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THE STATE OF MIND OF VEGETARIANS: PSYCHOLOGICAL WELL-BEING OR DISTRESS?

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Two studies examined psychological well-being and world assumptions among vegetarian, semivegetarian, and omnivorous women. In Study 1, 308 women completed the scales for depression, self-esteem, weight satisfaction, appearance satisfaction, and symptoms of eating disorders. In Study 2, 226 women completed the World Assumption Scale. The results showed that vegetarian and semivegetarian women had a lower self-esteem and more symptoms of depression and eating disorders than omnivorous women. In addition, vegetarian women had a more negative view of the world than semivegetarian or omnivorous women did. The results suggest that although vegetarians may be healthier, they may be less happy than other individuals.

KEY WORDS: Vegetarianism, depression, self-esteem, assumptive worlds

Contemporary vegetarianism is a fascinating scientific phenomenon because it embodies strong medical, social and psychological aspects. In a similar way, empirical studies on vegetarianism can be classified into different categories that reflect different foci of investigation. The first line of research has addressed the beneficial and adverse effects of a vegetarian diet. The majority of these studies suggest that vegetarians are healthier than omnivores and that a vegetarian diet is a safe approach for the

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prevention and management of many diseases, such as obesity, diabetes, coronary heart diseases, and cancer (Key et al., 1999; Messina and Burke, 1997; Segasothy and Phillips, 1999; Willett, 1999).

The second category of studies has analyzed vegetarians' self-reports on their dietary motives and the implications of the diet for their personal well-being (Amato and Partridge, 1989; Beardsworth and Keil, 1992, 1993; Jabs et al., 1998; Kenyon and Barker, 1998; Santos and Booth, 1996; Watson and Clark, 1984; Willett, 1999; Worsley and Skrzypiec, 1998). These studies delineate most vegetarians as socially conscious individuals who, after their dietary change, have experienced improvements in physical health, psychological functioning, and quality of life.

However, the third line of studies, which has addressed the psychological characteristics of vegetarians, portrays a different picture of vegetarians. These studies show that vegetarian women are intensely preoccupied with being slim (Martins and Pliner, 1999; Worsley and Skrzypiec, 1997) and that they display clear symptoms of eating disorders (Lindeman et al., 2000). Moreover, vegetarian women have been shown to suffer from depression and anxiety (Cooper et al., 1985) and from maturity fears, ineffectiveness, and interpersonal distrust (Lindeman et al., 2000), which have been identified as fundamental aspects of the psychopathology of anorexia nervosa (Garner et al., 1983).

These findings raise a question that so far has not been addressed but will be examined in this study: Do vegetarians and omnivorous individuals differ in terms of psychological well-being? Psychological well-being is a broad category of phenomena that may be conceptualized both as a global judgment of life satisfaction or as separate affective states (e.g., depression) and domain satisfactions (e.g., self-esteem, body-image) (DeNeve and Cooper, 1998; Diener, 1984; Diener et al., 1999). In addition, although health, wealth, and other such conditions are not necessary parts of well-being, they are typically seen as potential influences on well-being. And finally, because it is a question of subjective feelings, psychological well-being is here equated with happiness (for similar notions, see DeNeve and Cooper, 1998; Diener et al., 1999).

Given that vegetarianism may be intertwined with pathological eating, symptoms of eating disorders and those indices of well-being that have been shown to differentiate healthy individuals from individuals with an increased risk for eating disorders, (i.e., depression, self-esteem, and body image) were included in the study (Halimi, 1995; Polivy and Herman, 1987; Szumkler et al., 1995). Consistent with the literature on vegetarians' psychological characteristics, it was hypothesized that vegetarians have lower well-being than omnivores.

STUDY 1

Participants

The participants were recruited from eight Summer University courses in the capital city of Finland, Helsinki. The questionnaire was delivered and filled in during their lecture time. Out of 370 questionnaires, 356 were returned. Because there were only a few semivegetarian ($N = 5$) and vegetarian ($N = 1$) men in the sample, only women were included. The final sample thus consisted of 308 women. Of them, 2.3% were in high school, 7.1% had finished school and were seeking admission for study, 63% were full-time university students from over 25 fields of study, 25.6% were working, and 1.3% were neither working or studying. The age of the participants varied from 13 to 74 years of age, with a mean age of 29 ($SD = 10.81$). The participants represented various eating status categories in the following way: 197 of the women were omnivorous, 69 avoided red meat or ate only fish and vegetarian dishes, and 42 were vegetarians. As in previous studies (Amato and Partridge, 1989; Martins and Pliner, 1999; Worsley and Skrzypiec, 1998), those who ate fish and avoided red meat were labeled semivegetarians.

Measures

Depression was measured with the short form of the Center for Epidemiologic Studies Depression Scale (Cronbach's $\alpha = .85$), which has been shown to be a valid and reliable measure both

among younger and older individuals (Andresen and Malmgren, 1994; Shrout and Yager, 1989). The subjects were asked to rate 10 items in terms of the frequency with which each mood or symptom of depression (e.g., restless sleep or feelings of loneliness) occurred during the past week (0 = none of the time, 3 = most of the time). The possible range of scores is thus 0–30, with higher scores representing greater degrees of depressed moods.

Self-esteem was assessed by Rosenberg's (1979) Self-Esteem Scale (Cronbach's $\alpha = .85$). The subjects rated the ten items (e.g., "On the whole, I am satisfied with myself") on a five-point scale (1 = strongly disagree, 5 = strongly agree). The scores were averaged and the range of scores was thus 1–5, the highest scores indicating high self-esteem. In previous studies, Rosenberg Self-Esteem Scale has been shown to be a reliable and valid measure of global self-esteem (for a review, Gray-Little et al., 1997; Robins et al., 2001).

Appearance dissatisfaction and weight dissatisfaction were measured by Visual Analogue Scales (VAS) (Thompson, 1996). These two scales are 10 cm horizontal lines with the endpoints 0 (no appearance [weight] dissatisfaction) and 100 (extreme appearance [weight] dissatisfaction). The subjects were asked to mark with a slash their level of dissatisfaction on the two lines. The distance from 0, measured from the left in millimeters, indicated the level of dissatisfaction. The scale can be used as a quick and reliable measure of weight and size and overall appearance dissatisfaction (Thompson, 1996).

Symptoms of eating disorders were measured by the short form of the Eating Attitudes Test (EAT; Garner and Garfinkel, 1979; Garner et al., 1982). EAT (Cronbach's $\alpha = .80$) includes 26 items (e.g., "I am terrified about being overweight") which the participants answer on a six-point scale (1 = never, 6 = always). Subjects' raw scores were rescored along the lines recommended by Garner and Garfinkel (1979), that is scores 1–3 were rescored as 0, 4 as 1, 5 as 2, and 6 as 3. A cutoff point of 20 can be used to screen individuals with a high risk for eating disorders. The reliability and validity of EAT are well established (e.g., Garner and Garfinkel, 1979; Garner et al., 1982).

Results and Discussion

To analyze psychological well-being among the participants, analysis of variance (ANOVA) was conducted with the dietary practice (omnivores vs. semivegetarians vs. vegetarians) as between-subjects variable and depression, self-esteem, satisfaction with weight and appearance, and symptoms of eating disorders as dependent variables. Significant differences among the three dietary groups were found on all variables except satisfaction with weight (Table I). Specific comparisons showed that semivegetarians were more satisfied with their appearance than omnivores and vegetarians, $t(303) = -3.06, p < .002$. In addition, semivegetarians and vegetarians had lower self-esteem, $t(306) = -3.09, p < .002$, and more symptoms of depression, $t(306) = 3.58, p < .001$, than omnivores. Semivegetarians and vegetarians also scored higher on EAT than omnivores, $t(306) = 3.09, p < .002$, indicating that they had more symptoms of eating disorders than omnivores. With the exception of body-image, the results thus supported the hypothesis in that both vegetarians and semivegetarians had a lower well-being than omnivores.

Besides daily problems and physical health, one major factor related to everyday well-being is one's assumptions of the world (Feist et al., 1995; Janoff-Bulman, 1989; Janoff-Bulman and

TABLE I
Means and standard deviations (in parentheses) on well-being among the three dietary groups

	Omnivores	Semivegetarians	Vegetarians	F(2,306)
Dissatisfaction with weight	38.73 (30.22)	41.32 (31.93)	33.85 (30.82)	0.77
Dissatisfaction with appearance	32.76 (20.90)	41.57 (24.55)	30.90 (21.59)	4.73**
Self-esteem	3.85 (.64)	3.52 (.86)	3.62 (.79)	6.08**
Depression	9.65 (5.75)	12.16 (6.47)	12.56 (6.18)	7.03***
Symptoms of eating disorders	9.60 (7.32)	11.70 (9.91)	13.86 (8.98)	5.40**

*** $p < .001$. ** $p < .01$.

Note: Higher means indicate stronger dissatisfaction and depression, higher self-esteem, and more eating disorder symptoms.

Frieze, 1983). World assumptions consist of implicit assumptions about ourselves and about the benevolence and meaningfulness of the world. Longitudinal studies have shown that these assumptions are both a cause and an effect of well-being (Feist et al., 1995). For example, negative views of the world color interpretations of experiences as negative and thus lower well-being, whereas low well-being makes us perceive the world in negative terms. Because of the strong relation between world assumptions and well-being, and because of the increasing evidence of vegetarians' low well-being, the second study was designed to test the assumption that vegetarians have a more negative worldview than omnivores.

STUDY 2

Participants

The participants were recruited from four Open University courses at the University of Helsinki and from three senior high schools in the Helsinki area. Out of 400 questionnaires, 315 were returned. Again, there were only a few semivegetarian ($N = 4$) and vegetarian ($N = 2$) men in the sample, thus only women were included in the study. The sample consisted of 226 women. Of them, 26% were full-time university students from over 15 fields of study, 22% were working, and 52% were in high school. The age of the participants varied from 16 to 54, with a mean age of 22.3 ($SD = 8.68$). Of the participants, 148 were omnivorous, 60 were semivegetarians, and 17 were vegetarians.

Measures

To measure the participants' view of the world, the World Assumption Scale (WAS; Janoff-Bulman, 1989) was used. The scale consists of eight categories of assumptions of self and the world: benevolence of people, benevolence of the world, luck, justice, randomness, controllability, self-controllability, and self-worth. An example item from the Luck scale is "I am luckier than other people." Each subscale includes four items on which the

participants indicated their agreement using a five-point scale (1 = strongly disagree, 5 = strongly agree). The scores were averaged and the possible range was thus 1–5. The higher the score the higher was the respondent's belief in benevolence of people, benevolence of the world, luck, justice, randomness, controllability, self-controllability, and self-worth, respectively. Previous studies have shown that the WAS has a consistent factor structure and a modest reliability (Janoff-Bulman, 1989). In this study, the reliabilities (Cronbach's α) of the scales ranged from .79 to .85.

Results

World assumptions among omnivores, semivegetarians and vegetarians were analyzed with a one-way ANOVA (Table II). Significant differences between the three dietary groups were found on assumptions about the controllability of events, the benevolence of world, the benevolence of people, justice, and self-worth.

Specific comparisons showed that omnivores and semivegetarians did not differ in their world assumptions (all p 's > .05). However, in comparison to vegetarians, omnivores and semivegetarians saw the world as more controllable, $t(221) = 2.94$,

TABLE II
Means and standard deviations (in parentheses) on assumptions of world among the three dietary groups

	Omnivores	Semivegetarians	Vegetarians	F(2,221)
Controllability	2.53 (.62)	2.68 (.49)	2.17 (.55)	5.98**
Benevolence of world	2.98 (.79)	2.94 (.85)	2.40 (.74)	3.98*
Benevolence of people	3.82 (.61)	3.66 (.63)	3.26 (.51)	7.17***
Justice	2.03 (.57)	2.20 (.62)	1.75 (.39)	4.36*
Self-worth	3.51 (.69)	3.34 (.72)	3.06 (.82)	3.53*
Luck	3.40 (.83)	3.46 (.79)	2.99 (.68)	2.34
Randomness	2.87 (.67)	2.83 (.77)	2.69 (.72)	0.54
Self-control	3.08 (.69)	3.22 (.78)	2.79 (.72)	2.42

*** $p < .001$. ** $p < .01$. * $p < .05$.

Note: Higher means in the subscales indicate a stronger assumption.

$p < .01$, and had more positive assumptions about the benevolence of the world, $t(221) = 2.72$, $p < .01$, the benevolence of people, $t(221) = 3.09$, $p < .01$, justice, $t(221) = 2.46$, $p < .02$, and self-worth, $t(221) = 1.99$, $p < .05$. Other differences were not significant.

GENERAL DISCUSSION

The results of the two studies indicated that vegetarian and semi-vegetarian women had a lower self-esteem and more symptoms of depression and eating disorders than omnivorous women. In addition, vegetarian women regarded both people and the impersonal world as basically more malevolent and they saw outcomes as less distributed in accordance with a principle of justice than semivegetarian or omnivorous women. Nonetheless, vegetarians did not differ from others in body-image or in those world assumptions that focus on luck or randomness.

The results extend previous findings that vegetarian women display enhanced emotional distress and symptoms of eating disorders (Cooper et al., 1985; Lindeman et al., 2000; Worsley and Skrzypiec, 1997, 1998). Furthermore, if vegetarians typically experience increased psychological well-being after converting to vegetarianism, as many vegetarians have reported, it is possible that the differences between omnivores and future vegetarians' happiness is even stronger before individuals adopt vegetarianism. With longitudinal designs it would be possible to ascertain whether vegetarians are individuals who have indeed been able to decrease their psychological distress, at least to some extent, by adopting the current social ideals of environmental welfare, animal liberation, and social justice, and by ending up with a life style that many nutritionists and medical scientists regard as satisfactory.

The present studies do not answer the question about the causal relations between low psychological well-being and negative views of the world on the one hand, and adopting a vegetarian diet on the other. However, it is plausible to assume

that vegetarianism has not decreased well-being but that individuals who suffer from low well-being are more apt to adopt a vegetarian diet. If this is the case, the question arises why might low well-being generate an aspiration to convert to vegetarianism? One hypothesis that might direct future studies is based on terror management theory (Pyszczynski et al., 1997; Solomon et al., 1991): Vegetarianism may serve as an ideology with which one imbues the world with meaning, order, stability, and permanence, and by so doing, one buffers distress and anxiety. This hypothesis would also be in line with the suggestions of Beardsworth and Keil (1992) and Lawrence (1993) and with empirical findings (Lindeman and Stark, 1999) that vegetarianism is an ideology whose adoption is at root an exercise in the management of anxiety, the negotiation of identity, and the reestablishing of peace of mind.

It is important to note that our findings were obtained with a convenience sample consisting of Finnish women only. At least in Western societies, women are more concerned about food and eating than men (Chaiken and Pliner, 1987; Pliner and Chaiken, 1990). In addition, Finnish people are very homogeneous in religion (mostly Lutheran) and race, and therefore it is possible that different results would be obtained for other samples. Moreover, the conclusion that vegetarians have a lower well-being is inaccurate in that well-being is a broader category of affects and domain satisfactions (Diener et al., 1999) than mere depressive tendencies, self-esteem, and body-image. Finally, vegetarianism is pursued for a variety of reasons and it may be that low psychological well-being is not typical of all vegetarian subgroups. Therefore, future studies should validate the results by employing a more differentiated set of well-being measures and with larger and more heterogeneous samples of participants.

Existing literature on the psychological well-being of vegetarians is limited, and it is worth exploring this issue further. Thus far, however, the available evidence suggests that although vegetarians may have a healthier lifestyle and a lower risk for some disease, they seem to live a less happy life than other individuals do.

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