Weight-Related and Shape-Related Self-Evaluation in Eating-Disordered and Non–Eating-Disordered Women

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Abstract: Objective: Weight- and shape-related self-evaluation refers to the process whereby an individual determines her self-worth based on an evaluation of her body weight and shape. This is a hallmark feature of both anorexia and bulimia nervosa, as specified in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders. The purpose of this study was to further our understanding of weight-related self-evaluation in eating-disordered women. Method: Eating-disordered patients, restrained eaters, and unrestrained eaters completed an experimenter-designed questionnaire that examines different dimensions of weight-related self-evaluation (i.e., the Multidimensional Weight-Related Self-Evaluation Inventory). Results: Results revealed that weight-related self-evaluation is a feature shared, to some extent, by both eating-disordered patients and restrained eaters. However, eating-disordered patients extend weight-related self-evaluation to include more domains of self-esteem than did restrained eaters. Discussion: These findings support a multidimensional approach to weight-related self-evaluation and further our understanding of the process of weight-related self-evaluation in eating-disordered patients. © 2001 by John Wiley & Sons, Inc. Int J Eat Disord 29: 328–335, 2001.

Key words: weight and shape-related self-evaluation; eating-disordered patients; restrained eaters

INTRODUCTION

Weight- and shape-related self-evaluation refers to the process whereby an individual determines self-worth based on an evaluation of her body weight and shape. This process...
could work in both directions. An individual who is dissatisfied with her weight or shape may extend this dissatisfaction to other aspects of herself, evaluating them more negatively and experiencing lower overall self-esteem (i.e., negative weight-related self-evaluation). Similarly, an individual who is satisfied with her weight or shape may evaluate other aspects of herself more positively, and experience higher overall self-esteem (i.e., positive weight-related self-evaluation). Weight-related self-evaluation differs from body dissatisfaction in that weight-related self-evaluation refers to the impact that body dissatisfaction or satisfaction has on general self-esteem.

Although positive weight-related self-evaluation has not received any attention in the literature, negative weight-related self-evaluation has been posited to play an important role in both the development and maintenance of eating disorders. It has been suggested by many theorists that individuals with eating disorders devalue all aspects of their self-worth owing to negative perceptions of their weight and shape (Bruch, 1973, 1978; Fairburn, 1985; Garner & Bemis, 1982; Garner & Garfinkel, 1981; Vitousek & Hollon, 1990). Garner and Bemis (1982) suggested that patients with anorexia nervosa use weight and shape as the sole or predominant referent for inferring personal value, and are notable for their rigid beliefs about the importance of weight as the basis of self-esteem. Fairburn (1985) theorized that individuals with bulimia nervosa overestimate the importance of shape and weight. He added that by judging their self-worth in terms of these attributes, people with bulimia are provided with a simple measure of strengths and weaknesses. “By concluding that she is fat, she is providing herself with a convenient excuse for a host of interpersonal problems” (p. 182). Similarly, Vitousek and Hollon (1990) stated, “weight itself —the numbers on a scale, the inches on a tape measure—and all the mechanical aspects of calorie-counting and exercising involved in regulating it offer [eating-disordered patients] a clear, clean template against which most of their daily activities can be evaluated” (p. 208). The link between self-esteem and weight and shape is also reflected in the diagnostic criteria for both anorexia and bulimia nervosa (American Psychiatric Association [APA], 1994).

Given that weight-related self-evaluation is considered a key component of the psychopathology in eating disorders, it is surprising that it has not received more attention in the empirical literature. There is some evidence that greater importance placed on weight and shape at the end of treatment may signal a negative prognosis. In a small sample of patients who had recovered from bulimia nervosa, Fairburn, Peveler, Jones, Hope, and Doll (1993) found that higher scores on the weight and shape concern subscales of the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987) predicted an increased likelihood of relapse in bulimia nervosa patients.

Recently, the Shape and Weight-Based Self-Esteem Inventory was developed to measure this concept by self-report (Geller, Johnston, & Madsen, 1997). Participants are asked to select from a list of personal attributes the ones that are important to how they feel about themselves and to rank order them. Then, participants are asked to divide a circle into pieces, such that the size of each piece reflects how much their self-esteem is based on each of the ranked attributes. The shape- and weight-based self-esteem score is the angle of the shape and weight piece of the circle. The researchers found a mean angle of 58° for the weight and shape wedge in their nonclinical sample of women. They also found that greater evaluation of the self on the basis of weight and shape was related to higher levels of depression and lower levels of overall self-esteem. In another study, Geller et al. (1998) found that eating-disordered patients reported greater weight-based self-esteem (mean angle = 144.8°) than both a psychiatric control group (mean angle = 62.8°) and an undergraduate control group (mean angle = 59.5°). The psychiatric patients
and the undergraduate students did not differ from one another with respect to weight-based self-esteem.

Although the specificity of weight-related self-evaluation in disordered eating was supported by Geller et al. (1998), there remains some question as to whether weight-related self-evaluation is unique to eating-disordered individuals. There is some evidence that weight-related self-evaluation may also exist in restrained eaters. Restrained eaters are individuals who are concerned about their weight and shape and have a history of dieting. Although restrained eaters differ fundamentally from individuals who have eating disorders, they do share similar types of weight and shape concerns (Polivy & Herman, 1987). In a study designed to explore the impact of weight fluctuation on self-esteem, McFarlane, Polivy, and Herman (1998) provided restrained and unrestrained eaters with false information about their weight. Restrained eaters who were led to believe they were heavier than they thought they were reported lower self-esteem than all other groups. Furthermore, the reduction in self-esteem included aspects of the self not directly related to weight and shape (i.e., social self-esteem). Thus, it appeared that restrained eaters engaged in weight- and shape-related self-evaluation.

The purpose of this study was to replicate and extend the findings of Geller et al. (1998) by further determining the specificity of weight-related self-evaluation in eating disorders. The current inventory provides a single measure of total weight-based self-esteem (Geller et al., 1997). We were interested in a multidimensional perspective of weight-related self-evaluation. Therefore, we developed a measure that included negative and positive weight-related self-evaluation, as well as a measure of the impact of weight-related self-evaluation on three specific areas of self-esteem (i.e., appearance, social, and performance; see the appendix).

METHOD

Participants

Ninety-nine participants completed this study. There were 34 eating-disordered patients and 65 university students. Eating-disordered patients were selected from the Ambulatory Care for Eating Disorders Program at the Toronto General Hospital. Of this sample, 6, 12, and 16 patients met criteria for anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified (ED-NOS) before entering treatment as outlined in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994). Within the ED-NOS category, 8 patients binged and/or purged below the frequency criteria for bulimia nervosa, 6 patients met criteria for binge eating disorder (BED), and 2 patients were slightly above the weight criteria for anorexia nervosa. Because no specific hypotheses were made regarding weight-related self-evaluation across the diagnostic subtypes, these classifications were combined into one eating-disordered group in this study. The eating-disordered patients were at various stages of treatment. First-year university students from the University of Toronto participated in this study in exchange for course credit. Students were classified as restrained or unrestrained eaters based on the Restraint Scale (Herman & Polivy, 1980). Consistent with previous studies, participants obtaining a score of 15 or higher were classified as restrained eaters (n = 31), whereas those obtaining a score below 15 were classified as unrestrained eaters (n = 34).

Procedure

Eating-disordered patients and university students were scheduled for an individual appointment with either the first or second author. When the participants arrived in the
laboratory, they were asked to complete the following self-report questionnaires: the Rosenberg Self-Esteem Scale (Rosenberg, 1965; measures trait self-esteem), the State Self-Esteem Scale (Heatherton & Polivy, 1991), the Shape and Weight-Based Self-Esteem Inventory (Geller et al., 1997), and the Restraint Scale (Herman & Polivy, 1980). Participants also completed an experimenter-designed questionnaire that examined different dimensions of weight-related self-evaluation (i.e., the Multidimensional Weight-Related Self-Evaluation Inventory).

The Multidimensional Weight-Related Self-Evaluation Inventory measures both positive and negative weight-related self-evaluation. In addition, this scale includes three specific domains of self-esteem that may be influenced by weight-related self-evaluation (i.e., appearance, social, and performance, see the appendix).

RESULTS

Participant Characteristics

One-way analyses of variance (ANOVAs) were performed for body mass index (BMI) and age as a function of group (i.e., eating-disordered patients, restrained eaters, unrestrained eaters). A significant effect was revealed with respect to BMI, $F(2, 91) = 7.73, p < .01$. Patients were significantly heavier ($M = 27.47, SD = 8.50$) than restrained eaters ($M = 24.09, SD = 4.56$), who were significantly heavier than unrestrained eaters ($M = 21.71, SD = 3.66; t > 2, ps < .05$). In addition, a significant effect of age was obtained, $F(2, 96) = 37.54, p < .001$. Patients were significantly older ($M = 34.70, SD = 12.46$) than restrained ($M = 20.65, SD = 4.65$) and unrestrained eaters ($M = 19.97, SD = 2.24; t > 2, ps < .05$). As a result of these group differences, BMI and age were used as covariates in all remaining analyses.

State, Trait, and Weight-Based Self-Esteem

A one-way multivariate analysis of covariance (ANCOVA) was conducted on state self-esteem, trait self-esteem, and weight-based self-esteem as a function of group (i.e., eating-disordered patients, restrained eaters, unrestrained eaters). A significant effect was revealed, Hotellings $F(6, 164) = 11.98, p < .001$. Univariate analyses were then examined.

State and Trait Self-Esteem

A one-way ANCOVA was performed on state self-esteem scores as a function of group. The analysis revealed a significant effect, $F(2, 85) = 29.26, p < .001$, such that eating-disordered patients reported lower state self-esteem ($M = 47.34, SD = 2.87$) than did restrained eaters ($M = 70.47, SD = 5.28$) who reported lower state self-esteem than did unrestrained eaters ($M = 78.77, SD = 2.38; t > 2, ps < .05$).

A one-way ANCOVA was performed on trait self-esteem scores as a function of group. The analysis revealed a significant effect, $F(2, 85) = 20.52, p < .001$. Specifically, eating-disordered patients reported lower trait self-esteem ($M = 21.67, SD = 5.86$) than did both restrained eaters ($M = 30.81, SD = 5.28$) and unrestrained eaters ($M = 33.12, SD = 5.89; t > 2, ps < .05$).

Thus, as predicted by both clinical observation and previous research, patients with eating disorders exhibited lower trait and state self-esteem than those without an eating
disorder. Also, restrained eaters reported lower state self-esteem than unrestrained eaters (Dykens & Gerrard, 1986; McFarlane et al., 1998; Williams et al., 1993).

**Weight-Based Self-Esteem**

A one-way ANCOVA was performed on the angle of the weight and shape wedge obtained by the Weight and Shape-Based Self-Esteem Inventory as a function of group. A significant effect was revealed, \( F(2, 85) = 14.18, p < .001 \). Eating-disordered patients displayed a larger weight and shape angle \( (M = 100.12^\circ, SD = 65.46^\circ) \) than did restrained eaters \( (M = 48.81^\circ, SD = 32.17^\circ) \) who displayed a larger weight and shape angle than did unrestrained eaters \( (M = 24.65^\circ, SD = 36.56^\circ; ts > 2, ps < .05) \).

**Multidimensional Weight-Related Self-Evaluation Inventory**

Preliminary psychometric analyses indicated that the total scale and each subscale are internally consistent. Cronbach’s alphas ranged from .80 to .90. A one-way multivariate ANCOVA was performed on individual items of the Multidimensional Weight-Related Self-Evaluation Inventory as a function of group. A significant effect was revealed, Hotellings \( F(8, 82) = 5.58, p < .001 \). Univariate analyses were then examined (Table 1).

**Total Weight-Related Self-Evaluation**

A total weight-related self-evaluation score was computed by summing the responses to the entire scale. A one-way ANCOVA was performed on this score as a function of group. A significant effect was revealed, \( F(2, 74) = 29.78, p < .001 \). Eating-disordered patients \( (M = 43.00, SD = 10.01) \) and restrained eaters \( (M = 38.85, SD = 7.31) \) reported higher total weight-related self-evaluation than did unrestrained eaters \( (M = 23.79, SD = 10.14; ts > 2, ps < .05) \). Eating-disordered patients and restrained eaters did not differ with respect to total weight-related self-evaluation.

**Positive and Negative Weight-Related Self-Evaluation**

Two scores were created by summing the responses to Questions 1–4 (i.e., negative weight-related self-evaluation) and summing the responses to Questions 5–8 (i.e., positive weight-related self-evaluation). One-way ANCOVAs were performed on each score as a function of group. Significant effects were revealed for both negative, \( F(2, 89) = 31.02, p < .001 \), and positive weight-related self-evaluation, \( F(2, 89) = 20.69, p < .001 \). Specifically, eating-disordered patients reported greater negative weight-related self-evaluation \( (M = 21.15, SD = 5.77) \) than did restrained eaters \( (M = 18.27, SD = 4.19) \) who reported greater

<table>
<thead>
<tr>
<th>Weight-Related Self-Evaluation</th>
<th>Eating Disorder Patients ( (n = 34) )</th>
<th>Restrained Eaters ( (n = 31) )</th>
<th>Unrestrained Eaters ( (n = 34) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>43.00 (10.01)*</td>
<td>38.85 (7.31)*</td>
<td>23.79 (10.14)*</td>
</tr>
<tr>
<td>Negative</td>
<td>21.15 (5.77)*</td>
<td>18.27 (4.19)*</td>
<td>10.44 (4.91)*</td>
</tr>
<tr>
<td>Positive</td>
<td>21.85 (5.02)*</td>
<td>20.58 (3.46)*</td>
<td>13.35 (6.15)*</td>
</tr>
<tr>
<td>Appearance</td>
<td>11.91 (2.69)*</td>
<td>12.51 (1.29)*</td>
<td>7.91 (3.35)*</td>
</tr>
<tr>
<td>Social</td>
<td>9.62 (3.68)*</td>
<td>8.68 (3.04)*</td>
<td>5.09 (2.63)*</td>
</tr>
<tr>
<td>Performance</td>
<td>9.03 (3.35)*</td>
<td>6.06 (3.07)*</td>
<td>4.00 (2.46)*</td>
</tr>
</tbody>
</table>

Note: Means within the same row that do not share subscripts are significantly different \( (p < .05) \).
negative weight-related self-evaluation than did unrestrained eaters ($M = 10.44, SD = 4.91$; $t > 2, ps < .05$). In addition, eating-disordered patients ($M = 21.85, SD = 5.02$) and restrained eaters ($M = 20.58, SD = 3.46$) reported equal positive weight-related self-evaluation and both were higher than were unrestrained eaters ($M = 13.35, SD = 6.15$; $t > 2, ps < .05$). Eating-disordered patients and restrained eaters did not differ with respect to positive weight-related self-evaluation.

### Appearance, Social, and Performance Weight-Related Self-Evaluation

Three scores were computed by summing the responses to Questions 2 and 6 (i.e., appearance weight-related self-evaluation), summing the responses to Questions 3 and 7 (i.e., social weight-related self-evaluation), and summing the responses to Questions 4 and 8 (i.e., performance weight-related self-evaluation). One-way ANCOVAs were performed on each score as a function of group. Significant effects were revealed for appearance weight-related self-evaluation, $F(2, 89) = 25.65, p < .001$, social weight-related self-evaluation, $F(2, 89) = 14.95, p < .001$, and performance weight-related self-evaluation, $F(2, 89) = 19.95, p < .001$. Specifically, eating-disordered patients ($M = 11.91, SD = 2.69$) and restrained eaters ($M = 12.51, SD = 1.29$) reported greater appearance weight-related self-evaluation than did unrestrained eaters ($M = 7.91, SD = 3.33$; $t > 2, ps < .05$). Eating-disordered patients and restrained eaters did not differ with respect to appearance weight-related self-evaluation. In addition, eating-disordered patients ($M = 9.62, SD = 3.68$) and restrained eaters ($M = 8.68, SD = 3.04$) reported greater social weight-related self-evaluation than did unrestrained eaters ($M = 5.09, SD = 2.63$; $t > 2, ps < .05$). Similarly, eating-disordered patients and restrained eaters did not differ with respect to social weight-related self-evaluation. Finally, eating-disordered patients reported greater performance weight-related self-evaluation ($M = 9.03, SD = 3.35$) than did restrained eaters ($M = 6.06, SD = 3.07$), who reported greater performance weight-related self-evaluation than did unrestrained eaters ($M = 4.00, SD = 2.46$; $t > 2, ps < .05$).

### DISCUSSION

Weight- and shape-related self-evaluation seems to be a feature shared, to some extent, by both disordered and restrained eaters. Our results suggest that weight-based self-esteem may exist on a continuum; those with eating disorders at one end (i.e., weight and shape are very important to self-worth), unrestrained eaters at the other end (i.e., weight and shape are not important to self-worth), and restrained eaters falling somewhere in between, although they are more similar to those with eating disorders.

Those with eating disorders exhibited more negative weight-related self-evaluation than did restrained eaters, who in turn reported more negative weight-related self-evaluation than did unrestrained eaters. In contrast to negative weight-related self-evaluation, both disordered and restrained eaters exhibited equal amounts of positive weight-related self-evaluation.

Positive weight-related self-evaluation may play a role in the development of negative weight-related self-evaluation and in the transition from dieting to disordered eating. For example, it is common for a dieter to lose weight (temporarily) during the initial stages of dieting (Garner, Rockert, Olmsted, Johnson, & Coscina, 1985). Usually, weight loss is rewarded with positive comments from others and an increase in appearance self-esteem. A dieter may generalize the increase in self-esteem connected to her weight loss to other aspects of the self and experience an overall increase in self-esteem (i.e., positive weight-
related self-esteem). This process is likely to be very rewarding because higher self-esteem is associated with increases in confidence, achievement, and social interaction (Check & Melchior, 1990). It is during the initial weight loss that the dieter learns the connection between weight and self-esteem. Over time, many dieters regain their initial weight loss and some experience a net weight gain (Brownell & Jeffery, 1987; Cogan & Rothblum, 1993; Garner et al., 1985). When weight loss ceases or weight gain begins, the reinforced relationship between weight and self-evaluation remains. However, now, dissatisfaction with the body renders negative weight-related self-evaluation more relevant than positive weight-related self-evaluation for determining self-worth. The dissatisfaction with the body is extended to other areas of the self. In those who are vulnerable, eating disorder symptoms may begin. Although this requires further investigation, eating disorder prevention efforts may need to address the reinforcing qualities of positive weight-related self-evaluation.

Patients with eating disorders are differentiated from restrained eaters by the extent to which weight-related self-evaluation is generalized to other domains of self-esteem. Whereas restrained eaters extend weight-related self-evaluation only to the appearance and social domains, patients with eating disorders extend weight-related self-evaluation even further, indicating that their performance at work or school will also be affected by a weight gain or loss. The finding that individuals with eating disorders extend weight-related self-evaluation to the performance domain represents a more pathological feature unique to eating-disordered patients. Future research should attempt to identify other aspects of the self that are influenced by weight-related self-evaluation in restrained and disordered eating. This task could lead to interventions that target and eventually separate specific domains of self-esteem from weight and shape. This study supports the notion that weight-related self-evaluation is best measured as a multidimensional concept. Efforts should be directed at addressing this maladaptive method of inferring personal worth in the prevention and treatment of eating disorders.

APPENDIX A: THE MULTIDIMENSIONAL WEIGHT-RELATED SELF-EVALUATION INVENTORY

Participants were asked to rate their agreement with the following questions on a scale that ranged from 1 (strongly disagree) to 7 (strongly agree).

1. Stepping on the scale and seeing a weight gain negatively affects how I feel about myself in general.
2. Stepping on the scale and seeing a weight gain negatively affects how I feel about my appearance.
3. Stepping on the scale and seeing a weight gain negatively affects how I feel about my relationships with other people.
4. Stepping on the scale and seeing a weight gain negatively affects how I feel about my performance at school or work.
5. Stepping on the scale and seeing a weight loss positively affects how I feel about myself in general.
6. Stepping on the scale and seeing a weight loss positively affects how I feel about my appearance.
7. Stepping on the scale and seeing a weight loss positively affects how I feel about my relationships with other people.
8. Stepping on the scale and seeing a weight loss positively affects how I feel about my performance at school or work.
REFERENCES


