PSYCHOLOGY AND HUMAN DEVELOPMENT, (ISSN: 2537-950X), 1989, *2*(2), 61–66

http://dx.doi.org/10.2224/phd.6427

LOCUS OF CONTROL AS A PREDICTOR OF SEVERITY OF WEIGHT-CONTROL STRATEGIES IN BULIMICS

GARY GROTH-MARNAT AND JACK F. SCHUMAKER
Warrnambool Institute of Advanced Education

We investigated the relationships between general and specific measures of locus of control with severity of bulimic behavior. Two groups of participants who did and did not fulfil the criteria for bulimia completed measures of symptomatic behavior, internal and external locus of control, health locus of control, and weight locus of control. Results of a comparison revealed no significant differences between the groups. Generalized locus of control was a predictor of frequency of binges but not severity of weight-control strategies or weight fluctuation. The practical implications of and possible reasons for the results are discussed.

Keywords: locus of control, eating disorder, weight control, weight fluctuation, bulimia nervosa, binge eating.

Bulimia nervosa is described in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; DSM-III) as involving episodes of binge eating followed by depressed mood, self-initiated binging and purging, and a personal awareness that this pattern of eating is abnormal. Understanding its etiology has become increasingly important given the estimated prevalence of 13–20% among college-aged females (Halmi, Falk, & Schwartz, 1981), and indications of increasing incidence (Rosen & Gross, 1987). Striegel-Moore, Silberstein, and Rodin (1986) found that socio-cultural, family, psychological, and biological factors affect this disorder.

Particular research attention has been given to the personality factors of impulsiveness, difficulty in regulating negative affective states, need for immediate gratification, and poor self-identity (Brisman & Siegel, 1984;

Gary Groth-Marnat and Jack F. Schumaker, Department of Social Science, Warrnambool Institute of Advanced Education, Deakin University.
The content and formatting of this article were edited and updated in 2016, with efforts made to preserve the original meaning.
Correspondence concerning this article should be addressed Gary Groth-Marnat, Department of Social Science, Warrnambool Institute of Advanced Education, Deakin University, P. O. Box 423, Warrnambool, Victoria 3280, Australia.

Goodsitt, 1983). Additional influencing factors include a strong need for approval, conflict avoidance, difficulty identifying and asserting needs (Katzman & Wolchik, 1984), interpersonal sensitivity (Striegel-Moore, McAvay, & Rodin, 1986), and low self-esteem (Goldfarb, Dykens, & Gerrard, 1985). During an acute phase of bulimia, 35–78% of individuals meet the DSM-III diagnostic criteria for an affective disorder (e.g., depression; Goldfarb et al., 1985; Hatsukami, Eckert, Mitchell, & Pyle, 1984). Further, Dykens and Gerrard (1986) indicated that bulimics are more pathological compared to persons who are equally as dissatisfied with their weight but do not use such radical weight control strategies.

The above descriptions of fluctuating moods, conflicted family settings, low self-esteem, and poor coping ability in bulimic persons suggest problems associated with control. Farther, bulimics (vs. nonbulimics) have been found to score higher on external locus of control (Dunn & Ondercin, 1981; Dykens & Gerrard, 1986; Grace, Jacobson, Fullagar, 1985; Love, Ollendick, Johnson, & Schlesinger, 1985; Weiss & Ebert, 1983). Feeling out of control was found to predict the occurrence of bulimic episodes (Love et al., 1985), and relatively high scorers on external locus of control were less likely to follow through with group therapy (Dixon & Kiecolt-Glaser, 1984). Further, Garner, Garfinkel, Stancer, and Moldofsky (1976) showed that overestimation of body image was positively correlated with both poor prognosis and external locus of control.

While bulimic persons may experience an overall sense of being out of control, weight may be the one area they feel able to master, albeit by radical means. Thus, we hypothesized that bulimics would be more external than nonbulimic individuals are on generalized measures of locus of control, but would show progressively greater control on more specific instruments related to health and weight. Further, we predicted that the severity of bulimic behavior would be related to both generalized and specific measures of externality.

Method

Participants and Procedure

Bulimic participants were 21 women (M_{age} = 23.0 years, *SD* = 3.8, range = 18–32), who were recruited from Columbia College and the University of South Carolina. All were Caucasian college students from middle to upper-middle class backgrounds. A detailed questionnaire and interview were used to select participants who met the DSM-III criteria for bulimia. Their frequency of binging ranged from 1 = *once a month* to 5= *daily*, with a mean weighted frequency of 3.3 indicating an average frequency of binging of at least once a week. Mean duration of bulimic behaviors prior to administration of the questionnaire was 4 years. Weight fluctuation was

calculated by subtracting the highest from lowest weights for each of the participants. An estimate of the severity of their bulimic behaviors was estimated by developing a global clinical rating derived from the combined number of and frequency of use of weight control strategies.

The control group of 33 undergraduate students (M_{age} = 21.0 years, *SD* = 5.6, range = 18–43) was administered the same tests as the bulimic group, after being screened to eliminate those with a history of bulimic behavior.

Measures

Internal–External Locus of Control Scale (I–E Scale). The I–E Scale (Rotter, 1966) is a 29-item forced choice questionnaire that reflects generalized expectancy regarding locus of control. Higher scores indicate higher levels of externality. It has been found to have adequate internal consistency (.65–.79) and a test–retest reliability of .49–.83 depending on the interval between retesting. The scale has also been found to be suitable for predicting weight loss in obese patients during treatment (Cohen & Alpert, 1978), completion of weight reduction programs (Balch & Ross, 1975), and body-image disturbance in anorexics (Garner et al., 1976)

Health Locus of Control (HLC) scale. The HLC (Wallston et al., 1976) is an 11-item scale measuring locus of control expectancies pertaining to disease and health. High scorers believe health is determined by external variables (luck, chance, fate) and low scorers hold health to be self-controlled. Cronbach's alphas range between .30 and .59, with concurrent validity between the I–E Scale and HLC being .33 (Wallston & Wallston, 1978; Wallston et al., 1976). Wallston and Wallston (1978) indicated that the HLC is suitable for assessing health-related behaviors such as compliance with medical regimens, smoking, and information seeking.

Weight Locus of Control (WLOC) scale. The WLOC (Saltzer, 1982) is a four-item scale used to measure locus of control expectancies toward body weight. It has adequate test–retest reliability (.67) and the somewhat low internal consistency of .58 can probably be accounted for by the small number of items. Scores on the WLOC can be used to predict performance in a weight loss program and the source of influence (social vs. self) related to behavioral intentions to lose weight (Saltzer, 1982).

Results

Table 1 shows Pearson product-moment correlation results, which were calculated to assess the magnitude of association among the three measures of locus of control (general, health, weight), age, and measures of behaviors relevant to bulimia (global clinical rating, binge frequency, and weight fluctuation). The prediction that the severity of bulimic behavior would be related to higher scores on externality was partially

supported, with a significant positive correlation found between binge frequency and I–E Scale scores: $r(19) = .57$, $p < .01$. A regression equation for generalized I–E and binge frequency was binge frequency = 1.57 + 0.153 I–E, whereby the I–E score accounted for 28.6% of the variance (Adj. $R^2 = 28.6$, $p < .01$). However, no significant correlations were found between any measure of locus of control and either weight fluctuation or global clinical rating; thus, locus of control was only partially successful in predicting the severity of bulimic symptoms.

Results of comparisons of bulimics with nonbulimics indicated no significant differences (ps > .05) on the three measures of locus of control: generalized I–E ($t = -0.95$), health ($t = -0.22$), and weight ($t = -1.41$).

Table 1. *Intercorrelations Among Study Variables*

Variable	1	2	3	4	5	6	7
1. Global clinical rating		.27	-.20	-.30	-.10	.05	.18
2. Binge frequency			.07	-.20	.57*	.15	.26
3. Weight fluctuation				.05	.09	.30	-.05
4. Age					-.02	.04	-.22
5. I–E Scale						.05	.24
6. Health locus of control							.22
7. Weight locus of control							

Note. I–E Scale = Internal–External Locus of Control Scale. * $p < .01$.

Discussion

The results provide partial support for our hypothesis that externality would be related to, and predictive of severity of bulimic behavior, suggesting that bulimics with a higher internal orientation represent a somewhat healthier population. The finding that externality is predictive of the extent of binging in bulimics is consistent with the findings of previous researchers who reported that measures of externality were associated with the occurrence of bulimic episodes (Love et al., 1985), and severity of symptoms and poor prognosis among anorexics (Hood, Moore, & Garner, 1982). Locus of control predicted our participants' binge frequency but not other aspects of bulimic behavior; however, Garfinkel (1981) noted that the more important and problematic aspect of bulimia is the binging itself and not the purging.

Although externality predicted the extent of binging, the hypothesis that bulimics would be more external on the generalized measure of I–E when compared with nonbulimics was not supported by our data. This is important to note because in most previous studies bulimics have been found to obtain higher external scores than their nonbulimic peers do. However, some support is given to this negative finding in that I–E scores for older anorexics could not be differentiated from norms (Hood et al.,

1982), and I–E scores were not correlated with concern about eating in a nonclinical female population (Groth-Marnat & Schumaker, 1988). Theoretically, the hypothesis that bulimic persons would demonstrate progressively higher levels of control related to health and weight locus of control is attractive in that purging behavior might be conceptualized as a means of asserting control when the bulimic feels out of control regarding other aspects of their lives. However, we did not gain support for this hypothesis.

The above negative findings may possibly be explained in that 37% of the bulimic women in the present study were in the later phase of their disorder, that is, they were either being successfully treated or successfully overcoming their problems on their own. These persons might have felt greater control over their symptoms, so that locus of control scores were similar to those of the comparison group. The divergence between this study and most previous ones might also be explained in that most negative findings are less likely to be reported. Furthermore, bulimic persons are often described as having a high need for external approval (Katzman & Wolchik, 1984); thus, they might have answered the locus of control scales in a socially desirable direction and thereby increased their scores on internality.

Practical implications of this study include that the measures of generalized I–E might be a useful screening device to predict frequency of binges. Treatment approaches might involve techniques such as assertion training and time management, which tend to increase a person's sense of control. This parallels findings that obese patients with higher internality had greater success in weight-loss programs (Cohen & Alpert, 1978) and that high external scorers might be indirectly helped in losing weight by teaching them skills that would be likely to increase their sense of control (Gierszewski, 1983).

In conclusion, locus of control scores of bulimic and nonbulimic women were similar in this study. However, the generalized I–E measure may be useful in predicting binging, as the central feature of the disorder. Bulimic persons who score high on externality relative to other bulimic persons may represent a somewhat more disturbed group. Given the somewhat contradictory research finding for bulimia and scores on locus of control, further researchers might establish clearly the relationship between locus of control and the causes, maintenance, and treatment of the disorder.

References

Balch, P., & Ross, A. (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. **http://doi.org/cdgxtd**

Brisman, J., & Siegel, M. (1984). Bulimia and alcoholism: Two sides of the same coin? *Journal of Substance Abuse Treatment, 1*, 113–118. **http://doi.org/crmc2r**

Cohen, N. L., & Alpert, M. (1978). Locus of control as a predictor of outcome in treatment of obesity. *Psychological Reports, 42*, 805–806. **http://doi.org/d789s7**

Dixon, K. N., & Kiecolt-Glaser, J. (1984). Group therapy for bulimia. *Hillside Journal of Clinical Psychiatry, 6*, 156–170.

Dunn, P., & Ondercin, P. (1981). Personality variables related to compulsive eating in college women. *Journal of Clinical Psychology, 37*, 43–49. **http://doi.org/fqzjs3**

Dykens, E. M., & Gerrard, M. (1986). Psychological profiles of purging bulimics, repeat dieters, and controls. *Journal of Consulting and Clinical Psychology, 54*, 283–288. **http://doi.org/bm4v3c**

Garfinkel, P. E. (1981). Some recent observations on the pathogenesis of anorexia nervosa. *The Canadian Journal of Psychiatry/La Revue Canadienne de Psychiatrie, 26*, 218–223.

Garner, D., Garfinkel, P., Stancer, H., & Moldofsky, H. (1976). Body image disturbances in anorexia nervosa and obesity. *Psychosomatic Medicine, 38*, 327–336.

Gierszewski, S. (1983). The relationship of weight loss, locus of control, and social support. *Nursing Research, 32*, 43–47.

Goldfarb, L., Dykens, E., & Gerrard, M. (1985). The Goldfarb Fear of Fat Scale. *Journal of Personality Assessment, 49*, 329–332. **http://doi.org/dm23jg**

Goodsitt, A. (1983). Self-regulatory disturbances in eating disorders. *International Journal of Eating Disorders, 2*, 51–60. **http://doi.org/fs26p7**

Grace, P., Jacobson, R. S., & Fullagar, C. J. (1985). A pilot comparison of purging and non-purging bulimics. *Journal of Clinical Psychology, 41*, 173–180. **http://doi.org/fdr6qk**

Groth-Marnat, G., & Schumaker, J. F. (1988). Locus of control and attitude toward eating in a female college population. *Social Behavior and Personality: An international journal, 16*, 19–23. **http://doi.org/d5tqjq**

Halmi, K. A., Falk, J. R., & Schwartz, E. (1981). Binge-eating and vomiting: A survey of a college population. *Psychological Medicine, 11*, 697–706.

Hatsukami, D., Eckert, E., Mitchell, J., & Pyle, R. (1984). Affective disorder and substance abuse in women with bulimia. *Psychological Medicine, 14*, 701–704.

Hood, J., Moore, T., & Garner, D. (1982). Locus of control as a measure of ineffectiveness in anorexia nervosa. *Journal of Consulting and Clinical Psychology, 50*, 3–13.

Katzman, M., & Wolchik, S. A. (1984). Bulimia and binge eating in college women: A comparison of personality and behavioral characteristics. *Journal of Consulting and Clinical Psychology, 52*, 423–428. **http://doi.org/b24z6p**

Love, S. Q., Ollendick, T. H., Johnson, C., & Schlesinger, S. E. (1985). A preliminary report of the prediction of bulimic behaviors: A social learning analysis. *Bulletin of the Society of Psychologists in Addictive Behaviors, 4*, 93–101.

Rosen, J. C., & Gross, J. (1987). Prevalence of weight reducing and weight gaining in adolescent girls and boys. *Health Psychology, 6*, 131–147. **http://doi.org/bv4n27**

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*, 1–28. **http://doi.org/c49csg**

Saltzer, E. B. (1982). The Weight Locus of Control (WLOC) Scale: A specific measure for obesity research. *Journal of Personality Assessment, 46*, 620–628. **http://doi.org/chssn7**

Striegel-Moore, R., McAvay, G., & Rodin, J. (1986). Psychological and behavioral correlates of feeling fat in women. *The International Journal of Eating Disorders, 5*, 935–947. **http://doi.org/fq5c8b**

Striegel-Moore, R., Silberstein, L., & Rodin, J. (1986). Toward an understanding of risk factors for bulimia. *American Psychologist, 41*, 246–263. **http://doi.org/dh93d6**

Wallston, B. S., & Wallston, K. A. (1978). Locus of control and health: A review of the literature. *Health Education & Behavior, 6*, 107–117. **http://doi.org/frs88j**

Wallston, B. S., Wallston, K. A., Kaplan, G. D., & Maides, S. A. (1976). Development and validation of the Health Locus of Control (HLC) Scale. *Journal of Consulting and Clinical Psychology, 44*, 580–585. **http://doi.org/b9c6hh**

Weiss, S. R., & Ebert, M. H. (1983). Psychological and behavioral characteristics of normal-weight bulimics and normal-weight controls. *Psychosomatic Medicine, 45*, 293–303.