

# Child versus Parent Report of Parental Influences on Children's Weight-related Attitudes and Behaviors

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**Objective** To compare parent and child report of parental weight-related behaviors and examine their respective associations with child's weight-related outcomes. **Methods** Seventy-three parent-child dyads completed self-administered surveys that assessed parent and child report of parental direct weight-related behaviors (comments to child about weight, encourage child to diet) and indirect behaviors (dieting, comments about own weight/appearance). Outcome variables included child's body dissatisfaction, weight concerns, and dieting. **Results** Considerable disagreement (21–30%) was found between parent and child report of parental weight-related behaviors. Both the parent and child report of direct parental behaviors were associated with child's outcomes. Child report of parental indirect behaviors was more consistently associated with child's outcomes than parent report. **Conclusion** Parent weight-related behaviors, both direct and indirect, are positively associated with child's weight-related attitudes and behaviors.

**Key words** body image; children; dieting; parents; weight control.

Dieting, body dissatisfaction, and heightened concern about weight are pervasive among adolescents with the onset of these attitudes and behaviors often occurring in childhood (Smolak, Levine, & Schermer, 1998). Factors within the home environment, particularly parental behaviors, have been identified as putative risk factors for the development of weight-related concerns and behaviors in youth (Byely, Archibald, Graber, & Brooks-Gunn, 2000). Two potential mechanisms through which parental behaviors may influence child's weight-related outcomes are: communication to the child about their weight and weight-related behaviors (direct influence), and modeling of weight-related concerns and behaviors (indirect influence) (Byely et al., 2000).

Evidence for the association between both direct and indirect parental influences and child's weight-related behaviors and concerns has been mixed and these findings appear to differ, in part, depending on whether parental behaviors are assessed by child or parent report. For example, although several studies that used child report of parental encouragement to diet (direct parental behavior) have found a positive association with encouragement to diet and child's dieting behavior (Dixon, Adair, &

O'Connor, 1996; Hanna & Bond, 2006; Huon, Lim, & Gunewardene, 2000; Strong & Huon, 1998), research using parent report of parental encouragement to diet has provided less consistent associations with child outcomes (Fulkerson et al., 2002; Thelen & Cormier, 1995).

Although some studies that used parent self-report measures of indirect parental behaviors (e.g., modeling of dieting behaviors and parental weight concern) have found modest positive associations between indirect parental behaviors and the child's weight-related concerns and behaviors (Francis & Birch, 2005; Hill, Weaver, & Blundell, 1990; Smolak, Levine, & Schermer, 1999; Usmiani & Daniluk, 1997), others have found no association (Byely et al., 2000; Wertheim, Martin, Prior, & Sanson, 2002). Inconsistent results have also been shown in studies that assess indirect parental behaviors using child report (Dixon et al., 1996; Field et al., 2001; Levine, Smolak, Moodey, Shuman, & Hessen, 1994).

Although few studies have compared parental self-report and child's perception of parental weight-related behaviors and their associations with child's weight-related outcomes, there is some evidence that children's

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perceptions of parental behaviors are stronger predictors than parents' report (Field et al., 2005; Keery, Eisenberg, Boutelle, Neumark-Sztainer, & Story, 2006). The current study will build upon this sparse literature by pursuing the following three aims: (a) examine the prevalence of direct (e.g., comments to child about weight) and indirect (e.g., dieting) parent weight-related behaviors; (b) compare parent and child report of parental weight-related behaviors; and (c) examine associations between parental weight-related behaviors (assessed by child and parent report) and child's body dissatisfaction, weight concerns, and dieting. We will examine these aims using data from an ethnically diverse, primarily low-income sample of elementary school children and one of their parents/primary caregivers.

## Methods

### Participants

Seventy-three children (55 girls and 18 boys) and one of their parents or other primary caregivers participated in an evaluation of the *Ready, Set, ACTION!* (RSA) program, a theatre-based intervention aimed at obesity prevention. The RSA intervention study included 108 students in grades four through six. Because the current study sought to understand the impact of the family environment on the weight-related behaviors of children, the data for the 35 children whose parents did not complete the baseline survey were excluded from these analyses.

Children were recruited from four urban elementary schools in St Paul, MN that serve primarily low-income populations; ~90% of the students at each school qualify for free or reduced lunch (Department of Children, Family and Learning, 2006). The mean (*SD*) age of the children included in these analyses was 10.1 years (1.1). The ethnic distribution was as follows: African American 57.5% ( $n = 42$ ), Asian/Hmong 11.0% ( $n = 8$ ), White 8.2% ( $n = 6$ ), Hispanic 2.7% ( $n = 2$ ), and mixed/other 20.5% ( $n = 15$ ). The children's mean (*SD*) body mass index (BMI; calculated as weight in kilograms divided by height in meters squared) was 21.2 (5.4). Of the children, 18% ( $n = 13$ ) were at risk for overweight (BMI percentile  $> 85^{\text{th}} < 95^{\text{th}}$ ) and 24.7% ( $n = 18$ ) were overweight (BMI percentile  $> 95^{\text{th}}$ ). The parent/primary caregiver sample included 69.9% ( $n = 51$ ) mothers, 12.3% ( $n = 9$ ) fathers, 4.1% ( $n = 3$ ) stepmothers, 4.1% ( $n = 3$ ) grandmothers, 4.1% ( $n = 3$ ) aunts, 1% ( $n = 1$ ) uncle, and 4.1% ( $n = 3$ ) other primary caregivers.

Written consent was obtained from parents or primary caregivers for their own participation in the study, as well as for their child to participate in the study. The children also signed a written assent form. Ethical

approval for this study was received from the Institutional Review Board of the University of Minnesota and the Saint Paul Schools Research Committee.

### Survey Tools and Data Collection

Measures assessed on the child and parent surveys are described in Table I. The development of the RSA child and parent surveys was guided by a theoretical framework (Social Cognitive Theory; Bandura, 1986), a review of existing instruments (Baranowski et al., 2002; Haines, Neumark-Sztainer, Perry, Hannan, & Levine, 2006; Neumark-Sztainer, Sherwood, Collier, & Hannan, 2000; Neumark-Sztainer, Story, Hannan, & Rex, 2003; Rochon et al., 2003), and a pilot test of the student survey with nine fourth through sixth grade students. Trained research staff administered the survey to the children during their after-school sessions.

Two methods were used to obtain survey data from parents. First, surveys were sent home to parents/caregivers for them to complete and return using a postage paid envelope. Research staff then called any parents/caregivers who did not return their survey by mail to provide them with the opportunity to complete the survey over the phone. Approximately 10% of parents completed the telephone survey.

### Data Analysis

To determine prevalence of parental weight-related behaviors (aim 1), we calculated the number and percent of children and parents who reported that these parental behaviors occurred greater than or equal to a few times a month. To assess difference in responses from parents and children (aim 2), we calculated average gross disagreement across pairs of parents and children, (disagreement beyond an adjacent answering category). We used linear regression to examine associations of parental weight-related behaviors (both child and parent report) with child's body image and level of weight concern and logistic regression to examine associations of parental behaviors and child's dieting behavior (aim 3). Child's age, race/ethnicity, gender, and age and sex-specific *z*-scores of BMI were controlled for in all regression models. All *p*-values are two-tailed, with  $p < 0.05$  considered statistically significant.

## Results

### Prevalence of Direct and Indirect Parent Weight-related Behaviors

A substantial percentage of the 73 children reported that their parents made a comment to them about their weight (23%), encouraged them to diet (25%), dieted themselves

**Table I.** Description of Child and Parent Reported Measures

| Construct/variable  | Description of assessment  |
|---|--|
| Child demographics and weight-related                       | Concerns and behaviors   |
| Race/ethnicity  | Ethnicity was assessed with the question: Do you think of yourself as Hispanic/Latino (yes/no). Race was assessed with question:<br>"Do you think of yourself as: 1) White; 2) Black/African-American; 3) Asian-American; 4) Hmong; 5) American-Indian; 6) Other."   |
| BMI   | Height and weight measures were assessed by trained research staff using standardized equipment and procedures (Lohman, Roche, & Martorell, 1988). Age and sex-specific BMI z-scores were calculated based on the Center for Disease Control growth charts, which are age and sex specific (Kuczmarski et al., 2000).                  |
| Child's weight concern                                      | Four-item scale: "In the past month, how often have you: (a) thought about having fat on your body; (b) felt fat; (c) worried about gaining 2 pounds; and (d) thought about wanting to be thinner?" Response options were never, sometimes, often, and almost always. Cronbach's $\alpha = .80$ (Shisslak et al., 1999)                |
| Child's body dissatisfaction                                | Five-item scale: (a) "My weight makes me unhappy," (b) "I like what I see in the mirror," (c) "I think I have a good body," (d) "I'm proud of my body," and (e) "Most people have a nicer body than me." Yes/no. Cronbach's $\alpha = .74$ (Mendelson & White, 1982; Smolak et al., 1999)  |
| Child's dieting behavior                                    | One item: "Have you gone on a diet in the past month? By diet we mean change the way you eat so you can lose weight." Yes/no.  |
| Parental weight-related behaviors (child and parent report) |  |
| Parental weight-related behaviors                           | Parental weight-related behaviors were assessed via child and parent report. A description of child survey items is provided below; similar items were used on parent survey with minor wording modifications (e.g., In the past month, how often have you or your spouse or partner made a comment to this child about their weight). |
| Parental comments:<br>Child's weight                        | One item: "In the past month, how often have your parents/guardians made a comment to you about your weight that made you feel bad." Response options were: (a) never; (b) once a month; (c) a few times a month; and (d) at least once a week.  |
| Parental encouragement to diet                              | One item: "In the past month, how often have your parents/guardians encouraged you to lose weight." Response options were: (a) never; (b) once a month; (c) a few times a month; and (d) at least once a week.   |
| Parental dieting  | One item: "In the past month, how often have your parents/guardians: (a) gone on a diet." Response options were: (a) never; (b) once a month; (c) a few times a month; and (d) at least once a week.   |
| Parental comments: Own weight                               | One item: "In the past month, how often have your parents/guardians: (a) complained about their weight; and (b) complained about how they look." Response options were: (a) never; (b) once a month; (c) a few times a month; and (d) at least once a week.  |

(30%), and made comments about their own weight (22%) or appearance (23%) at least a few times per month. Overall, far fewer parents reported these behaviors; 11% of parents reported that they made a comment about their child's weight, 10% reported they encouraged their child to diet, and 8% reported that they had dieted. In contrast, a slightly higher percentage of parents reported making comments about their own weight (27%) or appearance (25%) than the children reported.

### **Level of Disagreement Between Parent and Child Report**

The highest levels of disagreement were found for the indirect parental behaviors assessed: parental comments about own weight (30%), appearance (29%), and parental dieting (28%). Slightly lower levels of disagreement were found for the direct parental behaviors: parental

encouragement for child to lose weight (21%) and parental comments to child about child's weight (26%).

### **Associations between Parental Weight-related Behaviors and Child's Outcomes**

Child and parent report of parental comments about child's weight were significantly associated with higher levels of body dissatisfaction and weight concern in children in analyses adjusted for child's age, gender, race/ethnicity, and BMI z-score (Table II). Parent report of comments about child's weight was significantly associated with child's dieting behaviors, whereas the child report was not.

Both child and parent report of parental encouragement to diet were significantly associated with higher levels of body dissatisfaction and weight concern in children (Table II). Child report of parental encouragement to diet

**Table II.** Associations between Parental Weight-related Behaviors (as reported by child and parent) and Child's Body Dissatisfaction, Weight Concern, and Dieting

|   | Body dissatisfaction                |                |                                      |                | Weight concern                      |                |                                      |                | Dieting                             |                             |                                      |                             |
|---|-------------------------------------|----------------|--------------------------------------|----------------|-------------------------------------|----------------|--------------------------------------|----------------|-------------------------------------|-----------------------------|--------------------------------------|-----------------------------|
|   | Child reported model <sup>a,b</sup> |                | Parent reported model <sup>a,b</sup> |                | Child reported model <sup>a,b</sup> |                | Parent reported model <sup>a,b</sup> |                | Child reported model <sup>a,b</sup> |                             | Parent reported model <sup>a,b</sup> |                             |
|   | $\beta$ (SE)                        | R <sup>2</sup> | $\beta$ (SE)                         | R <sup>2</sup> | $\beta$ (SE)                        | R <sup>2</sup> | $\beta$ (SE)                         | R <sup>2</sup> | OR (95% CI)                         | R <sup>2</sup> <sup>c</sup> | OR (95% CI)                          | R <sup>2</sup> <sup>c</sup> |
| Parental comments to child about child's weight | 0.34 (0.17)*                        | 34%            | 0.56 (0.21)**                        | 37%            | 1.42 (0.35)**                       | 38%            | 1.30 (0.47)**                        | 30%            | 1.28 (0.80, 2.06)                   | 19%                         | 2.49 (1.07, 5.78)*                   | 23%                         |
| Parental encouragement for child to diet        | 0.44 (0.19)**                       | 35%            | 0.48 (0.21)*                         | 34%            | 1.25 (0.42)**                       | 32%            | 1.06 (0.47)*                         | 28%            | 1.81 (1.03, 3.21)*                  | 21%                         | 1.37 (0.73, 2.59)                    | 18%                         |
| Parental dieting                                | 0.38 (0.16)*                        | 35%            | 0.35 (0.24)                          | 32%            | 0.69 (0.37)*                        | 26%            | 0.61 (0.53)                          | 25%            | 2.01 (1.19, 3.42)**                 | 25%                         | 2.21 (0.95, 5.15)                    | 19%                         |
| Parental comments about own weight/appearance   | 0.19 (0.10)*                        | 34%            | 0.10 (0.10)                          | 31%            | 0.71 (0.21)**                       | 34%            | 0.44 (0.23)                          | 26%            | 1.37 (1.01, 1.87)*                  | 22%                         | 1.26 (0.91, 1.73)                    | 19%                         |

<sup>a</sup>Adjusted for race/ethnicity, age, gender, and BMI z-score.

<sup>b</sup>R<sup>2</sup> for base model (including only covariates) body satisfaction, 30%; weight concern, 22%; dieting, 17%.

<sup>c</sup>Pseudo R<sup>2</sup> were calculated for logistic regression equations (Long & Freese, 2006, p. 84).

\* $p < .05$ .

\*\* $p < .01$ .

was significantly associated with more frequent dieting among children, whereas parent report was not.

Child report of parental dieting was significantly associated with an increase in all three child outcomes examined (body dissatisfaction, weight concerns, and dieting; Table II). In contrast, no significant associations were found between parent report of dieting and any of the child outcomes.

Child report of parental comments about their own weight/appearance was significantly associated with an increase in child's body dissatisfaction, weight concerns, and dieting behaviors (Table II). No significant associations were found between parent report of comments about own weight/appearance and child's outcomes.

The parental behavior variables, in both the parent and child reported models, explained 5–10% of the variance beyond what was explained by the base model, which included race/ethnicity, age, gender, and BMI z-score (Table II).

## Discussion

In this study, we found that children's perception of their parents' behaviors differed from the parent report. For indirect parental behavior (dieting, comments about own weight/appearance), child report was more consistently associated with child weight-related outcomes than parent report. For direct parental behaviors (comments to child about weight, encouraging child to diet), both the parent

and child report were significantly associated with the child outcomes.

For three of the four parental behaviors, the children reported higher frequencies of parental behaviors than the parents. One explanation for this discrepancy is that the parental responses may be more strongly affected by socially desirability bias. Alternatively, given that many of these weight-related behaviors are so normative (e.g., dieting), it is possible parents do not even think to report them. Children, on the other hand, may be particularly sensitive to their parent's comments and actions and may pick up on some of the more subtle nuances of their parent's behavior. These results suggest the importance of educating parents that their children may be picking up on their subtle weight-related comments and behaviors.

We found that the parental behavior variables accounted for ~5–10% of the variance in the child outcomes beyond the demographic variables and BMI, suggesting that although parental behaviors have a meaningful influence on child's weight-related behaviors and concerns, additional factors, such as peers and media, may be important predictors of these outcomes (Field et al., 2001). Also of note, is that the demographic, immutable factors accounted for a larger percentage of the variance in these outcomes than the parental factors.

Our findings are limited by the cross sectional design and the brief survey items used to assess parental behaviors. Experimental research, such as community-

based trials, that can test whether changes in parental behavior can result in decreased child's weight-related concerns and behaviors is needed to provide stronger evidence of causality. Additionally, given the small sample, we were unable to examine if associations differed across child gender and, since we obtained data from only one parent, we were unable to examine if associations between parental behaviors and child's outcomes differed by gender of the parent.

### Implications

Our results highlight the importance of recognizing potential differences that may exist between parent and child perceptions of parent weight-related behaviors. Importantly, our results demonstrate that, regardless of whether a child or parent reports these parental factors, parent behaviors, both direct and indirect, can have an adverse effect on child's weight-related behaviors and concerns. Intervention programs focused on providing parents with guidance and skills for creating a home environment that can foster healthy weight-related behaviors among their children should be developed and evaluated.

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