Children’s Attitudes and Behavioral Intentions Toward a Peer Presented as Obese: Does a Medical Explanation for the Obesity Make a Difference?

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Objective: To examine the effect of information on children’s attitudes and behavioral intentions toward a peer presented as obese.

Methods: Children (N = 184) were randomly assigned to observe a video of a boy or girl in one of three conditions: average-weight, obese, obese with medical information explaining the obesity. They rated stereotypical attitudes on the Adjective Checklist and behavioral intentions on the Shared Activities Questionnaire (SAQ-B).

Results: Ratings were generally more favorable for the average-weight than for the obese condition. However, provision of medical information had a positive effect on attitudes toward the obese peer only for younger children and a negative effect on willingness of older children to share academic activities with the peer. Boys and girls showed more positive behavioral intentions toward the same-sex target child regardless of obesity condition.

Conclusions: Information explaining obesity has a minimal positive effect on children’s attitudes and behavioral intentions toward a peer presented as obese.

Key words: childhood obesity; attitudes; behavioral intentions.

Children with medical conditions or physical disabilities often confront negative attitudes from their peers. A worthwhile goal for health care professionals is to inculcate more positive attitudes in children toward peers with such disorders through providing information about the condition (Potter & Roberts, 1984). Such information may be oriented toward helping children understand that the affected child may bear no responsibility for having the condition (Sigelman, 1991). An essential question is whether such attitudes are indeed influenced by the degree of responsibility children attribute to the peer for the condition.

Of all the conditions, peers view obesity as one of the most stigmatizing and least acceptable (DeJong, 1993). Research has shown that children rate obese peers as less liked and less preferred as friends or playmates than they do nonobese peers or peers with other handicaps (e.g., Harper, Wacker, & Seaborg-Cobb, 1986; Richardson, Goodman, Hastorf, & Dornbusch, 1961). Based on Weiner’s
attrition theory, one would predict, however, that children's affective responses or attitudes toward the affected peer would be more favorable if they view the problem as beyond rather than within the peer's control (Weiner & Graham, 1984).

Research findings have failed to consistently support the validity of the assumption that increasing a child's understanding of a medical condition will correspondingly improve the child's attitude toward and acceptance of a peer affected with the condition. For example, Potter and Roberts (1984) presented children with written vignettes about a peer with epilepsy or diabetes and found that children given explanatory information perceived the peer as less attractive than did children who received only descriptive information. Similarly, Friedrich, Morgan, and Devine (1996) found that information about Tourette's disorder failed to improve children's attitudes and behavioral intentions toward a peer showing symptoms of the disorder in video presentations.

Several studies have applied Weiner's attribution hypothesis specifically to childhood obesity. Sigelman (1991), for example, presented audio vignettes to elementary children and found that provision of low-responsibility information reduced the children's tendency to hold an obese girl or wheelchair-bound girl responsible for her condition but did not alter their liking for the obese girl. She concluded that liking was more related to the nature of the condition than to its perceived cause. DeJong (1993) found that high school girls rated an obese peer viewed by video more favorably on measures of perceived self-indulgence and self-discipline when informed that the target child's obesity problem was due to a thyroid gland disorder. However, on the liking dimension, the girls rated the obese girl with medical explanation slightly, but not significantly, more negatively than the same child with no explanation.

In this study, we examined factors affecting children's attitudes and behavioral intentions toward a peer presented as obese. We were especially interested in whether these attitudes and intentions were influenced by information attributing the obesity to a medical cause and by the type of activity to be engaged in with the peer. Because most of the previous research has used written vignettes or audiotapes, we wanted to determine if similar findings could be obtained when the obese child and normal-weight child were presented through video. Through video presentation, the visual impact of the obesity could be more directly assessed. Moreover, the participants could see the child in action—walking, sitting, and addressing them.

We also wanted to assess children's responses on two different types of measures—one assessing stereotypic attitudes and the other behavioral intentions. Gottlieb and Gottlieb (1977) propose that certain measures, such as the Adjective Checklist (Siperstein & Bak, 1977) used in this study, assess the cognitive component of attitudes as reflected through the positive or negative features that children may ascribe to a person with a disability. However, measures of behavioral intentions tap the conative component of attitudes—that is, the degree to which children are willing to commit their own behavior toward acceptance or rejection of a person with a disability.

A modified form of the Shared Activities Questionnaire (SAQ-B; Morgan, Biberich, Walker, & Bell, 1996) was used to assess behavioral intentions, that is, children's willingness to engage in certain types of activities with the target child as reflected by ratings on subscales representing three activity areas (i.e., general social, academic, and active recreational). Strohmer, Grand, and Purcell (1984) proposed the term functional specificity in describing how acceptance of individuals with a physical handicap may be influenced by the functional demands of particular situations; this factor may be especially salient when children perceive the physical condition as a disadvantage in certain activities. The results of some research (e.g., Harper et al., 1986; Nabors & Morgan, 1993) provide some support for this hypothesis that the type of context or activity plays a role in the acceptance of an individual with a physical disability.

Two other variables that may affect attitudes toward obesity are age and gender. Cohen, Klesges, Summerville, and Meyers (1989) found that first and third grade boys' sociometric rankings were more negatively affected by obesity than were fifth grade boys' rankings. Although the age range in this study was restricted to third through sixth grade, we wanted to see if this relationship held with younger as well as older children within this range. We were also interested in whether gender—of the responding child and of the target child—might influence children's ratings. Boys have been found to respond less favorably than girls toward peers who are obese (Cohen, Budesheim, MacDonald, & Eymard, 1997; Cohen et al., 1989). However, Cohen et al. (1997) found that responses to audio vignettes
about obese children did not vary significantly based on gender of the target child.

This study specifically assessed children’s attitudes (Adjective Checklist) and behavioral intentions (SAQ-B) toward a peer presented via video under three conditions: average-weight, obese, and obese with medical information (obese/info). The following hypotheses were tested:

1. On both measures children will rate the peer in the obese condition less positively than they rate the peer in the average-weight condition.

2. The presentation of medical information in the obese/info condition will have a positive effect on their Adjective Checklist ratings but no effect on their SAQ-B ratings. This prediction is primarily based on DeJong’s finding that medical information explaining obesity improved ratings of traits (which are assessed by the Adjective Checklist) but not of liking (which is more related to behavioral intentions).

3. On the SAQ-B, children will show less willingness to engage in social and recreational activities with the peer in the two obese conditions than with the peer presented as average weight. Even with explanatory information, children with obesity would be expected to be less preferred than nonobese children for activities in which their obesity might be perceived as a disadvantage (Harper et al., 1986; Nabors & Morgan, 1993).

4. On both measures, older children’s ratings will be less negatively influenced than younger children’s by obesity in the peer and will be more positively influenced by medical information.

5. On both measures, girls will be less negatively influenced than boys by obesity in the peer. However, higher ratings will be given by both boys and girls to the target child of the same gender, regardless of obesity status.

**Method**

**Participants**

Participants were 184 children in the third through sixth grades at an urban public school. The children were recruited via a parental permission/informed consent form distributed by teachers. The participation rate was approximately 70%. The gender distribution was 88 boys and 96 girls; the racial distribution was 110 whites and 74 African Americans.

The predominant socioeconomic status of these children was middle class, as evidenced by the fact that only about 12% of students at that school receive reduced or subsidized lunch prices. To examine age effects with sufficient power, we combined the third and fourth grade for the younger group (n = 97, mean age = 9.00), and the fifth and sixth grade for the older group (n = 87, mean age = 11.02).

The children at each grade level were randomly assigned (stratified according to gender and race) to one of six conditions: (a) average weight boy, (b) average weight girl, (c) obese boy, (d) obese girl, (e) obese boy with information that his obesity is due to a medical problem, and (f) obese girl with information that her obesity is due to a medical problem.

Chi-square tests revealed no significant differences in sex or race distribution from condition to condition between grade levels. ANOVAs revealed no significant differences in age between conditions at each grade level.

**Experimental Conditions**

A fifth-grade boy and fourth-grade girl, each of average body weight, were trained to play the roles of children who are about to begin attending the participants’ school. The performance (for both the boy and girl) was videotaped to use as the stimulus for participants in each of three conditions: average-weight, obese, obese with medical information (obese/info).

Actors were instructed to present the same affect, mannerisms, and voice tone for each condition. For the two obese conditions, the actors recited the same script as that for the average-weight condition but wore a “fat suit” that added approximately forty pounds of weight, which placed their apparent body weight at the 95th percentile or higher. In creating this appearance, the researchers consulted with a university theater department. The same video was used for both obese conditions, but for the obese/info condition, a male adult voice-over, identified as the child’s previous teacher, was added. It provided the following brief explanation of the child’s medical condition:

Tommy/Cathy has a problem with his/her glands that causes him/her to gain weight very easily. He/she eats about the same amount of food as most children his/her age but more food
is stored up, so he/she gains more weight than most children.

The video lasted approximately 100 seconds for each condition. The adult voice-over also gave instructions about filling out the surveys, and in the average-weight and obese/info conditions, “filler” instructions were included to balance the total presentation time. These filler instructions, which were later repeated for children in all conditions, stated that they would be provided pencils and be given help in completing the forms.

**Dependent Measures**

*The Adjective Checklist.* The Adjective Checklist (Siperstein, 1980; Siperstein & Bak, 1977) has been used extensively in research on the measurement of elementary school children’s attitudes toward people with handicaps. It includes a list of 32 adjectives; half of the adjectives have a positive value (e.g., smart, neat) and half have a negative value (e.g., dumb, sloppy). Each rater endorses all the adjectives that best describe the target child. The checklist is scored by subtracting the total negative adjectives endorsed from the total positive and adding a constant of 20; scores may range from 4 to 36, with scores above 20 indicating more positive and scores below 20 indicating more negative attitudes. Factor analysis confirmed construct validity for positive or negative value of the adjectives, and a coefficient alpha of .81 indicated acceptable internal consistency (Siperstein, 1980). The coefficient alpha for the current sample was .91.

Concurrent and construct validity, based on a sample of 233 elementary school children, was examined through Pearson correlations with the SAQ (Morgan et al., 1996). These correlations, all of which are significant ($p < .01$), were .46 for the Total Score, .45 for the General Social factor score, .41 for the Academic factor score, and .36 for the Recreational factor score. While these correlations suggest a strong relationship between stereotypic attitudes and behavioral intentions, they also suggest that they represent different constructs, as proposed by Gottlieb and Gottlieb (1977).

*Shared Activity Questionnaire (SAQ).* The SAQ is an experimental scale developed to assess willingness of an elementary school child to engage in certain activities with a target child (Morgan et al., 1996). The SAQ includes 24 items (estimated to be at the second to third grade reading level) covering three broad activity areas: General Social (e.g., “Eat lunch next to Tommy/Kathy at school”), Academic (e.g., “Work arithmetic problems in class with Tommy/Kathy”), and Active Recreational (e.g., “Go to a ball game with Tommy/Kathy”). Below each item are line drawings of faces with corresponding responses: “yes” with a smile, “maybe” with a neutral expression, and “no” with a frown. The subject circles the answer that shows how he or she feels about sharing each activity with the target child (SAQ). Each item is scored as “yes” = 3, “maybe” = 2, and “no” = 1. A total score can be obtained as well as a score for each of the three activity areas, with higher scores reflecting more willingness to share in the activity.

A confirmatory factor analysis of the SAQ-A yielded a comparative fit index for the three-factor solution of .95 (Morgan et al., 1996). The mean item loading for the three factors was as follows: General Social, .69 (with a range of .56 to .76); Academic, .68 (with a range of .54 to .83); Recreational, .73 (with a range of .69 to .81). Internal consistency reliability, as reflected by coefficient alpha, was .95 for the SAQ Total Score, .88 for the General Social factor score, .87 for the Academic factor score, and .90 for the Recreational factor score. Comparable internal consistency coefficients were obtained with the SAQ-B with the current sample of children: .94 for the Total Score, .86 for the General Social factor score, .83 for the Academic factor score, and .86 for the Recreational factor score.

**Procedure**

After parental permission was obtained, children were informed that their participation was voluntary and that they could withdraw without penalty. They then viewed the videos in small groups and responded on the SAQ-B and Adjective Checklist. The experimenters read each item aloud to the children and circulated in the room to help as needed.
After completion of the measures, the following question was asked of children in the Obese and Obese/info conditions to determine whether they comprehended the additional information in the Obese/info condition: “How much do you feel it is Tommy/Kathy’s fault for being overweight?” The responses were scored on a 3-point Likert scale (not at all = 1, a little = 2, a lot = 3).

Results

Manipulation Check on Assignment of Fault

As a manipulation check, a 2 (obesity condition) × 2 (gender of rating child) × 2 (gender of target child) × 2 (age) ANOVA was used to compare the amount of fault participants assigned to the target child for being obese in the two obesity conditions. We found a highly significant effect for obesity condition, F(1, 109) = 22.01, p < .001; children in the obese/info condition (M = 1.5) assigned less fault than those in the obese condition (M = 2.1). Significant differences were noted for gender, F(1, 109) = 4.13, p = .045, and age, F(1, 109) = 6.37, p = .013; girls (M = 1.66) assigned less fault to the target children than did boys (M = 1.93), and younger children (M = 1.63) assigned less fault to the target children than did older children (M = 1.98).

Adjective Checklist

Table I presents the means and standard deviations for scores on the Adjective Checklist and for total scores on the SAQ-B.

A 3 (obesity condition) × 2 (gender of rating child) × 2 (gender of target child) × 2 (age) factorial analysis of variance (ANOVA) revealed significant main effects for obesity condition, F(2, 160) = 6.83, p = .001, and age, F(1, 160) = 13.73, p < .001, and a significant two-way interaction between obesity and gender, F(2, 160) = 3.56, p = .031. The interaction between obesity and age was marginally significant, F(2, 160) = 2.91, p = .058.

A follow-up one-way ANOVA revealed significant differences between obesity conditions, F(2, 181) = 5.06, p = .007. The Student-Newman-Keuls test indicated that ratings for the average-weight condition (M = 27.73) were higher than those for the obese condition (M = 23.25); the ratings for the Obese/info condition (M = 25.31) did not differ significantly from those for either of these two conditions. This main effect, however, should be interpreted in light of the significant obesity by gender interaction. A one-way ANOVA comparing boys' ratings between obesity conditions revealed significant differences, F(2, 85) = 5.12, p = .008. The Student-Newman-Keuls follow-up test indicated that boys rated the target child in the average-weight condition (M = 28.74) more favorably than...
they did the child in the obese condition (M = 21.37), but ratings for neither of these conditions differed from those for the obese/info Condition (M = 24.59). A one-way ANOVA revealed no significant differences for girls between conditions.

As reflected in the main effect for age, younger children (M = 27.25) gave more positive ratings than older children (M = 23.45). An exploratory follow-up analysis was performed at each age level to examine the marginally significant interaction between obesity and age. A one-way ANOVA for younger children revealed significant differences between obesity conditions, F(2, 94) = 6.09, p = .003. The Student-Newman-Keuls follow-up test indicated that these children rated the target child in the average-weight condition (M = 30.67) and in the obese/info condition (M = 27.79) more favorably than in the obese condition (M = 23.58). Older children showed no significant differences in ratings for obesity conditions.

**SAQ-B**

A 3 (obesity condition) × 2 (gender of rating child) × 2 (gender of target child) × 2 (age) ANOVA was used to analyze the SAQ-B Total Score. Significant main effects were found for age, F(1, 160) = 8.12, p = .005, and gender, F(1, 160) = 4.12, p = .044; younger children (M = 52.60) generally showed more positive behavioral intentions than older children (M = 47.63) and girls (M = 51.70) generally showed more positive behavioral intentions than boys (M = 48.50). A significant interaction was found between the gender of the rating child and gender of the target child, F(1, 160) = 9.17, p = .003; across conditions and grades, boys showed more positive behavioral intentions toward boys (M = 51.90) than toward girls (M = 45.19), whereas girls showed more positive behavioral intentions toward girls (M = 54.26) than toward boys (M = 49.58).

A 3 (obesity condition) × 2 (gender of rating child) × 2 (gender of target child) × 2 (age) MANOVA was used to analyze the three SAQ-B activity area scores. Overall, this analysis yielded the same results as that yielded by the total SAQ analysis regarding main effects for age and gender. A significant interaction was indicated between obesity condition and age, F(6, 316) = 3.33, p = .003. Univariate tests revealed a significant effect for Academic, F(2, 160) = 6.63, p = .002, and Recreational, F(2, 160) = 15.92, p = .011, activity areas. One-way ANOVAs examining ratings of younger children for the three obesity conditions revealed a significant effect for the Recreational area, F(2, 94) = 3.46, p = .035. A Student-Newman-Keuls follow-up test revealed that younger children showed less willingness to engage in active recreational activities with the child in the obese condition (M = 15.70) than with the average-weight child (M = 18.03), but their ratings for neither of these conditions significantly differed from those for the obese/info condition.

One-way ANOVAs examining ratings of older children for the three obesity conditions revealed a significant effect for the Academic area, F(2, 86) = 3.18, p = .046. A Student-Newman-Keuls follow-up test revealed that older children showed less willingness to engage in academic activities with the child in the obese/info condition (M = 15.03) than with the child in the obese condition (M = 17.14).

**Discussion**

A summary of the results, as they apply to the specific hypotheses, is as follows. The first hypothesis was generally confirmed with age and gender qualifications. On the Adjective Checklist boys rated the child in the obese condition less positively than they rated the child in the average-weight condition, but girls showed no differences in these ratings. On the SAQ-B younger children showed less willingness to engage in active recreational activities with the child in the obese condition than with the average-weight child. The second hypothesis was partially confirmed in Adjective Checklist and SAQ-B ratings, again with age qualifications. Younger children tended to show more positive ratings on the Adjective Checklist for the child in the obese/info condition than for the child in the obese condition, whereas older children showed no significant differences. On the SAQ-B, the information produced no significant effect for younger children, but had a negative effect on ratings of older children for academic activities. The third hypothesis regarding the relationship between obesity status and activity area was supported only by the finding that younger children showed less willingness to engage in active recreational activities with the child in the obese condition than with the average-weight child. However, older children showed less willingness to engage in academic activities with the child in the obese/info condition than with the child in the obese condition. The fourth hypothesis

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was not clearly confirmed by the results, already summarized, concerning effects of age. These results present a complex pattern that we discuss later. The fourth hypothesis regarding gender effects was at least partially confirmed. On the Adjective Checklist, boys rated the peer in the obese condition less favorably than in the average-weight condition, but girls showed no differences in ratings for any conditions. On the SAQ-B, there were no gender differences related to obesity condition. However, irrespective of obesity status, for most activities boys clearly preferred the boy target, whereas girls clearly preferred the girl target.

Our results indicate that provision of information explaining the obesity had limited positive influence on the children’s attitudes even though they clearly assigned less fault to the child in the obese condition. Only younger children, who attributed less fault than older children, tended to show improvement in attitudes with provision of information. These results provide limited support for Weiner’s attribution hypothesis and are partially consistent with DeJong’s (1993) results. The provision of medical information had even less positive impact on behavioral intentions as assessed by the SAQ-B. For younger children, the information had no effect on willingness to share activities with the obese peer; for older children, it had a negative effect on willingness to share academic activities with the obese peer. These results appear to be consistent with the those of Sigelman (1991), who found that provision of low-responsibility information reduced the children’s tendency to hold an obese child responsible for being obese but did not alter their liking for the obese child. They are also consistent with findings for other conditions such as diabetes and epilepsy (Potter & Roberts, 1984) and Tourette’s disorder (Friedrich, Morgan, & Devine, 1996) that showed that explanatory information had no impact or even a negative impact.

Analysis of differences concerning activity areas generally failed to confirm the prediction that obesity would have more negative effects on willingness to share social and recreational areas. However, children did demonstrate some differential activity ratings related to obesity. Younger children showed less positive behavioral intentions toward the child in the obese condition than toward average-weight child, but only for the recreational area. Older children showed differences only for the academic area, with lower ratings given to the child whose obesity was medically explained. One interpretation of this finding is that among older children, for whom conformity with the peer group appears increasingly important, such information merely serves to accentuate the physical difference. Why this affected only the academic area, instead of social and recreational areas, is difficult to explain. Perhaps this is the area in which the children feel that they, of necessity, have the most everyday contact with the obese child.

The prediction that older children would respond more positively, on both measures, than younger children to the obese conditions and to the presentation of information was not confirmed. In fact, the results tended to support the reverse pattern. For older children, the information either had no effect or a negative effect on ratings. This difference might be partially explained by the finding that younger children attributed less fault to the child in the obese/info condition than did older children. Even in the face of exonerating information, older children still may have attributed some responsibility to the peer for the problem, at least as reflected in their ratings of willingness to interact with the peer in academic activities. Moreover, older children may have been more affected than younger children by the nature of the disorder and the stigma associated with it, irrespective of the cause. This interpretation is consistent with Sigelman’s (1991) conclusions and with recent findings, based on measures similar to those used in this study, that children show highly positive behavioral intentions toward a peer in a wheelchair, even in the absence of information regarding causation (Morgan, Bieberich, Walker, & Schwerdtfeger, 1998).

The only gender difference related to obesity status that emerged was consistent with previous findings in showing that boys’ attitudes were negatively affected by obesity, whereas girls’ ratings were not. Moreover, as has been found in research with other conditions (e.g., Morgan et al., 1998), our results indicate that gender is much more potent than obesity status in predicting behavioral intentions—that is, boys prefer boys, and girls prefer girls, regardless of obesity status.

The results of this study should be considered in light of some potential limitations, primarily concerning the issue of external validity. Although presenting the child in action via video appears to more closely approximate a realistic interaction than that created by stimuli used in previous studies, such media presentation would still have less
Our findings raise issues for future research. In view of the minimal impact of exonerating information on attitudes and behavioral intentions, the question of whether such information has a significant positive impact certainly needs further study. The influence of other methods of presenting information to improve attitudes and behavioral intentions toward children with obesity and other physical and behavioral disorders should be explored. Perhaps the most important issue concerns the relationships between certain types of measures and the predictions that we can make from them to children’s actual interactions and activities within different contexts. Research is needed that relates measures of attitudes and behavioral intentions to these in vivo interactions, as assessed through sociometric ratings or more directly through observations of everyday behavior.

Our results also provoke some challenging questions concerning clinical interventions. Because of the absence of positive effects of presenting information explaining obesity, one might conclude that any intervention involving presentation of such information might be counterproductive and even promote more negative attitudes in children toward obese peers. On the basis of our results, we feel that such a conclusion is unwarranted. Our results certainly confirm those of previous studies showing that obese children are viewed negatively by their peers. Further, our results indicate that a brief presentation of information via video had little positive impact—and even some negative impact in the case of older elementary school children. These findings point to the need for refinement of methods and content in presenting such information to children in educational and clinical programs. For example, a video that presents not only information but also includes a child who models positive interactions with a peer who is obese might have more beneficial impact on attitudes and behavioral intentions. Perhaps a better alternative to any brief educational intervention might be adaptations of already developed, more lengthy, systematic, and integrated programs that use children’s stories, movies, dolls, discussion groups, and other forms of media both to inform children about handicapping conditions and to promote development of empathy and compassion for children with such conditions (e.g., Heekin and Mangel, 1983).

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