggest”, “tallest”, “smallest”, “coldest” and “hottest”).

A single order of questionnaire items was pre-determined and used for all participants. Research by Clark and Clark (1947) showed a distinct inclination for children who had already identified themselves with a particular target, to subsequently show preference for this type of figure. They suggested this preference “was not necessarily a genuine expression of actual preference, but a reflection of ego involvement” (p. 602). Thus, in the current study the organization of the questionnaire

was intended to minimize the participants' tendency to modify their judgments on subsequent questions based on how they answered self-concept items. For instance, if participants answered the question "Give me the picture of the child that looks like you", answers to ensuing questions may be biased in the direction of the body size they chose earlier to represent themselves. Thus, self awareness and preference items were presented after the other body size items. Two distracter items were posed first to familiarize participants with the task. The rest of the questionnaire was arranged with an equal dispersion of positive, negative, neutral (awareness), and distracter items.

Questionnaire and Stimulus Organization. Because a pre-determined order of questions was used in the BSJQ, it was necessary to control for order effects by other means. Thus, two versions of BSJQ were employed with different stimulus sets assigned to each item. The purpose of creating two versions with different item-picture pairings was to make certain that participants' selections were not contingent upon the specific target figure set assigned to it. Associating two different figure sets with each item helped to ensure that no systematic uncontrolled biases existed. In other words, any peculiarity that might be perceived within a particular stimulus set should be partially counterbalanced by having a second stimulus set paired with the same item for half the participants.

Given that the BSJQ contained 18 items pertaining to body size preference, the 36 target figure stimulus sets were divided by gender into two sets of 18 each. Participants viewed photographs of either boys or girls, with the exception of the three self awareness/preference questions, for which participants viewed same-gender target

figures. This gender division, coupled with the two versions of item-picture pairings, created four total conditions (e.g., 2 item-picture versions X 2 target figure genders) to which participants could be assigned.

Furthermore, within each stimulus set, the placement of thin, average and overweight target figures was predetermined for each BSJQ version to avoid position effects. To create this order, all permutations of body size placements were distributed equally throughout the questionnaire. This counterbalancing was necessary to ensure that participants were not simply choosing a certain body type based on its placement in the figure set (e.g., a participant chooses each figure that is placed in the middle position, regardless of question).

Body Mass Index (BMI) Z-Scores. In accordance with the Center for Disease Control NHANES Anthropometry Procedures Manual (2007) guidelines, participants' body weight and height were measured by an experimenter upon completion of the BSJQ. These measurements were taken after the task to avoid making weight and body size salient to participants before judgments were assessed. Consequently, an electronic scale and stadiometer were discretely placed out of the participants' view while completing the task. After height and weight measurements were recorded, BMI z-scores and percentiles were calculated. This calculation differs from the standard adult formula ($BMI = kg/m^2$) because BMI is both age- and gender-specific for children. The amount of body fat in children changes with age and differs between boys and girls. BMI z-scores take into account these differences and translate these scores into percentiles.

Procedure

Children with parental consent to participate were tested individually in either a separate room or a separate part of the child care center, away from peer and staff interruptions. Trained male and female undergraduate and graduate experimenters conducted all testing and in some cases, a second experimenter discreetly observed the testing sessions to ensure that the protocol was followed. The gender of experimenters was mixed relative to the gender of participants during data collection. Upon arrival at the child care centers, children were approached individually and invited to participate in game-like activities with the experimenter. If the child agreed, the experimenter escorted him or her to a quiet section of the facility. At this point, the experimenter made the child feel comfortable by engaging in a general scripted conversation (e.g., How are you doing today?). Experimenter instructions were given to each child in a scripted format (see Appendix C) before proceeding to the BJSQ.

After the practice items were completed, the experimenter proceeded with the remainder of the BSJQ. As explained above, for each question, the child was presented with a unique stimulus set of three target figures, determined by their condition assignment, and asked to “Give me the picture of the child that you think_____.” To indicate their judgments, the child was asked to pick up one picture from the stimulus set of three and hand it directly to the experimenter. This procedure eliminated any choice ambiguity or experimenter bias. The experimenter recorded the participant’s choice on a corresponding survey packet. At the conclusion of the BSJQ, the experimenter directed

the child to the electronic scale and stadiometer, and recorded his or her height and weight.

Concluding this portion of the study, the experimenter thanked the child for playing with them and led the child back to her or his regularly-scheduled activities. The entire study took an average of 10 minutes to be completed. After gathering data from each participant, a letter was sent home to parents, thoroughly explaining the purpose of the study and thanking them for allowing their child to participate.

Results

Exclusion/Inclusion Criteria

Prior to analysis, the likelihood of children correctly answering distracter questions was considered. The probability that a given child would guess and still correctly answer five or more of the eight distracter questions is .08. Using at least five (or more) correct answers as the cut-off criterion, data of five participants were discarded from the present analysis, leaving data from 78 participants, which were subjected to further analyses.

Analyses

18 Individual Body Size Items. Because the dependent variable had more than two categorical response options (thin, average and overweight figures), Multinomial Logistic Regression was used to determine the relationship between eight predictor variables and body size of the target chosen by the participant in response to each item.

Coefficients were estimated for each awareness, stereotype, friendship selection, and self-preference item.

The logistic regression model is the probability that an individual falls into a certain response group, conditioned on his or her particular vector of explanatory variables. Then the log odds of falling into one response group as opposed to another (the “logit”) has a linear relationship with the explanatory variables (Agresti, 2002).

In this study, the model is an 8x1 vector containing main effect coefficients for: 1) gender of participant, 2) target gender, 3) age of participant in months, 4) photograph order, 5) BMI z-score plus interaction coefficients estimated for 6) participant gender by target gender, 7) participant gender by participant age in months, and 8) target gender by participant age in months. A full-factorial analysis was used for randomly selected items and yielded no significant effects for any interactions, thus the model was trimmed. However, the remaining three interactions (6-8 above) were examined in the current study because specific predictions were made for them. In addition, only these three interactions were included as predictor variables due to the small sample size in the current study.

The predictor variables were participant age in months, BMI z-score, participant gender and gender of target figures. Both thin and overweight target figures were used as reference categories in order to assess differences between all three pairs of body size categories (i.e., thin-average, thin-overweight, and overweight-average).

All interpretations contained in this paper corresponding to the logistic regression analyses are reported as exponentiated β -values (i.e., $\exp [\beta] = _$). Logistic regression

models are fit in terms of the log-odds. However, log-odds are difficult to interpret. Thus, the exponentiated β -values enable results to be expressed in terms of odds ratios (i.e., relative risk ratio). After exponentiation, all explanatory variables have a linear relationship with the participants' responses.

Composite Scores. In addition to the specific analyses used for each Body Size Judgment Questionnaire (BSJQ) item, composite score variables were also created and analyzed to test hypotheses. Composite scores were constructed for body size awareness items, stereotype items and friendship selection items. The body size awareness composite score was created by summing each participant's correct responses to the five awareness items. Thus, an awareness composite score of 0 would mean that the participant did not correctly answer any awareness items, while a score of 5 would indicate that all awareness items were answered correctly. The composite scores created for the stereotype and friendship selection items were used to specifically assess anti-fat bias of participants. Therefore, each time a participant selected the overweight target for a positive item (e.g., "nicest", "cutest", and "want to play with"), a score of 0 (no anti-fat bias) was assigned. Accordingly, if a thin or average target was chosen for a positive item, a score of 1 (anti-fat bias) was assigned. The reverse was true for scoring of negative items (e.g., "meanest", "ugliest", and "do not want to play with"). A score of 0 (no anti-fat bias) was assigned when thin or average targets were selected for a negative item and a score of 1 (anti-fat bias) was assigned when the overweight target was chosen. For the stereotype items (8), composite scores could range from 0 (no anti-fat bias) to 8

(maximum anti-fat bias). For friendship selection items (2), composite scores could range from 0 (no anti-fat bias) to 2 (maximum anti-fat bias).

General, full factorial Multiple Regression analyses were conducted for each composite score variable, including the same aforementioned predictor variables. However, for each analysis, participant age was the only significant predictor variable. Thus, all other predictor variables were trimmed from the model and simple Linear Regression analysis was conducted for each composite score variable.

An α -level of .05 was used for all statistical tests. All results presented below have accounted for random variability in the sampling scheme. For example, because participant BMI z-score was not controlled for prior to cell assignment, any variability caused by this was accounted for in the model.

Correlations Between Composite Scores, Age, and BMI Z-Scores

The relationship between the composite variables (body size awareness, anti-fat stereotype bias, and anti-fat friendship selection bias) and participant age and BMI z-scores were examined (see Table 1). As predicted (hypothesis 3), participant BMI z-scores were not significantly correlated with anti-fat bias scores. Consistent with hypothesis 4, a significant positive correlation between anti-fat bias scores and age was found. Additionally, the two anti-fat composite scores were significantly correlated with one another. Interestingly, body size awareness composite scores were not correlated with age. However, a significant positive correlation was observed between body size awareness and anti-fat bias.

Table 1. Correlations Between Composite Score Variables and Participant Age, and BMI Z-Scores.

| | Age | BMI Z-Scores | Body Size Awareness | Anti-Fat Stereotype | Anti-Fat Friendship Selection |
|-------------------------------|-----|--------------|---------------------|---------------------|-------------------------------|
| Age | — | -.148 | .214 | .432** | .415** |
| BMI Z-Score | | — | .095 | -.167 | -.014 |
| Body Size Awareness | | | — | .243* | .414** |
| Anti-Fat Stereotype | | | | — | .477** |
| Anti-Fat Friendship Selection | | | | | — |

Note. ** = Correlation is significant at the 0.01 level (2-tailed). * = Correlation is significant at the 0.05 level (2-tailed).

Body Size Awareness Composite Score

A marginally significant association between body size awareness and age was found: as age increases, so does body size awareness ($F(1, 76) = 3.63, p = .06$). However, the “normal body” item was determined to be subjective prior to data collection, which could have led participants to identify the target that they believed to be “normal” rather than average-sized. If this occurred, the “normal body” item would not be an adequate measure of body size awareness. Thus, a second body size awareness total score was computed that did not include participants’ responses for this item. Similar to the results of the first body awareness total score (including the “normal body” item), a significant positive association between age and the second body size awareness total

score was found ($F(1, 76) = 5.15, p = .026$) when the “normal body” item was not included. This result supports the hypothesis (hypothesis #1) that body size awareness increases as a function of age.

Anti-Fat Stereotypes Composite Score

A highly significant association between anti-fat bias on stereotype items and age was found (see Figure 1): as age increases, so does anti-fat bias ($F(1, 76) = 17.46, p < .001$). Importantly, Figure 1 shows that even the youngest participants (36-42 month-olds) displayed anti-fat bias above chance levels. This result supports the hypotheses (#2 and #4) that anti-fat bias will be exhibited when assigning attributes to targets and should increase as a function of age.

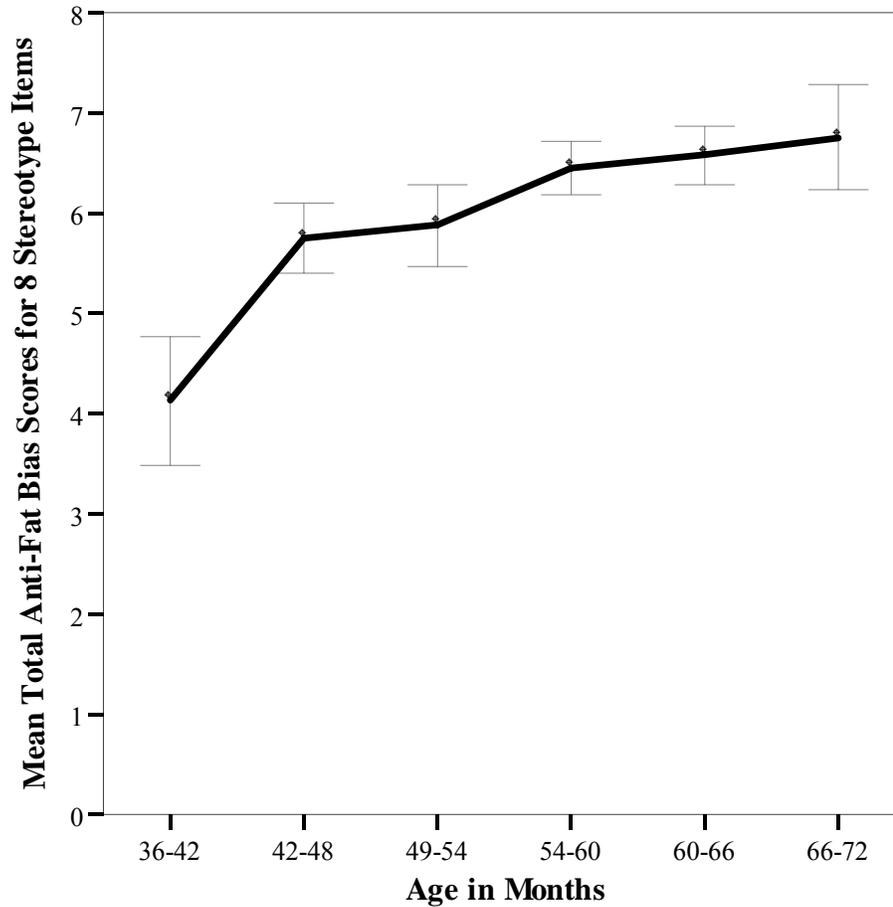


Figure 1. Participants' Mean Total Anti-Fat Bias Scores for 8 Stereotype Items as a Function of Participant Age.

Anti-Fat Friendship Selection Composite Score.

A significant association between anti-fat bias on friendship selection items and age was found: as age increases, so does anti-fat bias based on friendship selection items ($F(1, 76) = 15.82, p < .001$). This result also supports the hypotheses (#2 and #4) that

anti-fat bias will be exhibited when making friendship selections and should increase as a function of age.

In addition to analyses of composite score variables, further analyses were conducted to examine the relationship between predictor variables and individual BSJQ items. These analyses allowed for more specific interpretations of the results and provided more information about the types of responses elicited by certain questions.

Awareness of Targets' Body Size.

For awareness items, participant gender, target gender, and the participant gender by target gender interaction were not found to be significant predictors of participant response. Consequently, there is no evidence to suggest that gender of the participant influenced body size awareness. However, results did indicate that for each one-month increase in age, the odds that participants correctly chose the thin target as “skinniest” in comparison to either the overweight ($exp [.134] = 1.143$; $p = .011$) or average sized targets ($exp [.071] = 1.073$; $p = .038$) increased. Thus, the older a child was, the more accurate they were at identifying the skinniest targets.

In regards to the “fattest” target selection, for each one-month increase in age, the odds that participants chose the overweight target in comparison to the thin target increased by 1.162 ($p = .005$). However, in this case age was not associated with a differential awareness of fatness in comparison to overweight and average targets. Hence, as age increased, children were more accurate at distinguishing between the overweight and thin targets in terms of their body size, but not between the overweight and average

targets (on this same dimension). As predicted (hypothesis #4), it appears that the ability of children to correctly classify peers as skinniest and fattest improves with age.

Children were not able to differentiate between targets using the terms “smallest” or “normal body.” However, when selecting the “biggest” target, for each month increase in age, the odds increased that participants chose the average target in comparison to the overweight ($exp [.129] = 1.137; p = .016$) and thin targets ($exp [.132] = 1.141; p = .026$). Thus, as participant age increases, so does the tendency for participants to incorrectly identify the average target as the biggest. These results suggest that older children had greater difficulty classifying peers’ body sizes using the adjectives “biggest” and “smallest”.

A significant association between participant body size and targets chosen for the “normal body” item was found. For each single point increase in participant BMI z-score, there was a 3.24 times greater likelihood of choosing the average target figure as having a “normal body” in comparison to the overweight target ($p = .023$). This same pattern was found in comparison to the thin target, but this result only approached statistical significance ($p = .075$). Nevertheless, both results suggest that as participant body size increases, so does the odds of correctly choosing the average sized target as having a “normal body.” This was the only item that yielded significant results with regards to participant BMI z-scores. However, this result was not directly in opposition to hypothesis 3, because no specific predictions were made about how participant BMI z-scores would influence body size awareness.

Individual Stereotype Items

Has Many Friends/Has No Friends. No significant associations between predictor variables and target figure selected for these items were found.

Nicest/Meanest. A significant association was found between participant age and target figure size chosen as the “nicest”. For each month increase in age, the odds that participants chose the thin target as nicest, relative to the overweight target, increased by 1.157 ($p = .014$). For the average target, the odds that it was selected as the “nicest” increased by 1.142 ($p = .03$), relative to the overweight target. There was no significant difference in apparent preference between the thin and average targets. Thus, as age increased, the overweight target was least likely to be identified as the “nicest” target.

In terms of the “meanest” item, the odds that participants who viewed boy targets chose the average target as opposed to the overweight target were greater than the odds of participants who viewed girl targets ($p = .025$). However, this association was qualified by an interaction, showing that as age increased, children who viewed photographs of boys were .822 times less likely to choose the average target as “meanest” in comparison to the overweight target ($p = .05$) than children who viewed photographs of girls. These results demonstrate that average boy targets were chosen as the “meanest” more often than overweight boy targets, but this pattern reverses as age increases. There were no significant associations between “meanest” figure selected and participant gender or BMI z-score.

Smartest/Stupidest. A significant association was found between participant gender and the body size of targets selected as the “stupidest.” The odds that boys chose the average target as stupidest was significantly decreased in comparison to both the thin ($\exp [-1.881] = .152$; $p = .037$) and overweight ($\exp [-1.345] = .260$; $p = .053$) targets, relative to girl participants. Thus, boy participants selected both thin and overweight targets as the “stupidest.” A marginally significant influence of age was found for “smartest”, showing that children were more likely to choose the thin target as most intelligent in comparison to the overweight target ($\exp [.066] = 1.069$; $p = .058$). No significant associations between targets selected for these items and target gender or participant BMI z-scores were observed.

Cutest/Ugliest. A significant association between age and body size of targets identified as the “ugliest” was found. For each month increase in age, children were 1.104 times more likely to choose the overweight figure as “ugliest” in comparison to the average target ($p = .028$). Thus, as age increased, so did the propensity to associate overweight body sizes with ugliness. Ratings of ugliness for the thin target were not significantly different from those for the other two targets.

For the “cutest” item, only one participant (a girl) chose the overweight target (see Figure 1). This result is consistent with the aforementioned “ugliest” results; thus, overweight is not associated with the concept “cutest.” However, because there is a cell containing only 0 or 1 observation, odds for these cells cannot be estimated (Agresti, 2002, p.70). As a result, the response in this case was binomial: thin or average. Results

indicated that differences in selection odds between thin and average targets were non-significant.

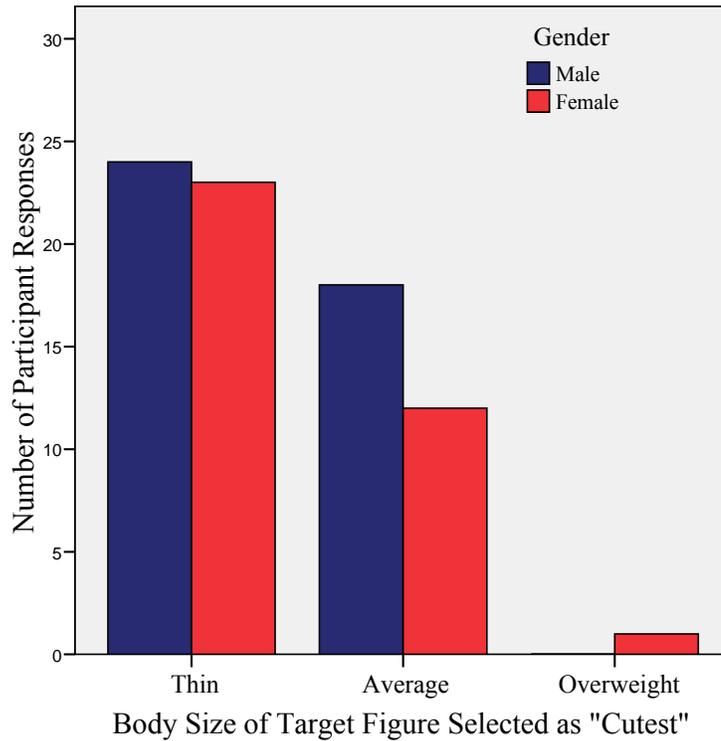


Figure 2. The number of participants who selected each target figure body size as the “cutest” target.

Individual Friendship Selection Items

Want to Play With. A significant association was found between target gender and body size of targets selected as the one participants wanted “to play with.”

Participants who viewed photographs of boys were 7.334 times more likely than participants who viewed girls to choose the average target as the one they wanted “to play with” in comparison to the overweight boy target ($p = .043$). This same pattern was

found when comparing the average boy target to the thin boy target, but this result was only marginally significant ($exp [1.17] = 3.223; p = .059$). Thus, boys and girls prefer to play with average-size boy targets. However, there were no significant findings regarding the girl targets.

Do Not Want to Play With. A significant association was found between age and body size of targets participants identified as the one they did “not want to play with.” For each month increase in age, participants were 1.11 ($p = .004$) and 1.185 ($p = .022$) times more likely to choose the overweight figure as the target that they did “not want to play with” in comparison to thin and average targets, respectively.

Interestingly, participant gender was also associated with the body size of targets selected for this item. Boy participants chose the average target figure significantly more often than girls as the target they did “not want to play with” in comparison to the thin target ($exp [3.743] = 42.244; p = .023$). Participant BMI z-score was not a significant predictor of which target body size was selected as the one that participants “did not want to play with.”

Individual Body Size Self Awareness and Preference Items

Self Body Size Awareness. No significant results were found for associations between predictor variables and the body size of targets chosen as the one that “looks like you.” Because BMI z-score was not significantly associated with responses to this item, it appears that children do not accurately associate this item with their own body size.

Non-Preferred Self Body Size. A significant association between age and body size of targets was found. For each month increase in age, boys and girls were less likely to choose the thin ($exp [-2.01] = .818; p = .01$) or average-sized targets ($exp [-.341] = .711; p = .035$) as the one they preferred not to look like, in comparison to the overweight target.

A significant participant gender by age interaction qualified the above associations. For each month increase in age, the odds that boys chose the thin ($exp [.190] = 1.209; p = .033$) and average ($exp [.368] = 1.445; p = .029$) targets (reference category = overweight target) increased, in comparison to girl odds. This result indicates that older boys are more likely than older girls to prefer *not* to be thin or average in body size. This result is consistent with cultural body size ideals (hypothesis 5), because girls should prefer to have smaller body sizes than boys.

Preferred Self Body Size. For the “want to look like” item, no girls and only 3 boys chose the overweight target (see Figure 3). Again, because there is a cell containing only 0 or 1 observation, odds for these cells cannot be estimated (Agresti, 2002, p.70). As a result, the response in this case was binomial: thin or average. Results indicated that differences in selection odds between thin and average targets were non-significant.

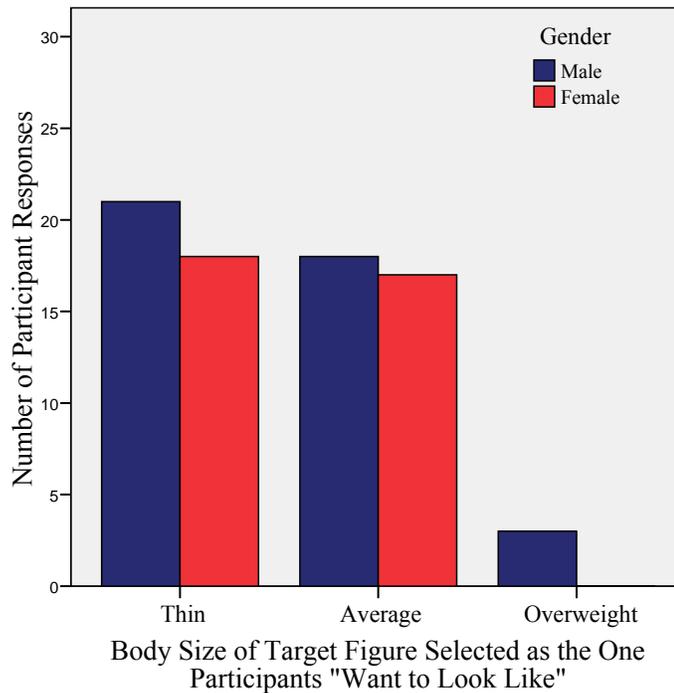


Figure 3. The Number of Participants Who Selected Each Target Figure Body Size as the One They “Want to Look Like.”

Discussion

The current study is the first to examine body size awareness, stereotypes, friendship selection, and personal preferences of preschool children, using photographs of real children as target stimuli. The methodology used in this study was an effort to overcome problems of research by attempting to control for potentially confounding factors (e.g., facial attractiveness) while maintaining the realistic nature of participant judgments. This study is also one of the few studies to explicitly test body size awareness of preschool children within the context of the fat bias literature. Importantly, by utilizing digitally altered photographs of real children, the present study was able to test the

generalizability of past findings to a testing situation more closely resembling a real-world situation.

As predicted (hypothesis #1), body size awareness increased in children as a function of age. However, it was surprising to find that children were more accurate at identifying the body size of targets for the terms “skinniest” and “fattest” as opposed to “smallest” and “biggest.” It is possible that the words “skinniest” and “fattest” are used more regularly than the terms “smallest” and “biggest” when referring to body size. However, it was expected that children would be able to translate and correctly apply the meaning of “smallest” and “biggest” to various situations, including identification of different body sizes. It seems possible that for these children, the terms “smallest” and “biggest” connote different concepts (e.g., short and tall) than the terms “skinniest” and “fattest.” Thus, further research should be conducted to explore the meaning of these adjectives in young children’s vocabulary.

Several of the current results confirmed the hypothesis (#2) that children would exhibit an anti-fat bias when making body size judgments. Specifically, the overweight target was significantly less likely to be identified by children as the “nicest” or “cutest” target. In fact, only one of 78 children chose the overweight target as the “cutest.” Similarly, children assigned attributes such as “stupidest” and “ugliest” significantly more often to the overweight target than to the other targets. Using a composite score, the results replicated past findings, showing that children as young as 3 years-old exhibited anti-fat bias (Cramer & Steinwert, 1998).

In terms of friendship selection, children also chose the overweight target as the one they did “not want to play with”, similar to past research (Cramer & Steinwert, 1998). Thus, overweight children are not only more likely to be assigned negative attributes, they are also less likely to be selected as playmates by their peers. This finding suggests that children prefer not to be friends with peers who are associated with negative traits. However, it is unknown whether the underlying cause of this decision is because children want to avoid negative interactions with others or because they themselves do not want to experience “stigma by association”, being denigrated by others for associating with members of a stigmatized group (Neuberg, Smith, Hoffman, & Russell, 1994).

Self-preference-related items reflected a similar anti-fat bias. Similar to past studies, children in the current study chose the overweight target significantly more often than the others as the figure they did “not want to look like” and only three children selected the overweight target as the one they did “want to look like” (Cramer & Steinwert, 1998; Musher-Eizenman et al., 2004; Margulies et al., 2008). This finding along with the friendship selection findings has implications beyond those of the adjective assignment results. While anti-fat adjective assignment certainly suggests that children are aware of body size stereotypes, further conclusions cannot be made. However, in regards to the friendship selection and self-preference items, anti-fat judgments can be considered to reflect prejudicial attitudes. Thus, children are not only aware of anti-fat stereotypes, they also endorse these views by preferring not be associated with or look like overweight individuals. Taken together, the stereotype,

friendship preference, and self-preference results indicate that anti-fat attitudes are accessed when children make body size judgments, even in these very young pre-school age children.

Results of the current study also support the prediction that participant body size would not affect anti-fat bias judgments (hypothesis #3). In fact, participant body size was not even a significant predictor of participants' awareness of their own body sizes. In this study, participant body size only affected responses to one item: correct identification of the target with the "normal body" (i.e., average target) increased as a function of participant BMI z-score. It is unclear why these results occurred for the normal body item only and not the others. It seems possible that larger children are hyper-aware of body size. However, if this were the case, they should have been more accurate when identifying targets in response to other body size awareness items as well. The term "normal body" was used to assess awareness of average-size targets because it was predicted to be understood by children ages 3 to 5. Nevertheless, the term "normal" is inherently subjective. Thus, this result could be a reflection of the differential meaning of the term "normal body" for children of varying body sizes.

Although the "normal body" item was intended as a measure of how children judge body sizes of other people, this item may have also implicitly (and unintentionally) asked children if they themselves are "normal." Because children with larger body sizes chose the average target as "normal" significantly more often than the overweight target, it is possible that as participant body size increases, the child may begin to feel that their body size is not "normal." If this assumption proves to hold merit in future studies, it

would imply that children are applying anti-fat biases to themselves as well as to others. However, further research is needed to better understand how children interpret the term “normal” and whether or not they relate it to their own body size. Additional research should utilize both the “normal body” item and another item that has no implications beyond body size awareness of average targets. This method would help tease apart potentially different meanings of each item.

The prediction that anti-fat bias should increase with participant age (hypothesis #4) was supported by the current results. Older children did not want to play with the overweight target. Likewise, older children identified the overweight target as the ugliest, and were less likely to choose the overweight target as the “nicest.” Additionally, analyses of the composite scores created for anti-fat bias of stereotype and friendship preferences showed that anti-fat bias increased as a function of age.

It was also predicted (hypothesis #5) that any gender differences in body size related judgments should reflect the American body size ideals that women should be thin and men should be muscular (Furnham et al., 2002). In most cases, gender did not significantly influence participant responses to items, but a few interesting results emerged. Older boys preferred not to look like the thin or average targets, more often than older girls. This result does seem to reflect the body size ideals typical of adults in the United States and is in line with the social learning theory. As children age, they should experience greater exposure to societal standards. Thus, as age increases, girls should be less aversive toward the idea of resembling thinner targets than boys, which was found in this study.

In some cases, however, cultural standards did not seem to account for gender differences. Evidence showed that average boy targets were selected as the “meanest”, but this was not the case for girl targets. This result is consistent with previous findings (Ryckman et al., 1989) showing that undergraduate students also rated average male targets as mean. However, it is inconsistent with the prediction that average-size boy targets should be associated with positive traits because they are nearest to the male ideal body size.

Similarly, children indicated that they preferred to play with the average-size boy targets, relative to the overweight targets. However, no significant differences emerged for playmate preference when children were presented with girl target figures. Although this result supports the notion that average sized boy targets should be preferred, the tendency for children to prefer thin girl targets was not apparent. However, this finding was the only significant result of the friend preference item which may indicate that generally, children do not have a strong preference for which types of peers they would like “to play with”, but do have a strong preference for who they “do not want to play with.”

Furthermore, boy participants were less likely than girls to choose the average target as the “stupidest” target compared to the thin and overweight targets. In support of this result, overweight and thin targets have received correspondingly negative ratings from boys in the past (e.g., Staffieri, 1967). However, based on social learning theory and cultural body size standards, there does not seem to be an objective basis for this gender difference. According to our predictions, the average boy targets and thin girl targets,

should have been chosen less often as the “stupidest” by all children. In addition, the few gender differences that emerged in this study did not follow a similar trend. Thus, it is currently unclear why gender differences occurred for these specific items.

Limitations

Although the stimuli used in this study were created using photographs of real children, they still cannot reproduce actual face-to-face encounters between people of varying body sizes. Thus, anti-fat attitudes found in this study may not accurately predict children’s actual judgments in certain real-world scenarios. However, this and previous research suggest that body size characteristics can affect children’s first impressions (Jarvie, Lahey, Graziano, & Framer, 1983), attitudes, judgments, and choice behaviors.

Another limitation of this study may have resulted from use of the superlative adjective question technique. Although an attempt was made to avoid the forced-choice format, the rank-ordering technique may also be considered a forced choice procedure (Jarvie, et al., 1983). Allowing participants to rate preferences and attributes on a Likert-type scale would of course be the preferred method of assessment. However, implementing this technique with young children (3 year-olds), would prove very difficult (Musher-Eizenman et al., 2004). Also, prior studies, using methods other than forced-choice, have found the same anti-fat biases present in the current study (Stager & Burke, 1982). Therefore, it is presumed that results of the present study are not simply an artifact of the forced-choice, superlative adjective method. It also seems possible that the meaning of superlative adjectives (i.e., the most or the least) may not be readily apparent to young children. For example, preschool-aged children may not interpret the word

“nice” as different from the word “nicest.” Thus, more extensive pilot-testing is needed to confirm the validity of this technique.

In regards to the questionnaire, the order of items used on the BSJQ could not be fully counter-balanced due to necessary placement of the self-identification items at the end of the questionnaire. While problems due to this limitation are thought to be negligible, it is problematic nonetheless. For example, it is possible that any effects of age on the final questionnaire items may have been a result of increased attention-spans in older children, allowing for more concentration by these children during the final portion of the study. However, the entire study required only 10 minutes of attention for each child. Thus, it is presumed that fatigue or diminished attention should not have significantly influenced participant judgments.

Although measures were taken to avoid eliciting a cultural stereotype, and instead encourage a personal opinion (i.e., “you think”), there is no way of knowing whether or not this was accomplished. Providing children in the current study with the opportunity to formally explain their choices would have afforded more information about the rationale for their judgments. This additional step might have also provided insight into age differences between children who could verbalize whether and how their decisions were based on body size (e.g. Cramer & Steinwert, 1998). Additionally, because the participants in this study were primarily from white, middle-class families, the generalizability of these results to children of different cultures, socio-economic statuses, and races is limited. Finally, participants in this study were primarily in the “healthy weight” body size category. Thus, further research needs to examine body size judgments

of both under and overweight children to better understand whether or not participant BMI influences stereotyping and attitudes.

Future Directions

In future studies, it might be helpful to ask children to identify which target figures (if any) fit or do not fit with certain adjectives. This way, children can choose 0, 1, 2 or all 3 of the body size categories for trait assignment. A technique like this would help to gauge the subtle nuances of body size stereotypes and determine if stereotyping exists without forced-choice methods.

It is clear from the present and past studies that body size stereotypes exist in children as young as three (e.g. Cramer & Steinwert, 1998). Consequently, another future direction of this study would be to expand the age group of participants to include both younger and older children in a single study. Although it would be difficult, it is important to examine the body size stereotype knowledge of two year-olds. This would help to extend the developmental timeline of anti-fat biases and body size preferences and directly compare ratings between age groups. Furthermore, directly comparing both preschool-aged and school-aged children would broaden the spectrum of observation and paint a clearer picture regarding major age-related changes in body size attitudes.

Specifically, it is imperative to identify when children begin to internalize cultural body size ideals. Research has shown that young girls (6-8 years-old) have greater body dissatisfaction than boys, and that boys and girls become more aware of dieting as age increases (Lowes & Tiggeman, 2003). In turn, both body dissatisfaction and dieting have been associated with increased risk of developing eating disorders (e.g., Polivy &

Herman, 1993). Although similar ratings for average and thin targets were found in the current study, more information is needed about how this pattern changes as a function of age.

It may also be beneficial for researchers to replicate the current study using digitally altered photographs of adults. It is possible that children do indeed endorse the cultural body size ideals for older targets but not for peer-age targets. Typically, children who are underweight are seen as unhealthy or malnourished, which is why children may not identify this body size as the ideal for girls this age. Similarly, because young children are not characteristically muscular, the average-size targets used in this study were also not muscular. Thus, body size ideals for boys may not have been found in the current study because a muscular target was not provided as a target option. Potentially, cultural body size ideals might emerge in young children if judgments were made about the age group for which the ideals are typically promoted.

Another important future direction for this research would be to conduct longitudinal studies that examine whether body size attitudes in young children are predictors of future attitudes or behaviors. For example, children who exhibit strong anti-fat attitudes may be more likely to diet, develop eating disorders, and discriminate against overweight individuals. In contrast, children who endorse anti-fat attitudes at a young age may have a decreased the likelihood of becoming obese later in life.

Future research should also investigate ways to reduce negative body size attitudes in children. Some programs have been used to educate children about body size acceptance and encourage diversity (e.g., Irving, 2000). Other research has suggested that

an effective way to reduce anti-fat bias may be to supplement existing programs with information about factors contributing to obesity that are not behaviorally controlled (e.g., Musher-Eizenman et al., 2004), thus, taking some of the responsibility off overweight individuals. Based on the current study, preschool-age children are already exhibiting anti-fat stereotypes and prejudice. It is clear that for these types of programs to be highly effective it is necessary to offer them to children who are not yet enrolled in elementary school.

Furthermore, it is also essential to directly compare children's attitudes to those of their parents. The results of this study generally support social learning theory, which suggests that attitudes of direct caregivers most likely impact those of their children. Research has shown that nine year-old girls were more likely to endorse fat stereotypes when interactions with their peers and parents were body and weight-loss focused (Davison & Birch, 2004). These findings necessitate the same types of comparisons among preschool-aged children and their parents.

Conclusions

Results of this study generally replicate past findings of anti-fat attitudes in preschool-aged children (e.g., Cramer & Steinwert, 1998; Turnbull et al., 2000; Margulies et al., 2008). Thus, it seems that body size stereotypes are elicited by a variety of stimuli and are pervasive among very young children. In fact, research has shown that bias toward overweight targets has increased by 40.8% over a 40 year span (Latner & Stunkard, 2003). Implications of the correspondingly increased rates of obesity and body

size stereotypes suggest a pessimistic outlook for the future unless further increases in obesity can be prevented and/or overweight bias can be mitigated.

According to results of the present study, overweight children may have difficulty making and maintaining friends. Similarly, the tendency to view overweight children as “ugly”, may lead to increased teasing by peers, siblings, or even parents. These negative childhood experiences have the potential to severely damage self-esteem and diminish body satisfaction. In turn, the risk for developing eating disorders, depression, and suicidal ideation (Eisenberg et al., 2003) also increase. It is crucial that our society make a concerted effort to change the way overweight people are perceived. Mainstream media (e.g., magazines and television) need to reform their body size standards and begin to increase the number of overweight individuals who are positively represented. Similarly, parents, teachers, and other potential child role models must begin to encourage body size acceptance and healthful living. Efforts have been made in the past to reduce stereotypes, prejudice and discrimination towards women and African Americans. These same efforts are now needed in the case of overweight and obese individuals and they must obviously begin at the earliest possible age.

REFERENCES CITED

- Agresti, A. (2002). *Categorical Data Analysis, 2nd Edition*. Hoboken, NJ: John Wiley and Sons, Inc.
- Allport, G.W. (1954). *The nature of prejudice*. New York: Anchor.
- Anesbury, T. & Tiggeman, M. (2000). An attempt to reduce negative stereotyping of obesity in children by changing controllability beliefs. *Health Education Research, 15*, 145-152.
- Bandura, A. (1977). *Social learning theory*. Upper Saddle River, NJ: Prentice Hall.
- Bandura, A. (1986). *Social foundations of thought and action*. Upper Saddle River, NJ: Prentice Hall.
- Barlett, C.P., Vowels, C.L. & Saucier, D.A. (2008). Meta-analyses of the effects of media images on men's body-image concerns.
- Baum, C. & Ford, W.F. (2004). The wage effects of obesity: A longitudinal study. *Health Economics, 13*(9), 885-889.
- Bell, S., & Morgan, S. (2000). Children's attitudes and behavioral intentions toward a peer presented as obese: Does a medical explanation for the obesity make a difference? *Journal of Pediatric Psychology, 25*, 137-145.
- Benas, J.S. & Gibb, B.E. (2008). Weight-related teasing, dysfunctional cognitions, and symptoms of depression and eating disturbances. *Cognitive Therapy Research, 32*(2), 143-160.
- Brylinsky, J.A., & Moore, J.C. (1994) The identification of body build stereotypes in young children. *Journal of Research in Personality, 28*, 170-181.
- Carr, D. & Friedman, M.A. (2005). Is obesity stigmatizing? Body weight, perceived discrimination, and psychological well-being in the United States. *Journal of Health and Social Behavior, 46*(3), 244-259.
- Cawly, J. (2004). The impact of obesity on wages. *Journal of Human Resources, 39*(2), 451-474.
- Clark, K.B. & Clark, M. (1947). Racial identification and preference in Negro children. In T.M. Newcomb & E.L. Hartley (Eds.), *Readings in social psychology* (pp.169-178). New York: Holt.

- Centers for Disease Control and Prevention. (2007). National health and nutrition examination survey (NHANES): Anthropometry procedures manual. Retrieved September 15, 2008 from <http://cdc.gov>.
- Centers for Disease Control and Prevention. (2009). Childhood overweight and obesity. Retrieved February 12, 2009 from <http://cdc.gov>.
- Cogan, J.C., Bhalla, S.K., Sefa-Dedeh, A., & Rothblum, E.D. (1996). A comparison study of United States and African students on perceptions of obesity and thinness. *Journal of Cross-Cultural Psychology*, 27(1), 98-113.
- Cramer, P., & Steinwert, T. (1998). Thin is good, fat is bad: How early does it begin? *Journal of Applied Developmental Psychology*, 19(3), 429-451.
- Davison, K.K., Birch, L.L., (2004). Predictors of fat stereotypes among 9-year-old girls and their parents. *Obesity Research*, 12, 86-94.
- Eagly, A. & Diekmann, A. (2005). What is the problem? Prejudice as an attitude-in-context. In Dovidio, J., Glick, P. & Rudman, L. (Eds.), *On the nature of prejudice: Fifty years after Allport*, (pp. 19-35). Malden, MA: Blackwell Publishing.
- Eisenberg, M.E., Neumark-Sztainer, D. & Story, M. (2003). Associations of weight-based teasing and emotional well-being among adolescents. *Archives of Pediatrics & Adolescent Medicine*, 157(8), 733-738.
- Furnham, A., Badmin, N., & Sneade, I. (2002). Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *Journal of Psychology*, 136, 581-596.
- Garnder, R.M., Friedman, B.N., Jackson, N.A. (1999) Hispanic and white children's judgments of perceived and ideal body size in self and others. *The Psychological Record*, 49, 555-564.
- Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. New York, NY: Simon & Schuster Inc.
- Hebl, M.R., Ruggs, E.N., Singletary, S.L. & Beal, D.J. (2008). Perceptions of obesity across the lifespan. *Obesity*, 16, S46-S52.
- Heinberg, L.J., & Thompson, J.K. (1995). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ). *International Journal of Eating Disorders*, 17, 81-89.

- Hilton, J.L., & von Hippel, W. (1996). Stereotypes. *Annual Review of Psychology*, 47, 237-271.
- Irving, L.M. (2000). Promoting size acceptance in elementary school children: The EDAP puppet program. *Eating Disorders: The Journal of Treatment and Prevention*, 8, 221-232.
- Jarvie, G.J., Lahey, B.L., Graziano, W., & Framer, E. (1983). Childhood obesity and social stigma: What we know and what we don't know. *Developmental Review*, 3, 237-273.
- Kraig, K.A. & Keel, P.K. (2001). Weight-based stigmatization in children. *International Journal of Obesity*, 25, 1661-1666.
- Latner, J.D., & Stunkard, A.J. (2003). Getting worse: The stigmatization of obese children. *Obesity Research*, 11(3), 452-456.
- Lawson, M.C. (1980). Development of body build stereotypes, peer ratings, and self-esteem in Australian children. *The Journal of Psychology*, 104, 111-118.
- LeBow, M. (1988). Attitudes, perceptions, and practices of Canadian school children towards obesity. *Journal of Obesity Weight Regulation*, 7, 43-55.
- Leit, R.A., Gray, J.J., & Pope, H.G. (2002). The media's representation of the ideal male body: A cause for muscle dysmorphia? *International Journal of Eating Disorders*, 31, 334-338.
- Lerner, R.M., & Gellert, E. (1969). Body build identification, preference, and aversion in children. *Developmental Psychology*, 1(5), 456-462.
- Lerner, R.M., Knapp, J.R. & Pool, K.B. (1974). Structure of body-build stereotypes: A methodological analysis. *Perceptual and Motor Skills*, 39, 719-729.
- Lerner, R.M., & Korn, S.J. (1972). The development of body-build stereotypes in males. *Child Development*, 43, 908-920.
- Lowes, J., & Tiggeman, M. (2003). Body dissatisfaction, dieting awareness and the impact of parental influence in young children. *British Journal of Health Psychology*, 8, 135-147.
- Margulies, A.S., Floyd, R.G. & Hojnoski, R.L. (2008). Body size stigmatization: An examination of attitudes of African American preschool-age children attending head start. *Journal of Pediatric Psychology*, 33(5), 487-496.

- Musher-Eizenman, D.R., Holub, S.C., Barnhart Miller, A., Goldstein, S.E., Edwards-Leeper, L. (2004). Body size stigmatization in preschool children: The role of control attributions. *Journal of Pediatric Psychology*, 29, 613-620.
- Musher-Eizenman, D.R., Holub, S.C., Edwards-Leeper, L. Persson, A.V., & Goldstein, S.E. (2003). The narrow range of acceptable body types of preschoolers and their mothers. *Applied Developmental Psychology*, 24, 259-272.
- Penny, H., & Haddock, G. (2007). Anti-fat prejudice among children: The “mere proximity” effect in 5-10 year olds. *Journal of Experimental Social Psychology*, 43, 678-683.
- Polivy, J., & Herman, C.P. (1993). Etiology of binge eating: Psychological mechanisms. In C.G. Fairburn & G.T. Wilson (Eds.), *Binge eating: Nature, assessment and treatment* (pp. 50-76). New York: Guilford.
- Puhl, R. & Brownell, K.D. (2001). Review: Bias, discrimination, and obesity. *Obesity Research*, 9(12), 788-805.
- Ryckman, R.M., Robbins, M.A., Kaczor, L.M., & Gold, J.A. (1989). Male and female raters' stereotyping of male and female physiques. *Personality and Social Psychology Bulletin*, 15(2), 244-251.
- Smolak, L. (1996). Methodological implications of a developmental psychopathology approach to the study of eating problems. In L. Smolak & M.P. Levine (Eds.), *The developmental psychopathology of eating disorders: Implications for research, prevention, and treatment* (pp. 31-55). Mahwah, NJ: Lawrence Erlbaum.
- Staffieri, R.J. (1967). A study of social stereotype of body image in children. *Journal of Personality and Social Psychology*, 7(1), 101-104.
- Stager, S.F. & Burke, P.J. (1982). A reexamination of body build stereotypes. *Journal of Research in Personality*, 16, 435-446.
- Swami, V., Furnham, A., Amin, R., Chaudhri, J., Joshi, K., Jundi, S., Miller, R., Mirza-Begum, J., Begum, F.N., Sheth, P. & Tovée, M.J. (2008). Lonelier, lazier, and gets teased: The stigmatizing effect of body size. *The Journal of Social Psychology*, 148(5), 577-593.
- Turnbull, D.J., Heaslip, S., & McLeod, H.A. (2000). Pre-school children's attitudes to fat and normal male and female stimulus figures. *International Journal of Obesity*, 24, 1705-1706.

White, D.R., Mauro, K., & Spindler, J. (1985). Development of body-type salience: Implications for early childhood educators. *International Review of Applied Psychology*, 34, 433-442.

APPENDICES

APPENDIX A

EXAMPLE STIMULUS SET OF TARGET FIGURES



Example of a Thin Target Figure



Example of an Average Target Figure



Example of an Overweight Target Figure

APPENDIX B

BODY SIZE JUDGMENTS QUESTIONNAIRE

BODY SIZE JUDGMENTS QUESTIONNAIRE VERSION "A"

1. Give me the picture of the thing that you think looks the coldest. (ice cream, house, sun)
PRACTICE ITEM

Order: ice cream, house, sun

CIRCLE CHILD'S SELECTION: Ice Cream House Sun

2. Give me the picture of the animal that you think looks the biggest. (rabbit, ant, elephant)
PRACTICE ITEM

Order: rabbit, ant, elephant

CIRCLE CHILD'S SELECTION: Rabbit Ant Elephant

3. Give me the picture of the child that you think looks the meanest.

CHILD # 1 ORDER: 1, 2, 3

CIRCLE CHILD'S SELECTION: 1 2 3

4. Give me the picture of the child that you think has many friends.

CHILD # 2 ORDER: 2, 3, 1

CIRCLE CHILD'S SELECTION: 2 3 1

5. Give me the picture of the child that you think looks the smallest.

CHILD # 3 ORDER: 3, 2, 1

CIRCLE CHILD'S SELECTION: 3 2 1

CORRECTNESS OF SELECTION: YES or NO

6. Give me the picture of the thing that you think looks the stickiest. (paper, glue, dog)
DISTRACTER

Order: paper, glue, dog

CIRCLE CHILD'S SELECTION: Paper Glue Dog

7. Give me the picture of the child that you think looks the ugliest.

CHILD # 4 ORDER: 3, 1, 2

CIRCLE CHILD'S SELECTION: 3 1 2

8. Give me the picture of the child that you think looks the smartest.

CHILD # 5 ORDER: 1, 2, 3

CIRCLE CHILD'S SELECTION: 1 2 3

9. Give me the picture of the child that you think looks the fattest.

CHILD # 6 ORDER: 2, 1, 3

CIRCLE CHILD'S SELECTION: 2 1 3

10. Give me the picture of the thing that you think looks the tallest. (flower, bench, house)
DISTRACTER

Order: flower, bench, house

CIRCLE CHILD'S SELECTION: Flower Bench House

11. Give me the picture of the child that you want to play with.

- CHILD # 7 ORDER: 3, 2, 1
CIRCLE CHILD'S SELECTION: 3 2 1
12. Give me the picture of the child that you think looks the stupidest.
CHILD # 8 ORDER: 1, 3, 2
CIRCLE CHILD'S SELECTION: 1 3 2
13. Give me the picture of the child that you think has a normal body.
CHILD # 9 ORDER: 1, 2, 3
CIRCLE CHILD'S SELECTION: 1 2 3
14. Give me the picture of the thing that you think looks the hottest. (fireplace, desk, refrigerator) DISTRACTER
Order: fireplace, desk, refrigerator
CIRCLE CHILD'S SELECTION: Fireplace Desk Refrigerator
15. Give me the picture of the child that you think looks the nicest.
CHILD # 10 ORDER: 3, 1, 2
CIRCLE CHILD'S SELECTION: 3 1 2
16. Give me the picture of the child that you think has no friends.
CHILD # 11 ORDER: 2, 3, 1
CIRCLE CHILD'S SELECTION: 2 3 1
17. Give me the picture of the child that you think looks the biggest.
CHILD # 12 ORDER: 2, 1, 3
CIRCLE CHILD'S SELECTION: 2 1 3
18. Give me the picture of the thing that you think looks the fastest. (grass, dog, car) DISTRACTER
Order: grass, dog, car
CIRCLE CHILD'S SELECTION: Grass Dog Car
19. Give me the picture of the child that you think looks the cutest.
CHILD # 13 ORDER: 3, 2, 1
CIRCLE CHILD'S SELECTION: 3 2 1
20. Give me the picture of the child that you think looks the skinniest.
CHILD # 14 ORDER: 3, 1, 2
CIRCLE CHILD'S SELECTION: 3 1 2
21. Give me the picture of the child that you do not want to play with.
CHILD # 15 ORDER: 2, 3, 1
CIRCLE CHILD'S SELECTION: 2 3 1
22. Give me the picture of the thing that you think looks the smallest. (bed, penny, chair) DISTRACTER
Order: bed, penny, chair
CIRCLE CHILD'S SELECTION: Bed Penny Chair

23. Give me the picture of the child that you do not want to look like.

CHILD # 16 ORDER: 2, 1, 3

CIRCLE CHILD'S SELECTION: 2 1 3

24. Give me the picture of the child that you want to look like.

CHILD # 17 ORDER: 1, 3, 2

CIRCLE CHILD'S SELECTION: 1 3 2

25. Give me the picture of the child that looks like you.

CHILD # 18 ORDER: 1, 2, 3

CIRCLE CHILD'S SELECTION: 1 2 3

26. Give me the picture of the animal that you think looks the softest. (bunny, turtle, alligator) DISTRACTER

Order: bunny, turtle, alligator

CIRCLE CHILD'S SELECTION: Bunny Turtle Alligator

APPENDIX C

STUDY SCRIPT

STUDY SCRIPT

When the daycare staff introduces you to a child, begin by saying:

“Hello, my name is _____. I was wondering if you would like to come with me and play a game.”

If the child asks you what kind of game, you can tell them that they will be looking at pictures and telling you what they think of them.

If the child does not want to participate, tell them **“That’s okay. Maybe next time.”**

If the child agrees to accompany you, walk them to the designated room/area where the experiment will be conducted. While you are walking with them, ask them:

“How are you doing today? Do you like to look at pictures? Well, today we are going to be looking at pictures together and you are going to help me answer some questions. I want you to work really hard and do your best, but don’t worry; there is no right or wrong answer.”

Once you reach the designated location, show the child where you would like them to sit (directly across from you, if possible). When the child is settled and seems ready to listen, begin giving them the following instructions.

“I am going to show you three pictures at a time. I will put the pictures down on the table in front of you. After I show you the pictures, I am going to ask you a question about them. Pick up the picture that you think is the answer to the question and hand it to me. Do you understand my instructions?”

If the child indicates that he/she understands the instructions, proceed to the questionnaire.

If the child indicates that he/she does not understand, repeat the instructions once. If he/she still doesn’t understand, begin with the first question and lay out the pictures so that it becomes more visual. Repeat the instructions again and then proceed with the questionnaire.

If the child continues to show little comprehension of the procedure, make a note of this on their packet and the condition sheet*

- Begin asking questions on the questionnaire.

After each answer the child provides, reinforce their good participant behavior using a mixture of the following phrases:

- *You are helping me by answering all these questions.*
- *I like the way you are listening and paying attention.*
- *You are really listening.*
- *You're doing a lot of thinking.*
- *You're doing a great job.*
- *That's fine.*
- *You're a good helper.*
- *Thank you*
- *Good job. Nice job. Well done.*

Do not create any bias by focusing your attention on a certain photograph or indicating that the child made the “right” choice. Make sure your responses and facial expressions are very neutral after the child answers a question.

Upon completion of the questionnaire, tell the child **“We are all done with the game. Now we just need to weigh and measure you and then we will be finished. You are doing a very good job. Follow me, and we’ll get your weight and height, just like they do in the doctor’s office. Have you been weighed and measured before? I’m sure you will be a pro.”**

Take the child to the location of the scale and stadiometer. Ask the child to remove their shoes before standing on the scale and stadiometer.

Follow the procedures for measuring height and weight.

After the child completes the study, tell them:

“Thank you for helping me, you did a great job. You are a very good helper.”

Bring the child back to a child care staff member.