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Abstract

The prevalence of children who are overweight in the United States has increased over the last decade (NCHS, 1999; Styne, 2001). Being overweight has social and emotional consequences for children (Counts, Jones, Frame, Jarvie, & Strauss, 1986). Children who are overweight may often be teased, and research has shown that average weight children may hold negative attitudes toward their peers who are overweight (Morgan, Bieberich, Walker, & Schwerdtfeger, 1998; Sigelman & Begley, 1987). Given the seriousness of this, more information is needed about the impact of interventions to improve children's acceptance of peers who are overweight. For the present study, 164 elementary school-aged children participated in an investigation to improve children's acceptance ratings of a model who was overweight. Children were randomly assigned to view a videotape that presented either positive information about the skills and abilities of the model or an unrelated story about school read by an adult female. Then, children were randomly assigned a second time to view a videotape of a same sex model dressed to appear overweight or at their normal weight playing a card game with an adult female. Next, children completed the *Modified Children's Social Desirability Scale* (*MCSDS*) and the *Child Interview*. The *MCSDS* examined children's tendencies to respond in a socially desirable manner. The *Child Interview* consisted of questions assessing the children's acceptance of the model. Results indicated that girls reported higher acceptance ratings for the model compared to boys. Children did not report different acceptance ratings for the model presented as overweight compared to the model at his/her normal/average weight. Finally, boys and girls did not differ in their responses on the *MCSDS*. Thus, children in this study did not report stereotyped attitudes toward children who are overweight. The discussion section of this manuscript includes the implications of this study, its limitations, and ideas for future research.

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Children's Perceptions of a Peer Who is Overweight

Being overweight is a major health concern for an increasing number of children in the United States (NCHS, 1999; Shisslak, et al., 1998; Styne, 2001). Approximately 25% of the children in this country are obese or at risk for becoming obese (Troiano & Flegal, 1999). Even more children are considered to be overweight (Styne, 2001). Children who are overweight as youngsters may be overweight as adults (Whitaker, Wright, Pepe, Siedel, & Dietz, 1997). Children who are overweight also are at risk for developing pulmonary problems such as sleep apnea as well as being at increased risk for developing cancer and diabetes (Hill & Pomeroy, 2001).

In addition to the medical risks, some children must also cope with social and emotional consequences related to their weight status. For example, children who are overweight may often be teased, and may be rejected by their peers (Neumark-Sztainer et al., 2002; Strauss, Smith, Frame, & Forehand, 1985). As a result of being teased, children who are overweight may report more emotional distress than children who are not overweight (Mellin, Neumark-Sztainer, Story, Ireland, & Resnick, 2002). Being teased as a child about weight status has been linked to psychopathology in adults (Jackson, Grilo, & Masheb, 2000). Researchers have reported that children may hold negative attitudes toward peers who are significantly overweight or obese (Bell & Morgan, 2000; Counts, Jones, Frame, Jarvie, & Strauss, 1986; Sigelman & Begley, 1987). This may be reflected in reports of lower acceptance ratings for children who are overweight compared to children who are of average weight. Therefore, one purpose of this study was to investigate children's acceptance of a peer presented to be overweight compared to a peer at his/her average weight.

Another purpose of this study was to examine some of the other factors that may influence children's peer acceptance. For instance, positive information presented about a peer may influence children's acceptance ratings for their peers (LaGreca & Bearman, 2000). The current study examined the impact of positive information about the skills and abilities of a model who was presented as overweight or average weight on children's acceptance ratings. Also, characteristics of the perceiver, such as gender and age, may impact children's acceptance ratings for a peer who is overweight (Bell & Morgan, 2000). Social desirability response bias has been shown to influence the results of research done with children (Morgan, Bieberich, Walker, & Schwerdtfeger, 1998). The current study also examined the influence of gender, age, and social desirability on children's acceptance ratings for the current study.

The remainder of the introduction reviews the literature on peer acceptance as it relates to young children's acceptance of other children who are overweight. In areas where information on children who are overweight is lacking, a review of the information on children with physical differences or limitations is presented. The introduction concludes with the hypotheses for the current study.

Acceptance, Stigma and the Influence of Positive Information

Researchers have described children's "liking" for or attitudes toward their peers in terms of their acceptance ratings. Azjen (1988) proposed that our attitudes and beliefs often play a role in determining our behavior. Increasing knowledge about children's acceptance of their peers is important, because this information may guide intervention efforts (Azjen & Fishbein, 1977; Triandis, 1971).

Triandis (1971) proposed a 3-factor model to explain how people form attitudes toward others, such as their feelings of acceptance toward others. He suggested that, "attitudes are inferred from what a person says about an attitude object, from the way he feels about it, and from the way he says he will behave toward it" (p. 14). Triandis proposed that cognitive, affective, and behavioral components influence people's attitudes. The cognitive component involves the categorization of the objects that we encounter (i.e., people, places, things) based on their characteristics (e.g., size, shape, color). The affective component is composed of the evaluative judgments we make toward objects (e.g., liking or disliking an object). The behavioral component is measured by recording how people behave toward others and is influenced by society's norms for acceptable behavior. For children, the affective component of attitudes may be the most critical factor influencing their acceptance of or liking of others (Triandis, 1971). Therefore, the current study assessed the liking or affective component of children's attitudes toward a peer who is overweight.

Goffman (1963) noted that visible characteristics, like weight status and physical appearance, influence attitudes and social interactions. If a person's visible characteristics are different from the cultural norm, then, others may perceive this individual in a negative or "stereotyped" manner. Goffman described this as being stigmatized, defining a stigma as a discrediting characteristic. Young children learn stereotypes about what is normal and not normal for physical appearance through social learning as well as exposure to literature and cultural mores (Adams, Hicken, Salehi, 1988; Berscheid & Walster, 1974; Flannery-Schroeder & Chrisler, 1996). Children may exhibit negative attitudes toward peers who do not conform to expected cultural norms

for beauty. It is important to examine children's acceptance of peers who do not meet the cultural norms for beauty (i.e., being overweight), because being overweight has become a very common chronic condition for our nation's children (Styne, 2001).

Perhaps one way to combat negative attitudes toward people with physical differences is to present positive information about the person with the stigma. In his "Cognitive Consistency Model," Heider (1958) proposed that people tend to react positively to others who are described as having skills and abilities similar to their own. Other researchers have speculated that children may report more positive perceptions about children who are described as being similar to themselves than children who are described as being dissimilar to them (Bak & Siperstein, 1987). Similarly, researchers have suggested that children report higher acceptance ratings for peers with physical differences when these children are described in a positive manner (e.g., having good skills and abilities; LaGreca & Bearman, 2000; Nabors & Larson, 2002; Sigelman, Miller, & Whitworth, 1986). As mentioned, a goal for this study was to examine the impact of positive information on children's initial impressions of a peer with a common physical problem (being overweight).

Acceptance of Peers Who are Overweight

Researchers have reported that as many as 25% of children who are overweight are teased by their peers because of their weight status (Neumark-Sztainer, et al., 2002). In a study of adolescent girls who were overweight, a majority of the girls reported being teased and unaccepted in elementary and middle school by their peers because they were overweight (Neumark-Sztainer, Story, & Faibisch, 1998). Further, Neumark-Sztainer and colleagues reported that most of the girls experienced emotional distress following

this teasing. Jackson and colleagues (2000) reported that weight-related teasing in childhood was related to psychological problems, such as low self-esteem, in adulthood. Levine (1987) noted that children in elementary school often are already stereotyping children who are overweight as being "lazy" and "stupid." Other researchers have found that children as young as kindergarten express stereotypical negative attitudes toward children who are considered to be overweight when compared to children who are considered to be thin or of average build (Brylinsky & Moore, 1994; Cramer & Steinwert, 1998).

Information about the Model

Researchers have examined the impact of different types of information on children's acceptance of peers who are physically different. Much research in this area has focused on the influence of different types of medical information (e.g., how controllable a condition is/is not, symptoms and features of a particular condition) about the condition on children's acceptance (Anesbury & Tiggeman, 2000; Sigelman, 1991; See Appendix A). For example, Bell and Morgan (2000) investigated the role of medical information on children's acceptance of peers who are overweight. They found that children reported negative perceptions of peers presented as overweight compared to peers presented as being normal or average weight. Additionally they reported that medical information did not influence children's preferences for the model.

After reviewing studies examining the impact of medical information, LaGreca and Bearman (2000) concluded that the evidence from these studies did not consistently find that this type of information changed children's perceptions of peers with physical differences. Further, they called for continued investigation about how other types of

information, such as positive information about the child, affect peer acceptance. Because most of the literature is focused on how medical information affects children's acceptance, a review of critical studies in this area is presented in Appendix A. The current study, building from the literature on medical information and LaGreca and Bearman's suggestions, examined the impact of positive information on children's acceptance of a peer who is overweight.

Cohen and colleagues (1997) examined the impact of positive (e.g., engaging in activities with peers) and negative information (e.g., avoiding activities with peers) on children's acceptance of a model. They provided children with a short vignette that described a child, who was overweight or of average weight participating in a class activity. In the negative information condition the child became upset and avoided joining in a game that he/she did not want to play. In the positive information condition, the child engaged in the game although he/she did not initially want to. They found that children rated the model higher when the model was described as having positive behavioral characteristics (engaging in a game the child did not want to play) compared to when the model was described as having negative characteristics.

This study applied Heider's "Cognitive Consistency Model" (1958) to develop scripts about positive information. Heider stated that people tend to react positively to others who are described as having skills similar to their own. The research team developed script videotapes in which an adult female presented information about the model's skills, which were described as similar to those of children in the same age range as study participants. Therefore, this study was able to examine how positive information influenced children's acceptance ratings for the model.

Characteristics of the Perceiver

Perceiver attributes may influence children's perceptions of peers with physical differences. For example, researchers have shown that gender of the perceiver may influence children's acceptance of peers with physical conditions (Rosenbaum, Armstrong, & King, 1988). Hazzard (1983) reported that girls might be more accepting of peers who are physically different than boys. Similarly, Morgan and colleagues found that girls may provide higher acceptance ratings for same sex peers who are overweight compared to boys (Morgan, Bieberich, Walker, & Schwerdtfeger, 1998). Some researchers have found no differences between boys' and girls' acceptance of peers who are physically different (Strohmer, Grand, & Purcell, 1984). On the other hand, Woodard (1995) found that boys have more positive attitudes toward peers with physical conditions than girls. Given these discrepant findings, the current study matched participants and models by gender in order to further examine gender differences in children's acceptance ratings.

Other characteristics of the perceiver, such as age or developmental level, may influence children's perceptions. Researchers examining the influence of age on children's acceptance ratings for peers with physical differences have reported mixed results. For instance, Morgan and colleagues (1998) found that younger elementary school-aged children provided higher acceptance ratings for a model than older children irrespective of a model's weight status (overweight or normal/average weight). Conversely, Rand and Wright (2000) found that adolescents were more accepting of a wide range of body types than children who were in elementary and middle school. It is presently unclear how age influences children's perceptions of peers with physical

differences. Thus, this variable needs to be included in the design of research projects in this area.

Social desirability response bias may also influence children's acceptance ratings for their peers. Social desirability is a tendency to respond in a manner that the respondent believes to be socially acceptable, even if the response does not reflect his/her beliefs or attitudes about a topic. Phillips and Clancy (1972) reported that responding in a socially desirable manner is dependent on two things, personal needs for approval and the situational demands. This may bias research results (McCrae & Costa, 1983; Nancarrow & Brace, 2000). Nancarrow and Brace (2000) suggested that this response bias might be problematic because it may cause over-reporting of socially desirable behavior and confound relationships among predictor variables. It is important to consider this potential problem when conducting research (Fischer, 1993). Previous studies of peer acceptance have not included social desirability as a variable in the research. The current study expands the literature in this area by including a measure of social desirability and examining the relationship among social desirability and acceptance ratings

Methods for Examining Acceptance

The method used to assess children's acceptance ratings may influence their ratings of peers with physical differences. Line drawings have been used as stimuli in many studies examining children's acceptance ratings for peers with physical differences (e.g., Cramer & Steinwert, 1998; Harper, Wacker, & Seaborg-Cobb, 1986; Nabors & Larson, 2002; Richardson, 1970; Richardson, Goodman, Hastorf, & Dornbusch, 1961).

Line drawings may not be the most effective means for assessing children's acceptance ratings because children may view them as being "make-believe" or "fake."

Bell and Morgan (2000) used videotapes of a model in order to provide children with a more realistic model and situation to judge. To ensure that the models appeared to be overweight, Bell and Morgan consulted with a university theater department who assisted the researchers in dressing the children appropriately. Children were dressed in a "fat suit" which made the children appear to be overweight and also added weight to their frame. These children served as the models in the videotapes used by Bell and Morgan. This study used a similar method. The current study dressed children to appear as overweight by adding padding and sand underneath their clothing. These children were then videotaped and served as the models for this study.

Similar to Bell and Morgan (2000), this study used videotapes of children dressed to appear overweight or dressed in their normal clothes (average weight condition). Because attractiveness may influence peer acceptance (Dion & Berscheid, 1974), the same model was dressed to appear overweight and at their normal/average weight in the videotapes. This allowed for control of one potentially confounding variable and increase experimental control in the study design.

In most of the studies examining children's acceptance of peers who are overweight, the models were significantly overweight or obese (Bell & Morgan, 2000; Cohen, Budesheim, MacDonald, & Eymard, 1997). A literature search revealed no studies examining children's acceptance ratings for peers who are somewhat overweight or "chubby." Thus, this study expands the research in this area by using models that are overweight but not obese. It may be that children view being slightly overweight as

"normal," and do not hold negative attitudes toward children who are slightly overweight. If the salience of the physical difference affects acceptance ratings (Goffman, 1963), then investigating children's acceptance of peers who have less salient physical differences is critical to understanding how children make these judgments.

Summary

Children who are overweight are at an increased risk for peer rejection (Bell & Morgan, 2000; Cohen, Budesheim, MacDonald, & Eymard, 1997). Positive information may increase acceptance ratings for peers who are physically different (LaGreca & Bearman, 2000), and therefore a goal of the current study was to investigate the impact of this variable on children's acceptance ratings. One hypothesis for this study was that children would rate the model that was overweight higher when presented with positive information about the model. One variable that has not been included in other studies of children's acceptance of their peers is a tendency toward responding in a socially desirable manner. Thus, the current study sought to examine whether or not this response bias is present in children's acceptance ratings for their peers. Finally, the current study sought to examine gender differences in children's acceptance ratings for a model presented as being overweight. There has been some debate as to whether girls or boys provide more positive ratings of peers who are physically different (Morgan, Bieberich, Walker, & Schwerdtfeger, 1998; Strohmer, Grand, & Purcell, 1984). Hence, another hypothesis for this study was that girls would provide higher acceptance ratings for the model than boys irrespective of the type of information presented about the model or the weight status of the model.

Study Hypotheses

As mentioned, the goals for the current project were to examine the impact of gender, age, and positive information on children's acceptance of a peer who is overweight. Specifically, this study investigated three hypotheses. The first hypothesis was that girls would report higher acceptance ratings for a same sex model than boys irrespective of the weight status of the model. The second hypothesis was that boys and girls would report higher acceptance ratings for the same sex model dressed to appear overweight when the model was presented with positive information compared to when the model was presented with an unrelated story. The third hypothesis was that boys and girls would report higher acceptance ratings of the model when he/she was at a normal/average weight than when the model was overweight. Because age may impact the dependent variable (Bell & Morgan, 2000), age in years was considered as the covariate. No a priori hypotheses were made about interaction effects, as results of previous research did not reveal significant interactions among these variables (Lehmkuhl, Nabors, & Deck, 2002; Nabors & Larson, 2000). Additionally, a power analysis indicated that the sample size was not large enough to detect interaction effects.

Method

Participants

Participants were 128 school-aged children (64 boys and 64 girls). Children ranged in age from 7 to 13 years ($M = 9.66$, $SD = 1.92$; see Table 1). All participants were Caucasian. Children were recruited from 7 elementary schools in or near a large midwestern city. Parental consent and child assent were required for study participation.

Examiners were 4 Caucasian females: 2 undergraduate research assistants, a Professor in the Department of Psychology, and the author.

Videotapes

Script Videotapes. Two scripts were developed for this study. One script videotape depicted an adult female describing the model's skills and abilities (positive information, e.g., "likes to play games," "does well in school"). The second script videotape showed the same adult reading a story about school (unrelated information). Script videotapes were between 1 min and 1 min and 15 sec in length. The two scripts used are presented in Appendix B.

Stimulus Videotapes. The stimulus videotapes depicted either a Caucasian boy or girl (approximately 7-years-old) playing a card game with an adult female. For the normal weight condition the model was dressed in his/her usual clothing (a sweatshirt and jeans). For the overweight condition the model was dressed to appear overweight by adding approximately 5 pounds of sand, bunting and cotton underneath similar clothing (a larger sweatshirt and jeans). We consulted a local children's theatre and a Psychologist specializing in human factors research in order to dress the children in a believable manner.

Measures

The Modified Children's Social Desirability Scale (MCSDS). Walsh and colleagues developed the original 28-item *Children's Social Desirability Scale (CSDS)* in the 1970's (Walsh, Tomlinson-Keasey, & Klieger, 1974). Schools participating in this study requested a shorter version of this measure in order to reduce administration time. Therefore, children completed a 5-item version of this scale. Questions used in the

modified scale were: (1) Do you always pick up your toys when you are finished playing? (2) Do you always do what your Mom or Dad tells you to do? (3) Are you always polite or nice to other children? (4) Are you always happy? and (5) I never get mad when I don't get what I want. Children responded to these questions by circling "yes" (indicating agreement) or "no" (indicating disagreement). The total social desirability score was used for analyses and was calculated by summing the number of yes responses for the questions.

Child Interview. This measure assessed children's acceptance of the model in different situations (see Appendix B). Questions were developed from a review of literature on children's acceptance of peers with physical differences (Bell & Morgan, 2000; Nabors & Larson, 2002; Nabors & Morgan, 1993; Sigelman, 1991). Questions included: "How much would you like to be friends with Tom/Jackie?" "How much would you like to sit next to Tom/Jackie at school?" and "How much would you like to play with Tom/Jackie if he/she lived next door to you?" Children provided responses to these questions using 4-point smiley-face Likert Scales (no acceptance to very high acceptance; Nabors & Larson, 2002). The smiley face scales ranged from a frowning face (very poor/no acceptance) to a large smiley face (very high acceptance). Children circled the smiley face that corresponded to their desired response for the item. Nabors and Morgan (1993) have shown that this is a reliable method for examining children's acceptance. For the purposes of this study the interview questions were averaged to create a mean acceptance score, which was used for analyses. The investigator created a mean acceptance score because the 3 items were positively and significantly correlated with one another. The

correlation coefficients for the items are presented in Table 1. This is procedure has been used in similar research (Lehmkuhl, Nabors, & Deck, 2002; Nabors & Larson, 2002).

Manipulation Check. Children responded to 4 questions designed as a manipulation check. These questions assessed whether or not children remembered information presented in the script videotapes. There were 2 versions of the manipulation check, one for the positive information videotape and one for the unrelated information videotape. Children responded to questions by circling "yes" (indicating that the information was presented in the videotape) or "no" (indicating the information was not presented in the videotape). Children passed the manipulation check if they answered 3 of the 4 questions correctly. Manipulation check questions are presented after the three questions from the *Child Interview* in Appendix B.

Procedure

Random Assignment

Random assignment occurred at two levels. First, girls and boys were assigned at random to view a script videotape. Thus, half of the boys and half of the girls viewed an adult introducing the child by reading positive information about the model's abilities. The other half of the boys and girls viewed an adult reading an unrelated story about school. Then, the groups were split again. At this second level, half of the boys and girls who were assigned to the positive information condition were assigned at random to view a videotape of the same sex model at his or her normal/average weight playing cards with an adult. The other half of the boys and girls assigned to the positive information condition viewed a videotape of the same sex model dressed to appear overweight playing cards with an adult. The random assignment for the unrelated story occurred in

the same fashion. Half of the boys and girls assigned to the unrelated story condition were assigned at random to view the same sex model at his or her normal/average weight playing cards with an adult. The other half of the boys and girls viewed the same sex model dressed to appear overweight playing cards with an adult.

Interviews

Interviews took place in a room separate from the classroom setting. Children were interviewed in same gender groups consisting of 2 to 4 children per group. Occasionally, due to scheduling problems (e.g., differences in children's class schedules), a child participated in an individual interview. First, the children completed the *MCSDS.* Then, they viewed the assigned script videotape followed by the stimulus videotape. Following this, the children completed questions designed as a manipulation check. Next, they completed the *Child Interview.*

Upon completing the measures, the children received lollipops and/or stickers as a reward. Finally, the children returned to the classroom with the interviewer. If a child did not want to participate, he or she drew a picture and received a lollipop and/or stickers, and then returned to his/her classroom.

Results

Eighty-three percent of the children passed the manipulation check by answering 3 out of the 4 questions correctly. This finding indicated that the majority of the children were able to recall the information presented in the script videotapes. A chi-square analysis did not indicate a significant difference between boys' and girls' ability to pass the manipulation check ($\chi^2 = .15$, *ns*).

Modified Children's Social Desirability Scale. There was little variability in the children's scores, with most children receiving a high total score. Children's total social desirability scores were split into 2 groups. Those children who received a score of 3 or higher were coded as having higher social desirability scores, while scores of 2 or lower were coded as lower social desirability scores. An ANOVA was conducted in order to determine the influence of social desirability on children's acceptance ratings for the model. Results revealed that social desirability was not a significant predictor of children's acceptance ratings. This could have occurred because 63% of the children had a score of 3 or higher on the *MCSDS*. Thus, social desirability was excluded as a variable in the final analysis.

Child Interview. A 2 (Gender: Boys, Girls) X 2 (Weight Status of the Model: Average Weight, Overweight) X 2 (Information Type: Positive Information, Unrelated Information) ANCOVA was used to examine children's acceptance of the model. Age in years was the covariate. The omnibus test indicated that the model was significant, $F(8, 128) = 4.47, p \leq .001$. The summary table for the ANCOVA is presented in Table 2. There was a significant main effect for gender, $F(8,128) = 23.77, p \leq .001$. This generated a medium effect size, $f = .45$ (based on Cohen's f calculation, 1988). Girls ($M = 3.38$, $SD = .58$) provided higher acceptance ratings than boys ($M = 2.81$, $SD = .77$), irrespective of the weight status of or the type of information presented about the model. There were no significant differences based on the weight status of the model or the type of information presented about the model. Age was a significant covariate ($p < .01$). No significant interaction terms were found. Table 3 presents means and standard deviations for children's acceptance ratings by gender and experimental condition.

Discussion

Results from this study indicated that the gender of the perceiver influenced children's acceptance ratings for the model irrespective of the weight status of the model. Specifically, girls reported higher acceptance ratings for the model than boys regardless of the type of information presented about the model or the weight status of the model. This finding is consistent with other research (Hazzard, 1983; Morgan, Bieberich, Walker, & Schwerdtfeger, 1998). Girls may have reported higher acceptance ratings for the model because they are more accepting of their peers than boys are. On the other hand, boys may demonstrate their liking by playing with their peers rather than through reporting whether they like specific children.

Contrary to predictions, positive information did not influence children's acceptance ratings of either model. Other authors have examined the role of positive information on children's acceptance ratings for models with other physical differences (e.g., being in a wheelchair, Nabors & Larson, 2002). These researchers found that positive information did increase children's acceptance ratings. However, this may not be an effective intervention for all types of physical differences. It may be that the children surveyed for this study did not perceive being slightly overweight as a salient or significant physical difference. Presenting positive information about a "normal" condition may not significantly change children's opinions, if they are already very positive. Also, the scripts and videotapes were short, lasting only a few minutes. Results may have been different if the intervention lasted for a longer period of time.

Weight status of the model also did not influence children's acceptance ratings. Researchers have shown that children hold negative perceptions of children who are

significantly overweight or obese (Anesbury & Tiggeman, 2000; Bell & Morgan, 2000; Brylinsky & Moore, 1994; Neumark-Sztainer, Story, & Faibisch, 1998). It may be that children do not hold negative perceptions about children who are slightly overweight. Young children may equate being slightly overweight with being big or strong and view this as an acceptable standard for physical appearance (Brylinsky & Moore, 1994). It is important that future research continue to examine the influence of the degree to which the model is overweight on children's acceptance ratings. One way to do this would be to compare children's acceptance ratings for a child who is obese to a child who is only slightly overweight and assess whether there are any differences in the children's acceptance ratings. It was encouraging to find that the children in this study were not basing their acceptance of the model on his/her weight status. The increase in children being classified as overweight in this country may have lead to an increase in acceptance of this body type.

Age was a significant covariate, indicating that this factor may have influenced children's acceptance ratings. Because there were not equal numbers of children in each age group, it could not be included as an independent variable in the model. Richardson (1970) found that age was significantly related to children's acceptance of their peers. Future studies should include age as an independent variable and use a wider age range for participants (e.g., elementary to middle school-aged children). The format of the interview in this study may have influenced results related to age. Older children may have felt that the questions were designed for younger children. It will be important to modify the wording of the questions in future studies so that they are more developmentally appropriate for each age range. Further, it will be important to conduct

longitudinal studies of children's acceptance of peers with physical differences (being overweight) to determine whether or not children's attitudes change as they age. It may be that elementary school-aged children are less concerned with the physical appearance of their peers than older youth (e.g., adolescents).

Most of the children provided responses consistent with a social desirability response bias. Analyses of the *MCSDS* (social desirability scale) indicated that there was little variability in the distribution of scores. Sixty-three percent of the children answered "yes" to 3 or more of the questions on the questionnaire. A post hoc analysis indicated that age of the child and scores on the *MCSDS* were related (r = -.195, p = .05). It may be that older children understood the measure while younger children did not, and therefore were not about to provide reliable data. Also, because social desirability is a complex construct and may be difficult to measure using only a few items, using a longer measure of social desirability might provide more revealing findings. Further, using a different technique for measuring social desirability, such as having the children answer acceptance questions by providing their opinions and then respond as they believe a friend or best friend would respond may be a better technique for measuring social desirability (Cohen et al., 1997). As noted, principals required that some of the measures be shortened in order to reduce administration time for the children and minimize the children's absence from instructional time in the classroom.

There were several limitations present in this study. First, using children's self-report ratings to indicate their acceptance – rather than using behavioral observations – may not be ideal. Children may not act in accord with their stated acceptance of the model (Morgan, et al., 1998). Additionally, research assistants may have obtained more

honest reports, indicating less acceptance of the overweight model, if children had been interviewed individually rather than in groups. Weiserbs and Gottlieb (1992) found that children are more comfortable sharing information about their friendship preferences in individual interviews rather than group settings. Future studies should consider using an individual interview format, or allowing the children to complete the self-report measures separate from other children. Another limitation is the use of all Caucasian children as participants and models in the experiment. It will be important to include children of different ethnicities in future studies.

Additionally, one could argue that using videotaped interactions limited the generalizability of study findings. Videotaped interactions were selected for use to increase the amount of experimental control within the study. Although children were provided with a more realistic experience compared to other studies that have used line drawings, this method is still a contrived one. Thus, it may not have been believable enough to accurately elicit the children's opinions. Another limitation is that the current study only examined children's acceptance ratings for the model depicted in one situation. Future studies should measure context effects by looking at children's acceptance ratings for the model when depicted in different situations, for example showing the model on the playground, playing sports or in the classroom.

Finally, some key variables that may predict children's acceptance were not investigated for this study. For example, the perceived attractiveness of the model may influence children's acceptance ratings for the model (Bell & Morgan, 2000). In future research it will be important to ask children to rate the attractiveness of the model in addition to reporting acceptance ratings. Also, personal experience or exposure to

someone with a physical difference may influence acceptance ratings toward that individual (Hazzard, 1983). Future research should include experience with people who are overweight as an independent variable.

As mentioned, weight status of the model did not affect the children's acceptance ratings. Children may have provided different acceptance ratings if the weight difference (between the average and overweight status) was more pronounced. It will be important to have the children rate their perceptions about whether a model is actually overweight in future studies. Future research should compare the impact of positive information on children's acceptance ratings of peers who are of normal weight, overweight, and obese.

Finally, this study did not examine children's actual behaviors toward the model. Instead, children rated how much they "liked" the model a proxy for their acceptance of the model. While this provides an indication of what children's behaviors might be (Azjen & Fishbein, 1977), it does not give a definitive picture of children's interactions with their peers who are overweight. Thus, stated preferences may not be reflected in children's behaviors toward peers who are overweight. Triandis (1971) proposed that behaviors reveal attitudes, and assessing children's interactions with peers who are overweight may uncover their true attitudes. It may be that children report liking or accepting peers who are overweight, but do not interact or play with them. Future research needs to examine all three of the response channels proposed by Triandis – cognitive, affective, and behavioral – to more thoroughly examine children's acceptance of overweight peers.

It was difficult to recruit schools to participate in this study. Some principals stated that studying children's acceptance of peers who are overweight was too sensitive

a topic to study in schools. Other principals declined to participate because they did not want students to miss any instructional time. In addition, some teachers expressed negative perceptions of this project, and they were reluctant to allow children in their classrooms to participate.

Future research may expand the knowledge base in this area by addressing several areas. The first would be to determine what body type(s) children perceive to be overweight and/or obese. Some researchers have examined children's perceptions of their current and ideal body types (Thompson, Corwin, & Sargent, 1997). Second, age of the perceiver should be included as an independent variable in future research. Finally, future research should investigate the context in which models interact with others. For example, children may provide higher acceptance ratings for overweight peers during sedentary activities compared to activities that involve significant physical activity (like running).

This topic remains a key area for research, because the proportion of children who are overweight and/or obese is reaching epidemic proportions (Styne, 2001). Several studies have shown that children who are overweight are at risk for a host of negative physical and psychological outcomes related to their weight status (Hill & Pomeroy, 2001; Neumark-Sztainer, et al., 2002; Strauss et al., 1985). The results of this research have implications for designing interventions for working with children who are overweight. Interventions may only be necessary for children who are significantly overweight or obese rather than for children who are only slightly overweight. This should be considered when designing treatment programs for working with these youth.

Table 1

Correlations Among Acceptance Items on the Child Interview

	How much would you like to be friends with Jackie/Tom?	How much would you like to sit next to Jackie/Tom at school?	How much would you like to play with Jackie/Tom if she/he lived next door to you?
How much would you like to be friends with Jackie/Tom?	1.00	.61**	.29**
How much would you like to sit next to Jackie/Tom at school?		1.00	.33**
How much would you like to play with Jackie/Tom if she/he lived next door to you?			1.00

Note. ** $p < .001$.

Table 2

Analysis of Covariance for the Impact of Gender, Information, and Weight Status on Acceptance ratings for the Model

Source	*df*	*F*	*p*	*f*
Gender	1	10.64**	.001	.45
Information	1	.36	.551	.05
Weight Status	1	1.16	.284	.10
Gender X Information	1	.36	.549	.05
Gender X Weight Status	1	.73	.395	.07
Information X Weight Status	1	.70	.405	.07
Gender X Information X Weight Status	1	.28	.595	.05

Note. ** $p < .001$. The *f* is the effect size using Cohen's calculation (1988)

Table 3

Means and Standard Deviations for Children's Acceptance Scores, by Gender, Model, and Type of Information

Gender	Model and Script	Mean Rating and Standard Deviation
Female	Overweight Model, Unrelated Script	$M = 3.46$, $SD = .63$
	Overweight Model, Positive Script	$M = 3.27$, $SD = .57$
	Average Weight Model, Unrelated Script	$M = 3.38$, $SD = .58$
	Average Weight Model, Positive Script	$M = 3.42$, $SD = .56$
Male	Overweight Model, Unrelated Script	$M = 3.06$, $SD = .76$
	Overweight Model, Positive Script	$M = 2.81$, $SD = .76$
	Average Weight Model, Unrelated Script	$M = 2.62$, $SD = .65$
	Average Weight Model, Positive Script	$M = 2.75$, $SD = .91$

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Appendix A:

Review of Literature on Influence of Medical Information on Acceptance Ratings

Controllability, Cause, and Responsibility

LaGreca and Bearman (2000) reported that the results from studies examining influence of medical information on peer acceptance were equivocal. This could have occurred because different researchers have used different types of medical information (e.g., causal, controllability of the condition, permanence of the condition). After reviewing the literature, I concluded that medical information may not improve peer acceptance for several reasons. To illustrate, medical information may not be influential because the information is too sophisticated for the developmental level of the children providing the acceptance ratings (Anesbury & Tiggeman, 2000; Bell & Morgan, 2000). Additionally, medical information may not be as meaningful for young children as they are more likely to be influenced by more affective information, like positive information about a person, when making judgments about other individuals (Triandis, 1971). Thus, a primary hypothesis for this study was that positive information about the model would increase children's acceptance ratings for a peer who is overweight; therefore this was the independent variable. The following paragraphs present a brief review of information from a few key studies focusing on children's acceptance of peers who are obese.

Sigelman and Begley (1987) examined the influence of uncontrollable or controllable causal information on children's perceptions of peers with 4 different medical conditions, being obese, wheelchair bound, learning disabled, or aggressive. They found that independent of the type of information presented, children typically provided higher acceptance ratings for at least 1 peer who was not obese compared to the

peer who was obese. Thus, the child who was obese never received the highest acceptance rating. However, children in this sample rated only male models. It may be that girls would have provided higher acceptance ratings for the model if they had been rating a girl who was obese.

Similarly, Anesbury and Tiggeman (2000) found that providing children with information about the controllability of obesity did not change children's negative perceptions of peers who were obese. Further, Sigelman (1991) found that providing children with low responsibility information about the controllability or cause of being overweight or in a wheelchair did not improve children's ratings of the model. Specifically, she found that children reported higher liking ratings for a peer described as being in a wheelchair compared to a child described as being overweight.

Appendix B:

Child Interview, Manipulation Check Questions, Scripts

Child Interview

1. How much would you like to be friends with *Tom/Jackie*?
2. How much would you like to play with *Tom/Jackie* if *he/she* lived next door to you?
3. How much would you like to play on the playground with *Tom/Jackie*?

*Tom was the name used in the scripts and questionnaires presented to the boys and, Jackie was the name used for the girls.

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Manipulation Check

Positive Information Script

1. Did the video with the teacher who was telling the story say that the child was well liked by others?
2. Did the story say that you could play games with the child?
3. Did the story say that the child is good at building playhouses?
4. Did the story say that the child was very good on the bus?

Unrelated Information Script

1. Did the video with the teacher who was telling the story ask if you would like to write with crayons or markers?
2. Did the teacher in the video say that she liked school?
3. Did the teacher say that she liked to ride her bike to school?
4. Did the teacher say that she liked to ride the bus to school?

Scripts

Positive Information

Hi Kids. I am going to read you a story about Tom/Jackie, please listen carefully. This is Tom/Jackie. He/she likes to play with other kids. He/she can be your friend. A lot of children like him/her. You can talk with him/her and play games together. Tom/Jackie is good at doing coloring and playing cards. He/she is fun to be with and does very well at school.

Unrelated information

Hi Kids. I am going to ask you a question and you should think about your answer, but don't talk out loud. Do you like to write with pencils or pens? When I was you age I really liked going to school and learning about new things everyday. When I was in elementary school, I had lots of fun riding on the bus.

Appendix C:

Explanation of Age Breakdown

Participants ranged in age from 7-years-old to 13-years-old (see table below for frequencies for each group). Because the age groups were not evenly distributed, age was used as a covariate in the final ANOVA models. Future studies should recruit equal numbers of children in different/specific age ranges so that age may be considered as a separate independent variable in prediction models rather than as a covariate.

Age in Years	Frequency	Percent
7	19	14.8
8	19	14.8
9	32	25
10	20	15.6
11	9	7
12	13	10.2
13	16	12.5

N = 164.

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