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Gender Differences in the Interrelationships Between Weight Dissatisfaction, Restraint, and Self-Esteem[1]

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This study investigated the interrelationships between weight, weight dissatisfaction, restraint, and self-esteem in a group of young adult women and men. The subjects were students at the Flinders University of South Australia, whose student body consists of primarily local students from English-speaking backgrounds. A tentative causal model proposed actual overweight to lead to body dissatisfaction, which causes the person to diet, with the resulting failures leading to loss of self-esteem. This model was confirmed by path analysis for women, but not for men. In line with self-concept theory, subjective overweight was more strongly related to self-esteem for women than for men, with restraint mediating this relationship.

A number of studies have documented a shift over recent years in societal preference to a thinner figure for women (e.g., Garner & Garfinkel, 1980; Silverstein, Peterson, & Perdue, 1986). This has resulted in women experiencing greater dissatisfaction with their body size and shape (Fallon & Rozin, 1985; Tiggemann & Pennington, 1990) and perceiving themselves as more overweight than men (see Wooley, Wooley, & Dryenforth, 1979, for a review). The perceived social consequences of being overweight and accompanying negative stereotyping are also stronger for women than for men (Stake & Lauer, 1987; Tiggemann & Rothblum, 1988). These weight concerns have become so common among women that Rodin, Silberstein, and Striegel-Moore (1985) describe them "a normative discontent."

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One response to this preoccupation with weight is to diet in order to reduce weight. There is a much greater incidence of dieting practices among women than men (Crawford & Worsley, 1988), for normal-weight as well as overweight women. The prevalence of dieting is so great that Polivy and Herman (1987) argue "normal" eating for women in Western countries is now characterized by dieting. Yet it is clear that reducing diets rarely work (Brownell, 1982)—if they did, people could cease to be on them. Furthermore, dieting may actually be counterproductive in at least two ways.

First, Restraint theory (Herman & Polivy, 1980) suggests that when such restricted eating practices are violated, chronic dieters will eat more. The degree of dietary restraint predicts differential eating in dieters and nondieters in response to a number of identified disinhibitors, e.g., a calorific preload, alcohol, anxiety, depression, or ego threat (Baucom & Aiken, 1981; Herman & Mack, 1975; Heatherton, Herman, & Polivy, 1991; Herman, Polivy, Lank, & Heatherton, 1987). Thus restricted eating practices may produce subsequent binging, and have been implicated in the eating disorders of anorexia nervosa and bulimia (Polivy & Herman, 1985; Striegel-Moore, Silberstein, & Rodin, 1986), which occur much more frequently among women. Second, failure to adhere to a dietary regime or to obtain and maintain a target weight may set up a cycle resulting in shame and feelings of loss of control, and resultant lower self-esteem. So the body dissatisfaction and consequent dieting of many women in our society has important and distressing behavioral and psychological concomitants.

How a woman perceives herself—that is her self-esteem—may influence her views of her own body, and also may be influenced by her body concern and dieting practices. Self-concept theories propose that dissatisfaction in a particular domain will have an impact on self-esteem to the extent that the domain is important to the person's self-definition. Given the centrality of body weight to women's attractiveness and the importance of attractiveness to women's self-image (Rodin et al., 1985), one would predict that a woman's body weight and her satisfaction with it would be important in her overall satisfaction with herself. In contrast, men's psychological well-being, and in particular self-esteem, could draw from many sources and thus any correlation with body dissatisfaction could be expected to be lower. Empirical evidence, however, is contradictory. A number of studies have demonstrated a stronger relationship between general concern or dissatisfaction with body weight and self-esteem for women than men (Lerner, Karabenick, & Stuart, 1973; Mintz & Betz, 1986; for older subjects, Tiggemann, 1992). Some have found no gender differences (McCaulay, Mintz, & Glenn, 1988; for younger subjects, Tiggemann, 1992), while

Silberstein, Striegel-Moore, Timko, and Rodin (1988) found self-esteem to be unrelated to body dissatisfaction in women, but to be related in men. Further studies are required to clarify the contribution of body-size dissatisfaction to self-esteem and to seek moderating variables.

An independent line of research shows that restraint is related to self-esteem, such that chronic dieters have lower self-esteem (Heatherton, Polivy, Pliner, & Herman, 1986; cited in Polivy, Heatherton, & Herman, 1988). Such a relationship might come about because women with low self-esteem are likely to perceive themselves as overweight and to diet. This is likely in a society that encourages women to solve problems of self-esteem in terms of their bodies. Alternately, the failures arising from dieting might produce lower self-esteem. Polivy et al. (1988) showed self-esteem to have a moderating effect on the eating behavior of restrained subjects. Only restrained subjects with low self-esteem ate more following a milk-shake preload. Restrained subjects with high self-esteem did not show this counterregulatory response. This result has been more recently replicated for distress as a disinhibitor (Heatherton et al., 1991).

The aim of the present study is to tie together these two lines of enquiry within the one study by predicting dietary restraint to mediate the relationship between body dissatisfaction and self-esteem. Furthermore, thus far, the work linking restraint and self-esteem has employed only female subjects. Thus the present study investigated the interrelationships between actual weight, body dissatisfaction, restraint, and self-esteem in a sample that included men as well as women. A tentative causal chain was proposed whereby actual overweight leads to body dissatisfaction, which causes the person to diet, with the resulting failures leading to loss of self-esteem.

METHOD

Subjects

The subjects were 332 undergraduate first year psychology students at the Flinders University of South Australia. Students at Flinders University come from a variety of socioeconomic status backgrounds, with most (78%) being local, 15.5% from the rest of Australia, and only 6.8% coming from overseas. English is the language spoken in the great majority (85%) of homes, followed by Cantonese (2.1%), Greek (1.6%), and Italian (1.4%).

In the present sample, there were 202 women and 130 men, with a mean age of 22.5 years (SD = 7.4, range = 17–56).

Measures

Questionnaires were completed by students in class time.

Weight Variables. Subjects were asked their height and weight. From these, Quetelet's Body Mass Index (BMI) was calculated to give an objective measure of degree of overweight. The BMI is considered a useful, height-independent index of weight (Garrow & Webster, 1985), and is calculated as the ratio of weight to height squared, where weight is measured in kilograms and height in meters.

Two measures of subjective weight were obtained. Perceived weight was measured on a 7-point Likert scale [from (1) *extremely underweight,* through (4) *normal weight,* to (7) *extremely overweight*]. Subjects then nominated their ideal weight. This was converted to a parametric measure of subjective overweight by subtracting subjects' ideal weight from their actual weight, which difference was then expressed as a percentage of actual weight. This measure is referred to as Subjective Overweight.

Restraint. In order to assess the extent of dieting practices, the Revised Restraint Scale of Herman and Polivy (1980) was included in the questionnaire. The scale consists of 10 items (e.g., "How often are you dieting?") that are rated on 4- or 5-point Likert scales. Scores range from 0 to 35 with high scores reflecting a high degree of restraint.

Factor analyses have shown that the total scale scores can be divided into two subscales: Concern with Dieting, which reflects the attention paid to eating and dieting, and Weight Fluctuation, reflecting the extent of previously experienced weight gain and loss (Blanchard & Frost, 1983; Rudeman, 1983). Although there has been some psychometric and conceptual criticism of the Restraint Scale, the scale remains the most useful available tool for examining dieter/nondieter differences (Heatherton, Herman, Polivy, King, & McGree, 1988). In the present sample, reliability was moderately high in the total Restraint Scale (Cronbach's alpha = .77), and for its two subscales (Concern with Dieting α = .68, Weight Fluctuation α = .69).

Self-Esteem. Self-esteem was measured by a 10-item index adapted by Bachman & O'Malley (1977) from Rosenberg's (1965) Self-esteem Scale. Respondents rate on 5-point Likert scales (from *almost always true* to *never true*) statements like "I feel that I have a number of good qualities." Scores range from 10 to 50, with high scores indicating high self-esteem. Reliability in the present sample was high, with α = .88.

RESULTS

Gender Differences in Weight Variables

Table I provides the means of all variables for women and men separately. For the women the mean BMI was 21.43 (SD = 4.46). This falls toward the lower end of the 20–25 range suggested by Garrow and Webster (1985) as normal for both genders. For the men, the mean BMI of 22.32 (SD = 2.96) was significantly larger than for the women, $t(316) = 1.99$, $p < .05$.

Although objectively the women carried less weight relative to their height than the men, their subjective impressions were different. In absolute terms, body dissatisfaction as measured by the absolute difference between actual and nominated ideal weight (as a percentage) was equal for men and for women, $t(302) < 1$, but women were much less satisfied in the direction of wishing to be thinner, $t(302) = 8.02$, $p < .001$. They perceived themselves as significantly more overweight ($M = 4.61$, i.e., "slightly overweight") than did the men ($M = 3.89$), $t(326) = 6.37$, $p < .001$. Of the women, the majority (56.1%) rated themselves as overweight to some degree, with 32.8% normal weight, and only 11.1% as underweight. For the

Table I. Means (and Standard Deviations in Parentheses) for All Variables for Women and Men

	Women	Men	
BMI (w/h^2)	21.43	22.32	[a]
	(4.46)	(2.96)	
Perceived weight	4.61	3.89	[b]
	(1.01)	(0.99)	
Subjective overweight (%)	6.22	−1.33	
	(7.09)	(9.25)	
Restraint	13.58	8.63	[b]
	(5.68)	(4.93)	
Dieting concern	8.01	5.44	[b]
	(3.37)	(2.68)	
Weight fluctuation	5.90	3.75	[b]
	(3.19)	(3.35)	
Self-esteem	41.57	41.87	
	(5.97)	(5.66)	

[a] $p < .05$.
[b] $p < .001$.

men, more equal groups rated themselves as underweight (37.0%) and overweight (26.9%). On average, women nominated an ideal weight 4.01 kg lighter than their actual weight and perceived themselves as 6% overweight, while men wished to be 1/3 kg heavier and perceived themselves as slightly (1%) underweight. Only 9.1% of women nominated an ideal weight that was larger than their actual weight, with 76.3% nominating an ideal smaller than their actual weight. The corresponding figures for men were 40.7% and 43.2% respectively.

Corresponding to their weight perceptions, women's restraint scores were higher than men's, both on the Concern with Dieting (Ms = 8.01, 5.44, $t(322) = 7.24$, $p < .001$) and Weight Fluctuation subscales (Ms = 5.90, 3.75, $t(282) = 5.33$, $p < .001$). No significant difference was found between the genders on self-esteem, $t(324) < 1$.

Relationship Between Actual and Subjective Overweight

As can be seen in Table II, the correlations between actual weight (as measured by the BMI) and subjective overweight are significant for both women, $r = .43$, $p < .001$, and men, $r = .69$, $p < .001$. Fisher z tests, however, showed that this correlation was significantly smaller for women than men, $z = 3.20$, $p < .001$. Thus it appears that perceptions of men's weight are more directly related to their actual weight than is the case for women.

Table II. Correlation Matrix for Weight (BMI), Subjective Overweight (SO), Restraint (RT), and Self-Esteem (SE), With Women Above the Diagonal, and Men Below

	Women (n = 202)[a]			
	BMI	SO	RT	SE
Men (n = 30)				
BMI		.43[c]	.16[b]	.02
SO	.69[c]		.53[c]	−.18[b]
RT	.40[c]	.36[c]		−.25[c]
SE	.23[c]	.22[b]	.10	

[a]There is some variation in n due to missing values.
[b]$p < .05$.
[c]$p < .01$.

Relationships Between Weight Variables and Restraint and Self-Esteem

Table II shows that subjective overweight was related to dieting practices as measured by the restraint score for both women and men. Not surprisingly, people who perceived themselves as overweight dieted more. Further analysis showed that this relationship held up for both the Concern with Dieting and Weight Fluctuation subscales.

There were marked gender differences, however, in the relationship between body weight variables and self-esteem. For the women, consistent with the positive valence attributed to smallness and light weight, the greater the degree of subjective overweight, the lower the self-esteem, $r = -.18, p < .05$. For men, on the other hand, both actual weight and subjective weight were positively correlated with self-esteem (r's = .23, .22, p's < .05). That is, the bigger the men were, and perceived themselves, the higher their self-esteem, again in accord with the gender social ideal of a larger man. It was the underweight men who had lower self-esteem. The differences between the genders were statistically significant for both actual weight ($z = 2.41, p < .01$) and subjective weight ($z = 3.37, p < .001$).

Relationship Between Restraint and Self-Esteem

Table II further shows that gender differences were also apparent in the relationship between restraint and self-esteem. For women, restraint was negatively related to self-esteem, $r = -.25, p < .01$, such that as dieting practices increased, self-esteem decreased. For men, however, there was no relationship between restraint and self-esteem. This difference between the genders was significant on the Dietary Concern subscale ($z = 3.17, p < .001$) as well as on the total Restraint Scale ($z = 3.03, p < .001$).

Path Analysis

An initial path analysis proposed a weak causal ordering of variables in the order BMI, subjective overweight, restraint, and self-esteem. It was thought that actual high weight would cause body dissatisfaction, which would lead the individual to diet, which would result in loss of self-esteem. Since it was shown above that gender interacted with some of the relationships, separate path analyses were carried out for women and men. A full saturated model was tested with direct and indirect pathways between all variables. The resulting path coefficients (standardized partial regression coefficients) are presented in Table III.

Table III. Beta Values for Pathways in Causal Model in Order Weight (BMI), Subjective Overweight (SO), Restraint (RT), and Self-Esteem (SE)

Pathway	Women	Men
RT–SE	$-.22^a$	−.08
SO–SE	−.10	.14
BMI–SE	.09	.17
SO–RT	$.56^b$	.10
BMI–RT	−.09	$.39^b$
BMI–SO	$.42^b$	$.69^b$

$^a p < .05$.
$^b p < .001$.

The significant pathways are shown in Fig. 1. It can be seen that for women the proposed causal connections seem supported, with the relationship between subjective overweight and self-esteem being almost entirely mediated by restraint. For men, however, quite a different pattern emerges. Actual weight produces body dissatisfaction, and also directly leads to dieting. There is, however, no significant impact of overweight on self-esteem.

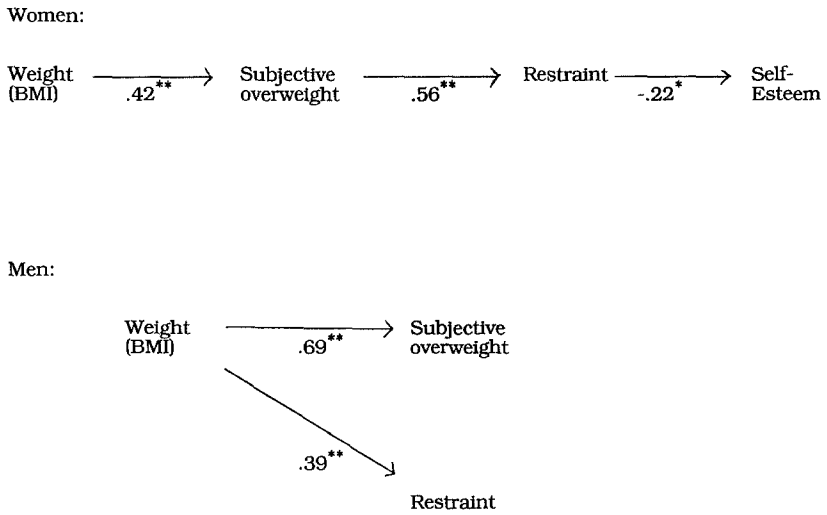

Fig. 1. Path diagrams for women and men showing significant pathways.

DISCUSSION

This study has investigated the interrelationship between weight, body dissatisfaction, dietary restraint, and self-esteem in a sample of young adults, both women and men. A number of gender differences emerged. While there was no difference between men and women in absolute weight dissatisfaction, confirming the result of Silberstein et al. (1988), there was a clear gender difference in the direction of dissatisfaction. Confirming the results of previous studies, women perceived themselves as more overweight, and wished to be thinner than their male counterparts. This was despite the fact that they were relatively less heavy as measured by the BMI. While a possible criticism might be the reliance on self-report measures of height and weight, a number of studies have established such measures to be quite reliable and valid (Brownell, 1982). Corresponding to the increased body dissatisfaction displayed by women, the relationship between this and actual weight was less for women than for men. This indicates that a larger number of women perceive themselves as overweight, irrespective of their actual weight. This is consistent with the notion there are societal pressures such as those provided by the media that encourage women to perceive their bodies as overweight, providing the basis for "normative discontent" (Rodin et al., 1985).

It is not surprising, then, given their greater perception of being overweight, that women diet more, with the attendant physical and psychological risks. Some feminists have argued that women's dieting serves a number of larger social purposes, and seems to rise with increasing power for women. An obsession with food and dieting can serve to deploy women's energies from other activities. Certainly, it also maintains a multimillion dollar diet industry (Wolf, 1990).

In this study, a negative relationship between subjective overweight and self-esteem was found for women, but not for men. This confirms the results of some previous studies and is consistent with self-concept theory's predictions that being overweight is more important and more central a concern for women than for men. Although there was a significant positive zero-order correlation between weight and self-esteem for men, when this was unpacked by the path analysis, no significant relationship remained. For men, being overweight did not have any direct impact on self-esteem.

The path analysis further showed that for women this relationship between subjective overweight and self-esteem was almost entirely mediated by restraint. There was no significant direct pathway between body dissatisfaction and self-esteem, only the indirect pathway via restraint. This finding ties together the two previously separate areas of research: namely

the relationship between body dissatisfaction and self-esteem, and the relationship between restraint and self-esteem.

It must be remembered, however, that as a correlational technique, path analysis cannot show the direction of causation, but can only assess the strength of causal connections which are assumed on the basis of prior evidence. So the observed correlation between weight dissatisfaction and self-esteem cannot unambiguously determine causality. While I have concluded that an overweight body may lower self-esteem, it is possible, for example, that women with low self-esteem may be predisposed to view their bodies as unsatisfactory, perhaps because they have a narrower range of tolerance for what is a satisfactory shape and weight. In our society this means they generally see themselves as overweight. Thus we may have a circular chain, whereby women with low self-esteem tend to see their bodies as unsatisfactory, which causes them to diet, the failure of which further lowers their low self-esteem. Women with high self-esteem tend not to see their bodies as unsatisfactory and so diet less and do not experience the same failures. Through both dietary and body variables, initial self-esteem seems to be reinforced. Tobin, Johnson, Steinberg, Staats, and Dennis (1991) have recently proposed such a cyclic process in the genesis of bulimia.

Only a longitudinal or prospective study could really attempt to disentangle causality. However, it would be very difficult to find an age before which bodies had not become a major preoccupation for young women. It is likely that the relationships are complex and reciprocal. Despite the unanswered questions, the present study's contribution is the investigation of interrelationships between several sets of variables within the one framework in both women and men. It was concluded that, in line with self-concept theory, the perception of being overweight is more important to a woman's self-esteem than it is to a man's, and that for women, this relationship is mediated by dietary restraint.

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