



Restrained Eating Among Vegetarians: Does a Vegetarian Eating Style Mask Concerns About Weight?

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The present study explored the relationships among dietary style (ranging from meat eating to veganism), cognitive restraint and feminist values. Two-hundred and twenty-seven participants with varying dietary styles completed the restraint subscale of the Three Factor Eating Questionnaire (TFEQ) and Attitudes Towards Feminism Scale (ATFS). Results indicated that among males, those who are high in cognitive restraint are more likely to exhibit a vegetarian dietary style than those low in cognitive restraint. Among women who are high in feminist values, those with high cognitive restraint are more likely to exhibit a vegetarian dietary style than those with low cognitive restraint, whereas for women low in feminist values those with high and low cognitive restraint are equally likely to exhibit vegetarian and non-vegetarian dietary styles. It is suggested that for some individuals, adoption of a vegetarian dietary style is an attempt to mask their dieting behaviour from others. © 1999 Academic Press

INTRODUCTION

The Western world appears to idealize the body image of the thin, fit individual, making the relentless pursuit of this ideal, through dieting and exercise, a priority for large numbers of individuals (Rodin, 1993). In fact, the prevalence of dieting among adolescent and young adult women is so high, it is considered by some to be normative behaviour for these groups (Polivy & Herman, 1987; Serdula *et al.*, 1993).

Despite the widespread social acceptability of dieting behaviour in North American society, there are some individuals and even some subgroups for whom this behaviour may be unacceptable. We would argue that in our society, two groups for whom dieting (for the purposes of weight loss) is not socially appropriate are women with strong feminist beliefs, and men (Rothblum, 1994; Way, 1995; Wolf, 1994). Although it is desirable for men to be slim, the ideal body shape is one which is lean and muscular, making exercise and physical activity the preferred method of achieving this goal (Davis *et al.*, 1991; Rodin, 1993). Serdula *et al.* (1993) found, in

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their sample of 11 467 adolescents, that females were almost three times as likely as males to report attempts at weight loss and were more than twice as likely to consider themselves "too fat". Among those respondents who reported attempting to lose weight, males were more likely to employ exercise and less likely to skip meals or use diet pills, than were females.

Research by Drenowski *et al.* (1995) and Davis *et al.* (1991) indicates that males are likely to be evenly split in their desire to lose weight vs. their desire to gain weight, whereas most females express a desire to lose weight. Certainly, the number of males who diet is substantially smaller than the number of females who diet; research indicates that women are approximately twice as likely as men to diet (Serdula *et al.*, 1993; Way, 1995). This suggests then, that dieting for the purposes of weight loss is inconsistent with social norms for males (Serdula *et al.*, 1993).

For women high in feminist values, dieting is inconsistent with their feminist ideologies. Feminist literature is replete with articles on how women are pressured to be thin and how this pressure is yet another form of the oppression of females. Up until the early twentieth century, big bellies and bountiful thighs were considered signs of sexual attractiveness and fertility; words such as curvaceous and voluptuous were used to describe women of this time period. However, with the acquisition of the vote, the feminine ideal started to decrease, a continuing trend which appears to be inversely related to the economic, political and occupational advances women have made (Wolf, 1994). In our society, desirability, success and power in women are all associated with a continually decreasing body size (Way, 1995). Gone are the days of the hour-glass figure; women of today feel pressure to model their bodies after their former prepubescent selves, a time when the female body is not yet fully developed. Wolf (1994) and other prominent feminist writers have argued that this childlike body image ideal is an attempt to keep women childlike; creatures who need to be cared for and protected by their fathers from the evils of this world (Rothblum, 1994; Way, 1995). Alternatively, Rodin (1993) has suggested that the acceptance of this body image ideal is a rejection of femininity; a step considered necessary by some women in order to obtain success in traditional male fields.

Feminist doctrine seeks to sever the association between thinness and success, and instead seeks to demonstrate that *all* women, regardless of body shape or weight, have the potential to be attractive and successful. For women with strong feminist beliefs, the pursuit of the thin ideal, through obvious weight loss behaviours such as dieting, would represent adherence to and maintenance of the very norms they have been fighting against.

Members of these two groups, males and feminist women, may be caught between conflicting social norms. On one hand they are told that many good things in life (i.e. desirability, success, power, etc.) come to those who are thin and fit, while on the other hand they are told that the dieting behaviour necessary to achieve this ideal is inappropriate for them. If being slim is important and they want to diet, they must find a method of dieting that allows them to mask their dieting behaviour from others. For such individuals, adoption of a vegetarian eating style may offer a method of restricting their food intake while allowing them to mask their weight concerns with the socially acceptable motives associated with vegetarianism. Thus, the adoption of a vegetarian eating style may function as a form of *social* impression management for these individuals. Since for women low in feminism, dieting is perfectly acceptable behaviour, there would be no need to adopt a vegetarian diet.

In recent years there has been an increase in the reported levels of vegetarianism and meat avoidance in the Western world, and it is now estimated that vegetarians (and vegans) comprise between 2 and 10% of the populations of Canada, the United Kingdom, and United States of America (Beardsworth & Keil, 1991; Maurer, 1995; Toronto Vegetarian Association, 1996). Recent research by Beardsworth and Keil (1991, 1993) and Santos and Booth (1996) have identified moral, health, gustatory and ecological factors as the principal motives reported by individuals underlying the conversion to and selection of a vegetarian diet. Interestingly, it appears that the groups showing the highest tendency to eat little or no meat in both Canada and the U.K. are the same demographic groups which exhibit the highest rates of weight concern and dieting behaviour. Furthermore, several case studies in the eating disorder literature note a link between eating disorders and vegetarian eating styles, in that eating disordered individuals are often found to be vegetarians (Alloway *et al.*, 1985; Bakan *et al.*, 1993; Shur *et al.*, 1988).

The purpose of the present study was to examine the relationships between concern with weight and dieting behaviour on the one hand, and vegetarianism on the other. For the reasons described above, it was hypothesized that among women with strong feminist beliefs, higher scores on measures of restrained eating would be related to higher levels of vegetarianism, while such a relationship would be less likely to exist among females low in feminism. Among men, a positive relation was expected between restraint and vegetarianism, unmoderated by feminism.

METHOD

Participants

Participants were recruited using a snowball sampling technique; a total of 227 individuals (158 females, 68 males and 1 gender not reported) between the ages of 14 and 45 participated in the study (20.3% ages 14–19, 50.7% ages 20–24, 12.8% ages 25–29, 7.5% ages 30–34, 6.2% ages 35 and above, and 2.6% not reported). Overall, 8.8% of the sample were currently in highschool, 6.2% had finished highschool, 49.8% were currently in college or university, 10.6% had completed some college or university, but were no longer attending, 18.5% had graduated from college or university, 4.4% were currently in graduate school and 1.8% did not specify what their highest level of education was. Participants were not compensated for their involvement in the study.

Measures

The restraint subscale of the Three Factor Eating Questionnaire

The restraint subscale of the Three Factor Eating Questionnaire (TFEQ) (Stunkard & Messick, 1985) consists of 21 items assessing the conscious control of eating behaviour for the purposes of weight control, with higher scores indicating greater dietary restraint. Items are answered in a TRUE/FALSE format or on 4-point scales with varying endpoints. Research has demonstrated the validity, internal consistency and test–retest reliability of this subscale (Stunkard & Messick, 1985). An example of an item from this subscale is: “I consciously hold back at meals in order not to gain weight”.

TABLE 1
Descriptions of the six different categories of vegetarianism as assessed by the eating style question^a

Number	Description
1	Eats foods from all food groups.
2	Does not eat red meat, but eats foods from all other food groups.
3	Does not eat any meat at all, but consumes fish, as well as foods from all other food groups.
4	Eats eggs & dairy products, as well as fruits & vegetables, grains & cereals (Lacto-ovo-vegetarian).
5	Eats dairy products, as well as fruits, vegetables, grains & cereals (Lactovegetarian).
6	Does not eat <i>any</i> products derived from animals (Vegan).

^a Note that, as you move through this typology in descending order, each category becomes more restrictive than the previous category.

Attitudes Toward Feminism Scale (ATFS)

The Attitudes Toward Feminism Scale (short form) (Smith *et al.*, 1975) consists of 10 items that examine beliefs in traditional sex-role norms and anti-feminine stereotypes, with higher scores indicating greater rejection of such beliefs and, therefore, greater endorsement of feminist values. Questions were answered on a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree). Prior research has demonstrated that the shortened version of the ATFS is valid and internally consistent (Singleton & Christiansen, 1977). An example of an item from this scale is: "A woman who refuses to give up her job to move with her husband would be to blame if the marriage broke up".

Eating style question

The eating style question was loosely based on Beardsworth and Keil's (1991) vegetarian typology and designed by the first two authors of the present study in order to quantify participants based on their "degrees of vegetarianism". Participants were asked to select their eating style from 1 of 6 categories ranging from 1 (non-vegetarian) to 6 (vegan) (see Table 1). Thus, higher scores were indicative of a greater "degree" of vegetarianism.

Activity level question

In order to assess level of activity on a weekly basis, participants were asked to estimate the total number of hours they spent engaging in physical activity (i.e. exercising, playing sports) in a typical week.

Procedure

Participants were led to believe that we were interested in examining the relationship between eating behaviour and exercise and were told that participation in the experiment would involve completing a variety of questionnaires designed to assess this relationship. They were then given a questionnaire package entitled "Eating Habits Questionnaire" and were asked to return the package to the experimenter upon

completion. Measures within each questionnaire package were arranged in the following order: demographic questions, the restraint subscale of the TFEQ, activity questions, eating style questions and the ATFS. Upon completion of the questionnaire package, participants were informed that the study was over and were thoroughly debriefed.

RESULTS

Overview

Of the 226 participants who reported their gender, 63 females and 42 males indicated that they were non-vegetarians, 42 females and seven males identified themselves as semi-vegetarians (i.e. consumption of red meat had ceased, but poultry and/or fish products were still consumed), and 51 females and 19 males reported being strictly vegetarian.

Preliminary *t*-tests carried out on restraint scores, feminism scores and activity-level scores indicated that these variables differed as a function of gender. Specifically, males ($M=6.04$, $SD=5.08$) had lower restraint scores than did females ($M=8.82$, $SD=5.92$), $t(144)=-3.35$; and ($M=37.69$, $SD=8.617$) showed less acceptance of feminist values than did females ($M=44.80$, $SD=5.38$), $t(88)=-6.25$. In addition, participants were asked to estimate the average number of hours spent engaging in physical activity on a weekly basis and males ($M=6.54$, $SD=4.32$) reported engaging in more physical activity than did females ($M=4.74$, $SD=3.97$), $t(113)=2.91$, all p 's <0.05 . Since we had specific hypotheses within each gender, and since our preliminary analyses yielded significant gender effects on several key variables, all analyses were carried out separately for men and women. However, for both men and women, our main analysis involved examining the moderating effects of feminism on the relationship between restrained eating and degree of vegetarianism. To do so, multiple regression analyses were conducted, using zero-centred independent and moderator variables, in which eating style score was regressed on: (1) restraint scores (independent variable); (2) feminism scores (moderator variable); and (3) their interaction (independent variable \times moderator variable) (see Baron & Kenney, 1986). Where appropriate, *post hoc* conditional slope analyses were used (see Aiken & West, 1991, for a detailed discussion) to examine significant interaction effects.

Analyses for Males

The multiple regression moderator analysis yielded significant effects for both restraint scores and feminism scores on eating style. First, restraint scores and eating style are positively related, $R^2=0.25$, $p<0.01$; $\beta=0.13$, $p<0.01$, so that as the conscious control of eating behaviour increases, the degree of vegetarianism in eating behaviour increases. Similarly, the relationship between feminism and eating style is positive, $R^2=0.25$, $p<0.01$; $\beta=0.05$, $p<0.05$, so that as acceptance of feminist values and ideals increases, so to does the degree of vegetarian eating behaviour.

As expected, the interaction term (restraint \times feminism) was not significant, $R^2=0.25$, $p<0.01$; $\beta=5.57$, *NS*, indicating that the relationship between restraint and

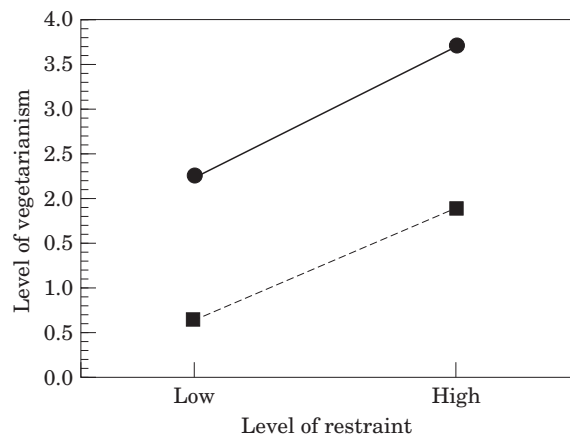


FIGURE 1. The relationship between level of restraint and level of vegetarianism as a function of level of feminism among males. (—■—), low feminism; (—●—), high feminism.

eating style did not differ as a function of feminism (see Fig. 1). That is, both low¹ and high feminist males demonstrate a significant positive relationship between dietary restraint and the degree of vegetarianism present in their eating behaviour.

Although not our primary analysis, a similar analysis where eating style scores were regressed on restraint scores, activity level scores and the interaction of restraint X activity-level scores, indicated that the relationship between restraint and eating style is not moderated by level of activity, $R^2=0.23$, $p<0.01$, $\beta=0.003$, *NS*. That is, the significant positive relationship between dietary restraint and degree of vegetarianism does not differ as a function of level of activity among men.

Analysis of Females

The regression of eating style on restraint scores, feminism scores and their interaction, yielded a significant moderator effect (i.e. a significant interaction beta), $R^2=0.10$, $p<0.01$; $\beta=0.01$, $p<0.05$, indicating that the relationship between restraint scores and eating style differs as a function of feminism scores. *Post hoc* conditional slope analyses² were then conducted to determine the exact nature of this relationship. In such analyses, the dependent variable (eating style) is regressed on the independent variable (restraint score) at 1 *SD* above and below the mean of the 2nd IV (level of feminism), producing two regression lines: (1) the relationship between restraint scores and eating style at 1 *SD* above the mean level of feminism (herein referred to as “high” feminism); and (2) the relationship between restraint scores and eating style at 1 *SD* below the mean level of feminism (herein referred to as “low” feminism).

As expected, among low feminists, the regression of eating style on restraint was non-significant, $R^2=0.10$, $p<0.01$, $\beta=0.00$, *NS*, indicating that restraint scores and

¹Low and high feminist males are defined as males 1 *SD* below and 1 *SD* above the mean on feminism, respectively.

²This analysis yields equivalent R^2 values at every stage of the analysis since we are merely shifting the distribution of scores 1 *SD* above or below the moderator variable.

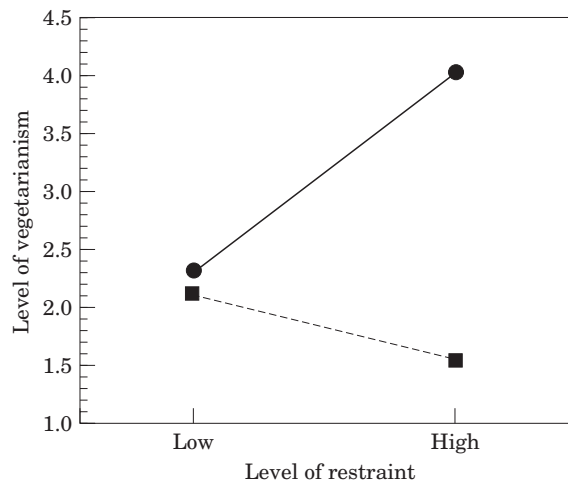


FIGURE 2. The relationship between level of restraint and level of vegetarianism as a function of level of feminism among females. (—■—), low feminism; (—●—), high feminism.

eating style are not linearly related for this group. As Fig. 2 indicates, low feminist women, regardless of restraint score, do not tend to engage in vegetarian eating styles. However, among women high in feminist values, restraint scores and eating style were found to be significantly, positively related, $R^2=0.10$, $p<0.01$, $\beta=0.05$, $p<0.05$, indicating that the degree of vegetarianism present in one's eating style differs as a function of restraint for this group. Fig. 2 illustrates, among high feminists, low levels of restraint are associated with less vegetarian eating styles, while high levels of restraint are associated with more vegetarian eating styles. Thus, among highly feminist women, those high in restraint are more likely to be consuming a vegetarian diet.

A regression analysis on the females' data in which degree of vegetarianism was regressed on restraint scores, activity level scores, feminism scores, age of participant and *all* possible interactions (for a total of 14 predictor terms entering the analysis), demonstrated that the interaction between restraint scores and feminism scores, $R^2=0.19$, $p<0.01$, $\beta=0.01$, $p=0.08$, approached significance. Given the number of variables that had the potential to account for significant amounts of variance, it is interesting to note that our hypothesized interaction was found to be approaching significance, suggesting that our previous results were not just an artifact of a large sample size with only a few variables entered into the regression equation.

In addition, eating style scores were regressed on restraint scores, activity level scores, and the interaction of restraint X activity level scores, to determine if activity level serves as a moderator of the relationship between restraint and eating style. This analysis indicated that among women, the relationship between restraint and eating style does not differ as a function of their level of weekly activity, $R^2=0.08$, $p<0.01$, $\beta=0.007$, *NS*. That is, a significant positive relationship was found between restraint scores and degree of vegetarianism *regardless* of how much time women spent on physical activities within a given week.

DISCUSSION

The primary purpose of this research was to examine the relationship between dietary restraint and degree of vegetarianism present in eating behaviour. To the best of our knowledge, prior research has not systematically investigated this association. In fact, the literature contains only a sprinkling of anecdotal evidence which suggests that these two variables may be related (Alloway *et al.*, 1985; Bakan *et al.*, 1993; Shur *et al.*, 1988; Tepper *et al.*, 1996). Our results however, should be interpreted with caution as they are based on a non-random sample, thereby limiting their generalizability. As predicted, a strong positive relationship was found between dietary restraint and degree of vegetarian eating behaviour for males. That is, as the conscious control of eating for the purpose of weight control increased, so too did the degree of vegetarianism present in their eating behaviour. Among women, the relationship between dietary restraint and degree of vegetarianism was found to be moderated by feminism. Specifically, among women with low levels of feminism, dietary restraint and vegetarianism were found to be unrelated. Restrained and unrestrained women in this group were found to have similar eating styles with both groups reporting that they consumed foods from all categories, including meat products. As expected, among highly feminist women, those who were low in restraint had a smaller degree of vegetarianism present in their eating styles, whereas those high in restraint exhibited a greater degree of vegetarian eating behaviour. Although it is plausible that a particular set of social values might increase the likelihood of both the adoption of a vegetarian diet and adherence to feminist principles, it should be noted that we are not demonstrating simply that highly feminist women are more likely to be vegetarian than those low in feminism. Rather, our data indicate that higher levels of vegetarianism are associated with higher levels of restraint—but only for women who are high in feminism. These results lend support to our premise that the relationship between dietary restraint and vegetarianism is evident only for those groups for whom dieting is socially unacceptable, namely women high in feminist values and men. Moreover, we would argue that these individuals do not endeavour to mask their weight concerns from themselves, but instead are attempting to hide these concerns from others. That is, these men and women are not trying to deceive themselves; they know that they are using their vegetarianism as a form of restrictive eating. They are however, trying to fool other people into thinking that they are not engaging in restrictive eating behaviour. It should be noted however, that we have *presumed* that dieting for the purposes of weight loss is socially unacceptable behaviour for these demographic groups; to the best of our knowledge, no research exists to support or refute this premise. Since participants were not compensated in any manner for participating in this research, the number of measures in the questionnaire package were limited. As such, questions aimed at appraising the acceptability of dieting for the purposes of weight loss were not asked. However, current research in our laboratory has included measures designed to address this issue directly.

The present research provides us with some interesting preliminary results regarding the relationship between restraint and vegetarianism, but does not provide us with a complete picture of this relationship. It is plausible that other factors such as the motivations underlying the selection of a vegetarian diet, personality variables such as level of liberalism, or sample characteristics such as athletes vs. non-athletes may moderate the relationship between restraint and vegetarianism. Moreover, while

the core principles underlying the feminist movement are probably the same as they were 30 years ago, it is likely that new goals and principles have been added as advances have been made in various domains. At the time the present study was conducted few measures of overall feminist attitudes were available and the measures encountered were all over 15 years old. Consequently, the measure of feminist beliefs used in the current study should be replaced with newer measures of feminist ideology as they become available. Finally, future research should attempt to increase the number of vegetarians sampled, particularly among young individuals, to ensure that relationships are not suppressed because of a lack of variability in the distribution of eating styles.

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