

LOCUS OF CONTROL AND ATTITUDE TOWARD EATING IN A FEMALE COLLEGE POPULATION

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In this study we investigated the relationship between locus of control and attitude to food intake. One hundred and one females (*M* age = 21.3) were administered the I-E Scale, Eating Attitudes Test, and Goldfarb Fear of Fat Scale. Results indicated that locus of control was unable to predict attitudes towards eating and fear of becoming overweight. The hypothesis that locus of control would be related to attitude towards food intake was not supported. Possible explanations, areas of future research, and implications in the etiology of anorexia nervosa are discussed.

Keywords: locus of control, attitude toward eating, female college students.

Anorexia nervosa is psychosomatic disorder frequently described on the basis of both patterns of food intake as well as a set of psychological characteristics. Often the psychological characteristics precede the onset of dieting and have been described by Brush (1973) as including a distorted body image, inaccurate perception of internal states, and a pronounced sense of ineffectiveness. Central to the development and maintenance of the disorder are attempts by the anorexic to obtain control over her internal and external world. However empirical research on ineffectiveness in anorexics has produced somewhat contradictory results and has been exclusively performed on anorexics once they have developed an established anorexic pattern.

Various clinical descriptions of anorexic families indicate that the anorexic is overprotected with parental overinvolvement to the extent that she has difficulty developing a clearly defined sense of self (Bruch, 1973; Minuchin, Rosman, Baker, & Leiberman, 1978). The pre-onset anorexic learns that, in order to gain acceptance, she must be conforming, perfectionistic, and give an external appearance of well-being (Bruch, 1973, 1981; Palazoli, 1974). Bruch (1973) argues that the anorexic is controlled by persons in her environment and the disorder develops as an attempt to gain a sense of self-identity by establishing complete mastery over her body. The above pattern of family interaction is consistent with the development of a child having a high external locus of control.

In contrast to the above prediction, young anorexics actually had a higher internal locus of control when compared to either age related peers (Hood, Moore, & Garner, 1982) or contrasted patient groups (Strober, 1982). However, relative degree of externality in comparison to other anorexics was able to successfully predict

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severity of symptoms, prognosis, and aspects of their personalities. Specifically, Hood et al. (1982) found that among their sample of young anorexics (M age = 16) relatively high externals suffered from greater weight fluctuation, loss of control, and feelings of guilt. Older patients (M age = 21) could not be differentiated on internality-externality from the norms. Likewise, Strober (1982) found that young patients (M age = 15) who scored as relatively more external were rated as expressing greater denial of their illness, more intense fear of becoming fat, greater likelihood of substance abuse, greater overestimation of body size, and less rapid weight gain during treatment. The overall higher levels of internality found among young anorexics might be explained by their feeling a sense of mastery through the effective restriction of food intake. In contrast to the scores for young anorexics, Harding and Lachenmeyer (1986) found that a sample of older anorexics (M age = 25) were significantly more external than controls. They speculated that the difference between the older and younger samples may be that, during the process of having had to deal with a greater number of life challenges, the older group discovered more areas of ineffectiveness. Thus, older anorexics may be more acutely aware of the limitations imposed on them as a result of their symptoms.

The above clinical and research findings suggest that externality may be initially increased in the pre-onset anorexic due to a family which stresses excessive conformity, overprotectiveness, perfectionism, and external appearances. The development of symptoms may produce a temporary sense of control, which results in a high sense of effectiveness. Young anorexics with relatively high levels of externality might experience less ability to cope, which is exacerbated by the presence of more serious symptoms. Then, as age increases, it could be that anorexics begin to feel more out of control due to a realization of the ineffectiveness of their symptoms, especially regarding their ability to live independently from their parents. Therefore, it may be possible to conceptualize anorexia nervosa as a strategy to compensate for a loss of personal control by developing excessive control over food intake even though the symptoms are only temporarily effective in promoting a sense of self-control.

In the present study we investigated the relationship between internality-externality in a non-patient group. Specifically, we hypothesized that persons showing increasing levels of concern with food intake would feel more out of control, which would be reflected in greater scores on externality.

METHOD

PARTICIPANTS AND PROCEDURE

Participants were 101 college students (M age = 21.3) from the Warrnambool Institute in Victoria, Australia. Testing occurred in classes varying in size between 14 and 38. Participants were administered the Eating Attitudes Test (Garner, Olmstead, Bohr, & Garfinkel, 1982), Goldfarb Fear of Fat Scale (Goldfarb, Dykens, & Gerrard, 1985), Rotter's I-E Scale (Rotter, 1966), and a questionnaire requesting demographic data on age, socioeconomic status, and current/past weight.

The Eating Attitudes Test (Garner et al., 1982) is a self-report inventory that has been found to successfully differentiate patients with anorexia from normal and obese

participants (Garner & Garfinkel, 1979) and to accurately identify disturbances related to eating in non-clinical populations (Button & Whitehouse, 1981; Garner & Garfinkel, 1979). High EAT scores were related to the extent to which they overestimated body size (Garner & Garfinkel, 1980b) Wells, Coope, Gabb, and Pears (1985) have argued that the EAT may not directly measure pathology but rather concern with food intake. This is indirectly supported by Garner and Garfinkel (1979) and Button and Whitehouse (1981) who found that only 6% and 14% persons scoring above the critical cut-off score of 20 were actually diagnosed as anorexic. In addition, a high proportion of normal dieters scored above the critical cut-off. However, persons scoring above the critical cut-off can be considered to be expressing sub-clinical levels of concern with eating (Button & Whitehouse, 1981) and would be at a higher risk of developing anorexia nervosa.

The Goldfarb Fear of Fat Scale (Goldfarb et al., 1985) is a 10-item self-report inventory which has been used to successfully distinguish between females who were bulimics, repeat dieters, and non-dieters (Goldfarb et al., 1985). Goldfarb et al. (1985) suggested that whereas the EAT attempts to assess the behavioral symptoms related to anorexia and/or bulimia, the GFFS assesses the underlying motivation underlying these disorders. The I-E Scale (Rotter, 1966) is a 29-item forced choice questionnaire in which respondents choose between an internal and an external alternative for various events. The questions sample a variety of areas and the total score yields a measure of generalized internal/external expectancy. The scale has been found to predict weight loss for obese patients during treatment (Cohen & Alpert, 1978), rate of completion in weight reduction programs (Balch & Ross, 1975), and extent of body image disturbance among anorexics (Garner, Garfinkel, Stancer, & Moldofsky, 1976).

RESULTS

As can be seen from Table 1, no significant correlations were found between I-E and EAT scores ($r = -.00, p > .05$) or between scores on the I-E and GFFS ($r = -.01, p > .05$). As would be expected, there was a strong positive correlation between EAT and GFFS ($r = .68, p < .001$). In addition, age correlated significantly ($r = -.26, p < .01$) with GFFS scores but not with scores on the EAT ($r = -.14, p > .05$). Age had a low but significant correlation ($r = .25, p < .01$) with I-E scores.

DISCUSSION

The failure to find a relationship between I-E and attitude towards eating and I-E and concern with body size is difficult to explain given the frequent descriptions of ineffectiveness among pre-onset anorexics. One possible explanation concerns the emphasis on external appearance, structural enmeshment, compliance, conflict detouring, and achievement that appear to characterize the families of pre-anorexic individuals. This may distort not only perceptions such as body size but also perception of relative control. The I-E Scale is likely to be quite sensitive to such distortions since it is influenced by social desirability (Rotter, 1966).

TABLE 1: INTERCORRELATIONS OF PREDICTOR AND DEPENDENT VARIABLES (N = 102)

Variable	2	3	4	5
1. Locus of control	.00	.10	.25*	-.10
2. EAT score	—	.68**	-.14	.14
3. GFFS score		—	-.26*	.05
4. Age			—	.00
5. Socioeconomic status				—

*p .01
**p .001

Alternatively, a sense of personal ineffectiveness may not be present in pre-onset anorexics. At-risk factors other than personal ineffectiveness may determine whether or not the fully developed anorexic syndrome will develop. The differences in locus of control between anorexics and normals noted in previous studies (Harding & Lachenmeyer, 1986; Hood, Moore, & Garner, 1982; Strober, 1982), may represent a byproduct of the anorexic syndrome itself. Possible factors that could more effectively account for the development of this disorder include obsessive compulsive traits (Bruch, 1973), an anorexic subculture (Swartz, 1985), dieting to control obesity (Crisp & Stonehill, 1971), or hyper-suggestibility in the pre-onset condition (Schumaker, Groth-Marnat, & Harris, 1987).

Certain psychometric and methodological factors may have affected the present findings. The I-E scale is a generalized indicator locus of control and it could be speculated that a more specific instrument (health or weight locus of control) might have produced somewhat different results. Furthermore, since the EAT and GFFS measure anorexic-like thinking, it was assumed that persons scoring high on these measures would also be at a higher risk of developing the disorder. No researchers have actually followed high scorers to determine the proportion or the personality characteristics of those who later developed anorexia nervosa. Future researchers might use additional instruments to measure degree of control and/or use a longitudinal design to determine the characteristics of persons who later develop anorexia.

REFERENCES

- Balch, P., & Ross, A. W. (1975). Predicting success in weight reduction as a function of locus of control: A unidimensional and multidimensional approach. *Journal of Consulting and Clinical Psychology*, **43**, 119.
- Bruch, H. (1973). *Eating disorders: Obesity, anorexia nervosa, and the person within*. New York: Basic Books.
- Bruch, H. (1981). Developmental considerations of anorexia nervosa. *Journal of Psychiatry*, **26**, 212-217.
- Button, E. J., & Whitehouse, A. (1981). Subclinical anorexia. *Psychological Medicine*, **11**, 509-516.
- Cohen, N. L., & Alpert, M. (1978). Locus of control as a predictor of outcome in treatment of obesity. *Psychological Reports*, **42**, 805-806.

- Crisp, A. H., & Stonehill, E. (1971). Relationship between aspects of nutritional disturbance and menstrual activity in primary anorexia nervosa. *British Medical Journal*, **38**, 327-336.
- Garner, D. M., & Garfinkel, P. E. (1979). The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, **9**, 273-279.
- Garner, D. M., & Garfinkel, P. E. (1980a). Socio-cultural factors in the development of anorexia nervosa. *Psychological Medicine*, **10**, 647-656.
- Garner, D. M., & Garfinkel, P. E. (1980b). Body image in anorexia nervosa: Measurement, theory, and clinical implications. *International Journal of Psychiatry in Medicine*, **11**, 263-284.
- Garner, D. M., Garfinkel, P. E., Stancer, H. C., & Moldofsky, H. (1976). Body image disturbances in anorexia nervosa and obesity. *Psychosomatic Medicine*, **38**, 327-336.
- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, **19**, 839-846.
- Goldfarb, L. A., Dykens, E. M., & Gerrard, M. (1985). The Goldfarb Fear of Fat Scale. *Journal of Personality Assessment*, **49**, 329-333.
- Harding, T. P., & Lachenmeyer, J. R. (1986). Family interaction patterns and locus of control as predictors of the presence and severity of anorexia nervosa. *Journal of Clinical Psychology*, **42**, 440-448.
- Hood, J., Moore, T. E., & Garner, D. M. (1982). Locus of control as a measure of ineffectiveness in anorexia nervosa. *Journal of Consulting and Clinical Psychology*, **42**, 440-448.
- Minuchin, S., Rosman, B. L., Baker, L., & Leiberman, H. (1978). *Psychosomatic families: Anorexia nervosa in context*. Cambridge, MA: Harvard University Press.
- Palazoli, M. S. (1974). *Self-starvation*. New York: Aronson.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, **80**(1, Whole No. 609).
- Schumaker, J., Groth-Marnat, G., & Harris, T. (1981). The prevention of anorexia nervosa in an adolescent female population. In J. L. Sheppard (Ed.), *Advances in behavioral medicine* (Vol. 4, pp. 33-43). Lidcombe, NSW: Cumberland College of Health Sciences.
- Strober, M. (1982). Locus of control, psychopathology, and weight gain in juvenile anorexia nervosa. *Journal of Abnormal Child Psychology*, **10**, 97-106.
- Swartz, L. (1985). Anorexia nervosa as a culture-bound syndrome. *Social Science and Medicine*, **20**, 725-730.
- Wells, J. F., Coope, P. A., Gabb, D. C., & Pears, R. K. (1985). The factor structure of the Eating Attitudes Test with adolescent schoolgirls. *Psychological Medicine*, **15**, 141-146.