

AN ABSTRACT OF THE THESIS OF

Peggy K. Sullivan for the Master of Science  
in Psychology presented on July 30, 1985

Title: An Investigation Into the Relationship Between  
Eating Disorders, Locus of Control, and Death Anxiety

Abstract approved: 

Stephen F. Davis

The present study was designed to investigate the relationship between eating disorders, locus of control orientation and death anxiety. The subjects consisted of three groups of females ranging in age from 15-25. These groups were 1) EDO (eating disorder), 2) HSS (high school students), and 3) CS (college students). All subjects received questionnaire packets including the Reid-Ware Three Factor Locus of Control scale and the Templer Death Anxiety Scale. The EDO and HSS groups also received the 4-item Weight Locus of Control (WLOC) scale.

The results indicate that the WLOC scores of the EDO group did not differ significantly from those of the HSS group. Likewise, no significant difference was found between the EDO group and either the HSS group or the CS group on the measure of Death Anxiety. Concerning the Reid-Ware Locus of Control scores, no significant differences existed between the three groups with regard to either the Self Control or the Fatalism dimension. However, the EDO group was found to significantly perceive themselves as being more

controlled by social systems (i.e., had higher Social Systems Control scores) than did either the HSS or the CS group. It thus appears that society's emphasis on beauty and thinness is being taken very seriously; even to the point of starvation or death.

AN INVESTIGATION  
INTO THE RELATIONSHIP BETWEEN  
EATING DISORDERS, LOCUS OF CONTROL, AND DEATH ANXIETY

---

A Thesis

Presented to  
the Division of Psychology and Special Education  
EMPORIA STATE UNIVERSITY

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science

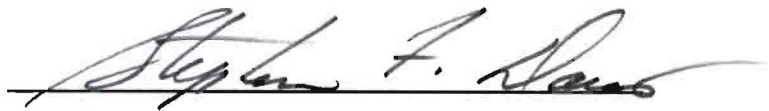
---

by

Peggy K. Sullivan

July 30, 1985

Thesis  
1985  
S



Approved for the Major Department



Approved for the Graduate Council

449148

DP, NOV 15 '85

## ACKNOWLEDGEMENTS

I would like to express my appreciation to Dr. Steve Davis, Dr. Cooper Holmes, and Dr. Scott Waters for serving on my thesis committee. Special thanks to Teresa Walkup for all her help in preparing my questionnaires and to Joan Waters for her cheeriness and support throughout my time at Emporia State. I would also like to graciously acknowledge Mr. Howard Carvajal for his excellence in teaching and his help throughout a very rough semester. His genuine concern and his encouragement have been invaluable to me. Appreciation also goes to my dear friend Kay Nickel, who was my source of strength and hope when I couldn't find them in myself.

A big "thanks" and a few tears of gratitude go to my family, especially my parents. My appreciation for their support throughout these past five years goes far beyond words. May they always cherish the thought that they helped me to see that my dreams could become realities. This paper is proof of that. A special thank you to my dad for all his assistance on the computer. It helped turn a semester's project into a summer's accomplishment.

My greatest thanks goes to Dr. Steve Davis. I am extremely grateful for the hours of help on this paper and for his help over the years on other research. As an instructor, he stands out as one of the most knowledgeable, enthusiastic and caring teachers I have ever known. But,

what I most want to thank him for is his willingness to listen, to help me pick up the pieces, and to encourage me to go on. He has helped me through some very difficult times and has challenged me to believe in myself. Dr. Davis has made a tremendous difference in my life; academically, professionally, and personally, and I couldn't be more grateful.

# CONTENTS

	Page
CHAPTER	
1. Introduction . . . . .	1
2. Method . . . . .	25
3. Results . . . . .	30
4. Discussion . . . . .	33
REFERENCES . . . . .	37

## CHAPTER 1

### INTRODUCTION

This study is primarily concerned with variables which may play some role in the increasing incidence of eating disorders. Given that the construct of locus of control has been implicated by some researchers as a factor in the development of obesity and in the success rates of weight reduction programs, it is plausible to assume that a relationship might also exist between locus of control orientation and the incidence of eating disorders. Previous research comparing anorexics to a normative group demonstrated differences in the locus of control orientation of anorexics when age factors were considered (Hood, Moore & Garner, 1982). Three studies reported a tendency for bulimics to be externally controlled, (Keltner, 1984; Allerdissen, Florin & Rost, 1981; Dunn, & Ondercin, 1981). The inconclusive results reported with anorexic populations and the relatively small body of literature on the relationship between locus of control and eating disorders as a whole warrants further investigation into this issue. Moreover, it would be of interest to determine how bulimics and anorexics compare with each other on like measures of locus of control. The issue of death anxiety was also addressed in the present study. While it has been reported that eating disorder patients experience a significantly higher degree of general anxiety, (Nylander, 1971; Garner, Garfinkel, & Olmsted, 1983), the specific area of death



anxiety has apparently not been looked into. For many anorexics and bulimics, the desire to be thin and the fear of gaining weight become more important than the will to live.

Furthermore, it has been suggested that external locus of control and death anxiety are positively correlated (Toler & Reznikoff, 1967).. However, researchers have reported conflicting results in this area. The present study sought to clarify this issue. Finally, the validity of the Weight Locus of Control scale (Saltzer, 1978) in eating disorder populations was evaluated.

Eating disorders have become a major health issue and relatively common problem among adolescents. The two most researched eating disorders are anorexia nervosa and bulimia. Although there are classic symptoms and diagnosis for each disease, the symptoms often overlap;(See Tables 1 and 2).

The term anorexia nervosa was first used by Gull in 1891 (Milman, 1983). Anorexia literally means loss of appetite, although this is a misnomer since there is often no real loss of appetite and the anorexic at times may be very hungry,(Palmer, 1980). Anorexia nervosa, hereafter referred to simply as anorexia, is an eating disorder in which individuals have a dramatic weight loss from continuous self-starvation or use of purging techniques such as self-induced vomiting, laxative abuse, or excessive exercise in an attempt to attain the perfect body and

TABLE 1

DSM-III Diagnostic Criteria for Anorexia Nervosa

---

- A. Intense fear of becoming obese which does not diminish as weight loss progresses.
  - B. Disturbance of body image, e.g., claiming to "feel fat" even when emaciated.
  - C. Weight loss of at least 25% of original body weight; or if under 18 years of age, weight loss from original body weight plus projected weight gain expected from growth charts may be combined to make the 25%.
  - D. Refusal to maintain body weight over a minimal normal weight for age and height.
  - E. No known physical illness that would account for the weight loss.
-

TABLE 2

DSM-III Diagnostic Criteria for Bulimia

---

- A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time, usually less than two hours).
- B. At least three of the following:
- (1) consumption of high-caloric, easily ingested food during a binge;
  - (2) inconspicuous eating during a binge;
  - (3) termination of such eating episodes by abdominal pain, sleep, social interruption, or self-induced vomiting;
  - (4) repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics;
  - (5) frequent weight fluctuations greater than ten pounds due to alternating binges and fasts.
- C. Awareness that the eating patterns are abnormal and fear of not being able to stop eating voluntarily.
- D. The bulimic episodes are not due to anorexia nervosa or any known physical disorder.
-

ultimate thinness. The subsequent hunger and starvation that occurs as a result of these practices causes the anorexic to become even more preoccupied with thoughts of food and eating, (Crisp, 1982). The anorexic restrictor is one who maintains a low body weight by limiting daily caloric intake to less than 300 to 600 calories per day. The restrictor's fluid intake is also generally quite low, (Levenkron, 1982).

The term bulimia comes from the Greek word, boulimia, which is translated as ox hunger or insatiable appetite. This term is misleading since the binge eating patterns that are present in bulimia do not seem to be directly related to hunger or appetite (Casper, Eckart, Halmi, Goldberg & Davis, 1980). Bulimia is an eating disorder that is characterized by first binging on food and then purging to cleanse one's body of the food. Typical purge techniques among bulimics include vomiting, laxative abuse, diuretics, or enemas, fasting, or excessive exercise. Bulimia is often accompanied by frequent weight fluctuations rather than continuous weight loss (Bayer & Baker, 1982).

Although anorexia and bulimia have received much media attention lately, historical medical records indicate that they are old disorders. Reports of their occurrence are found in Greek hieroglyphics dating back more than 2000 years (Bayer & Baker, 1982). However, the increasing incidence of eating disorders in the United States is alarming. Research indicates that anorexia occurred in 1 out of every 250 U.S. females aged 12 to 18 years in 1982

(Levenkron, 1982), and some researchers speculate that its incidence may increase to 1 in 100 by the end of the decade. While individuals with anorexia lose weight to such a marked degree that the condition is apparent to significant others, an overwhelming number of cases of bulimia go undetected due to the fact that bulimics typically maintain a normal range of weight. In reality, bulimia is a much more widespread disorder than anorexia. Furthermore, it has been found that roughly half of the individuals who are diagnosed as anorexic also engage in bulimic activity; specifically, binge-eating followed by some form of purgative behavior, (Casper et al., 1980). No one knows exactly how many persons in the United States suffer from eating disorders. Anorexia has been shown to be 10 times more likely to affect females than males, (Bruch, 1979). Males appear to be more prone toward bulimia than toward anorexia (Levenkron, 1982). Since eating disorders have been labeled as primarily "female diseases", some males may be reluctant to seek help. Many males who suffer from eating disorders are involved in pursuits where maintaining weight is important. They may be dancers, jockeys, gymnasts, or wrestlers.

Ongoing research in the area of the personality characteristics of eating disorder patients reveals similarities and differences between weight preoccupied individuals and anorexics as well as between bulimics and anorexics. For example, in a recent study which compared weight preoccupied college and ballet students with anorexic

patients on measures of psychological characteristics frequently observed in anorexic and bulimic individuals, the anorexic group was distinguished by significantly more pathology on scales assessing Ineffectiveness, Interpersonal Distrust, and lack of Interoceptive Awareness, (Garner, Polivy, Olmsted, and Garfinkel, in press). The assessment instrument used in this study was the Eating Disorders Inventory (EDI), which is a broad range, self-report questionnaire designed to assess the cognitive and behavioral dimensions characteristic of anorexia (Garner, Olmsted, & Polivy, 1983). This instrument reliably differentiates between patients with anorexia and those without the disorder. The EDI provides subscale scores indicating 1) Drive for Thinness, 2) Bulimia, 3) Body Dissatisfaction, 4) Ineffectiveness, 5) Perfectionism, 6) Interpersonal Distrust, 7) Interoceptive Awareness, and 8) Maturity Fears, all of which have been described as meaningful features of anorexia (Garner et al., 1983). The results reported by Garner et al. are consistent with Bruch's (1962, 1973) postulation that an "all pervasive sense of ineffectiveness" and interoceptive disturbances are fundamental features of anorexia nervosa. Bruch(1973) emphasized the sense of ineffectiveness as the primary ego deficit from which other perceptual and conceptual disturbances originate. Body-image distortions and the often irrational and overwhelming fear of becoming obese (Brady & Rieger, 1972) are common examples of these perceptual and

conceptual disturbances and are prevalent in both the anorexic and bulimic populations. Fear of the adult-female body, one's sexuality, and one's sex role have also been implicated as contributing factors in eating disorders, (Crisp & Kalucy, 1974; Buvat-Herbaut, Hebbinckuys, Lemaire, & Buvat, 1983)

Specific attention to the personality characteristics of anorexics reveals that anorexics are significantly more field dependent and less autonomous than normative populations (Basseches & Karp, 1984). Casper (1982) suggests that the anorexic's preoccupation with thinness and subsequent control over his or her body is an attempt to alleviate feelings of helplessness and worthlessness. Reports that normal subjects showed a higher need for self-control than anorexics (Woods & Heretick, 1983-84) may imply that anorexics gain a sense of personal control via their restrictive dieting and/or purging behaviors which allow them to maintain their weight at the level they desire. When compared with groups of antisocial and depressed individuals, anorexics were found to exhibit significantly greater levels of conformity, neurotic anxieties, control of emotions and stimulus avoidance (Strober, 1981).

In contrast to anorexics' control of emotions, bulimics exhibit an instability of affect that may be characteristic of primary affective disorder (Johnson & Larson, 1982). The nature of the affective instability of the bulimic is most

closely related to an agitated depressive state. Bulimics experience significant levels of depression that seem to center around themes of learned helplessness, hopelessness, pessimism, self-criticism, and guilt ( Pyle, Mitchell & Eckert, 1981; Russel, 1979; Stuckey & Johnson, 1984). Johnson and Berndt (1983) found that bulimics who are at a normal weight often appear to be functioning quite well at work as well as in social, leisure and family activities, when in reality their overall adjustment is significantly more disturbed than that of a normal control sample, and comparable to a sample of alcoholics. MMPI scores indicate that bulimics are vulnerable to impulsive behaviors (Pyle, Mitchell & Elke, 1980) including use of alcohol and street drugs, stealing, suicide attempts, and self-mutilation (Garfinkel, Modlofsky & Garner, 1980). Overall, bulimics are significantly sadder, lonlier, and weaker as well as more irritable, passive and constrained than normative samples (Johnson & Larson, 1982). Also, their affective states are much less stable, as is evidenced by considerably wider oscillations between feeling happy versus sad and between feeling strong versus weak.

Finally, in considering the personality characteristics of eating disordered individuals, one must address the bulimic-anorexics. Reports have indicated that approximately half of the anorexic population engages in some form of binge/purge behavior ( Casper et al., 1980). Research has shown that anorexic patients who binge and purge are



distinctively different from anorexic patients who merely restrict their food intake (Casper et al., 1980; Garfinkel et al., 1980). The bingeing and purging anorexics exhibit a higher degree of impulsive behaviors, and have a much higher incidence of personality disorders. Furthermore, anorexics who do not engage in binge/purge behavior tend to be more introverted, they more often deny their hunger, and they display much less overt psychic distress than do the bulimic anorexics. The bulimic subgroups experience greater anxiety, depression, guilt, interpersonal sensitivity, and have more somatic complaints than do the restrictors. As children the bulimic subgroup resembled the restrictor subgroup in that both had been timid, shy, perfectionistic, competitive children. But as adults, the bulimic subgroup were more extroverted, more often sexually active, older, and significantly more anxious and depressed than the restricting anorexics. Taken collectively, these reports might suggest that at least in the area of personality characteristics there is a possibility that a continuum exists, extending from anorexics to bulimic-anorexics to bulimics.

Physiological difficulties resulting from eating disorders range in severity from loss of hair to death. In anorexics, the low percentage of body fat causes amenorrhea, or the lack of menses, in females and a decline in testosterone production in males. The anorexic may develop a fine covering of hair on the face, arms, legs, and stomach

which serves as insulation to the emaciated individual, (Iowa State Department of Health, 1983). The pulse rate may be slowed to under 60 beats per minute, the blood pressure may be lower than normal, and respiration may be decreased to compensate for the lowered basal metabolic rate of the anorexic. This decrease in metabolic rate (Sours, 1980) is often accompanied by a decrease in body temperature, as demonstrated by the anorexic's intolerance to cold. Other physiological symptoms include constipation due to reduced food intake, retention of water sometimes called starvation edema, skin rash or dry skin resulting from dehydration, and isomnia. Dental caries and periodontal disease are also common (Iowa State Department of Health, 1983). While many of these conditions seem relatively minor, the seriousness of anorexia must not be overlooked. A 1980 study reported a mortality rate of 2 to 15 percent and a morbidity rate of 30 to 65 percent (Sours, 1980). Anorexics die of starvation, suicide, or medical complications such as stomach perforation caused by a nasogastric tube or an inadequate intake of potassium which leads to heart failure. ("The Misnamed Eating Disorder", 1982. No authors listed)

Potentially lethal complications are also associated with bulimia. Repeated vomiting results in serious electrolyte imbalances and potassium deficiency, which may cause muscle cramps, edema, irregular heartbeat, or a heart attack. The acidic nature of the vomitus causes tooth and gum decay and also may result in swollen salivary glands,

tearing of the esophagus, and metabolic imbalances. Menstrual irregularities, kidney failure, and urinary tract infections have also been associated with bulimia (Russell, 1979). Although a wide variety of treatments, ranging from drug and hypnotherapy to group and family therapy, have been employed, no one course of treatment has emerged as a sort of "miracle cure" and as with any therapeutic process, the nature of the patient must be given serious consideration, (Bruckes, 1983; pg. 24).

Locus of control is a construct derived from social learning theory. According to Rotter (1976), locus of control is the extent to which people perceive society's reward system as contingent on their own behavior. At one extreme, people with external locus of control believe that the way things work out depends mostly on luck, fate, or circumstances. People with internal locus of control see a cause-and-effect relationship between their behavior and what happens to them.

Research utilizing the construct of locus of control (Rotter, 1966) in relation to eating disorders has centered on the search for variables which are predictive of success in treatment of obesity. While there is some support for a correlation between internality and higher rates of success in weight reduction programs, (Balch & Ross, 1975; Cohen & Alpert, 1978), a number of studies fail to show a significant interaction between locus of control orientation and either the ability to lose weight or the ability to

maintain weight loss over a period of time, (Monahan, 1972; Tobias & MacDonald, 1977; Rodin, Bray, Atkinson, Dahms, Greenway, Hamilton, & Molitch, 1977; Wineman, 1980). I has been suggested that these conflicting results with regard to the relationship between locus of control orientation and predictability of success in the treatment of obesity might have been due to the type of locus of control measures used, (Satzler, 1988). This explanation is in agreement with Rotter's (1975) statement that, in specific situations where each slight increment in predictability may have important consequences, scales measuring specific expectancies for personal control relevant to the situation might be more useful than the generalized Rotter (1966) I-E (Internal-External) scale. The need for specific measures of locus of control expectancies in the area of weight reduction has led to the development of the Weight Locus of Control (WLOC) scale, (Saltzer, 1978).

The WLOC scale consists of two internally worded and two externally worded items. It uses a 6-point Likert-type format with scores on individual items ranging from 1 which stands for strongly disagree to 6 standing for strongly agree for the externally worded items. The possible range for the scale is 4-24, with a score of 4 indicating an extremely internal orientation and a score of 24 indicating an extremely external orientation. Information regarding normative data, internal consistency, test-retest reliability, and convergent validity have been included in

the "instruments" section of this study. Briefly, this information exposes a possible problem with the present form of the WLOC scale, in that the mean scores of three sample groups clustered at the internal end of the possible range of 4 to 24. Specifically, the groups were 1) College Students - Group A:Test, 2) College Students - Group A:Retest, 3) College Students - Group B, and 4) Female Weight Control Clinic Patients. Their scores were 7.74, 8.19, 7.82, and 7.04, respectively. Although the most internal score of 7.04 distinguishes the Weight Control Clinic Patient group from the control samples, the internal nature of each of the four scores is an indication that it may be necessary to develop even more extreme measures of internalality in order to get a broader variation in scores on a specific measure of locus of control with respect to weight.

Although relatively low measures of reliability demonstrating internal consistency for the scale (.58 and .56) were obtained, these low levels may be related to the fact that the scale contains only four items. The test-retest reliability of the scale (.67) was statistically significant but also relatively low. Saltzer (1982) suggests that this may reflect that locus of control with respect to weight is a changing predisposition rather than a static characteristic.

Previous studies have found locus of control to be stable under a number of weight-related conditions including

weight loss, a camp situation, peer group support and increased pressure from the staff, (Leon, 1975; Nowicki & Barnes, 1973; Rohrbacher, 1973; Stunkard & Mendelson, 1961). It then seems probable that the small but significant shift in locus of control (i.e., from a more external to a more internal orientation) found by Saltzer (1982) was not due to weight loss. A more plausible explanation for this shift in locus of control would be that the intensive exercise program at the weight-loss camp from which the population was drawn had an impact on the subjects' locus of control orientation. This explanation is supported by previous research in which exercise training in children was reported to have been correlated with a shift from a more external to a more internal locus of control orientation, (Folkins & Sime, 1981). This shift has also been demonstrated in an adult male population, (Jeffers, 1977). It is herein assumed that locus of control remains stable under a variety of weight-related conditions. Having clarified this, the present study made no attempt to address itself to this issue.

Turning our attention back to the WLOC scale, (Saltzer, 1982), correlational data comparing scores on the WLOC with scores on the I-E Likert-format scale (Rotter, 1966), a 10-item version (Saltzer, 1978) of the Health Locus of Control (HLC; Wallston, Wallston, Kaplan & Maides, 1976) scale, and with two of the three scales of the Multidimensional Health Locus of Control (MHLC; Wallston,

Wallston, & DeVellis, 1978) scale were  $r=.32$   $p<.001$ ,  $r=.21$   $p<.02$   $r=-.30$   $p<.001$  and  $r=.35$   $p<.001$  respectively. In keeping with the recommendation by Campbell and Fiske (1959) that a new instrument not correlate too highly with measures from which it is supposed to differ, the modest but significant correlation of the WLOC with these scales suggests that the WLOC scale is measuring a dimension related to but not identical to the dimensions measured by the other two scales. The only scale with which the WLOC scale was not found to be significantly correlated was the Powerful Others Health Locus of Control scale of the MHLC scales. There are no items on the WLOC scale which specifically measure the powerful others dimension of externality and this explains the lack of association between the WLOC and that MHLC scale.

In a more recent study conducted by Gierszewski (1983), locus of control was measured using the Multidimensional Health Locus of Control Scale (MHLC) Form A (Wallston et al., 1978) and a modified version of Saltzer's (1978) WLOC scale. In order that the WLOC scale would categorize subjects into the same three dimensions as the MHLC, the investigator added two items tapping the external/powerful others dimension to the already-existing two internal items and two external/chance items. These two questions were "The only way for me to control my weight is to see my doctor regularly and follow instructions," and "My family and friends have a strong influence on my weight."

The scale is referred to subsequently as the modified WLOC scale. The MHLC and the modified WLOC were compared to find that 43 percent of the cases were classified the same by both scales. Neither scale was found to be superior in predicting weight changes.

The findings of Saltzer (1982) present preliminary evidence that the WLOC scale, in contrast with other measures of locus of control, will specifically distinguish predicted behaviors in relation to weight locus of control and weight loss. Saltzer (1982) reported that internals who valued their health and/or appearance were only influenced in their behavioral intentions for weight loss by their personal attitudes toward weight loss, while externals with a high value on health and/or appearance were only influenced by perceived social normative beliefs in predicting their behavioral intentions with respect to weight loss. It is important to note that although the three locus of control scales used in the Saltzer (1982) study were significantly correlated with each other, this pattern of personal attitudes strongly influencing the behavioral intentions for internals and social pressures strongly influencing behavioral intentions for externals did not occur when the subjects' locus of control orientation was assessed by either the I-E Likert (Rotter, 1966) format scale or by the HLC-10 (Saltzer, 1978) scale; (i.e., the use of other established measures would not have led to the predicted findings). Given the findings of Saltzer (1982)



and Gierszewski (1983), it seems that a further look into the use of the Weight Locus of Control scale is warranted.

Research regarding the locus of control orientation of eating disorder populations has been limited. Hood, Moore, and Garner (1982) reported that younger anorexics (mean age 16.3 years) demonstrated higher internal control compared to norms on items related to fatalism and social systems control. I-E scores for older patients (mean age 21.2 years) could not be differentiated from the norms. Research comparing locus of control scores in female adolescent anorexics with scores of female adolescent depressed and conduct disorder controls revealed that anorexics were significantly more internal than both control groups. Those anorexics who scored in a more external direction showed greater denial of illness, fear of weight change, impulse dyscontrol, rigidity of self-imposed controls, and use of purgatives and diuretics (Hood et al., 1982). Keltner (1984) reported that bulimics are typically externally oriented with a fatalistic outlook, a sense of being out of control, a strict but ineffective ego, and an inability to control impulse behaviors. Others have also reported a tendency for bulimics to be externally controlled (Allerdissen et al., 1981; Dunn & Ondercin, 1981). An examination of sex-role related locus of control scores revealed that bulimic women exhibited a significantly higher level of externality and fatalistic control as related to their role as females. Findings also revealed that bulimic women tend to adapt to

the demands of their partners and to follow a role concept of passivity, dependency and unassertiveness, (Rost, Neuhaus, & Florin, 1982), all of which would indicate an external locus of control. Furthermore, the poor self-image, constant fears and sense of ineffectiveness experienced by both anorexics and bulimics are similar to those attributes embodied in the concept of external locus of control.

The present study was designed to determine the degree to which the Weight Locus of Control scale and the Reid-Ware Three Factor Locus of Control scale are in agreement where the classification of eating disorder patients as internally oriented or externally oriented is concerned. In that this research was conducted on an eating disorder population rather than on overweight populations, as by Saltzer (1982) and Gierszewski (1983); the research at hand further serves to test the generalizability and reliability of the previously reported findings with the WLOC. Finally, the present study compares anorexics and bulimics on like measures of locus of control to determine if anorexics and bulimics are distinct from one another with regard to locus of control or if locus of control might be viewed as a broad indicator of eating disorders.

Death anxiety reflects a sense of powerlessness or an inability to control one's environment. Powerlessness and fatalism are fundamental concepts in Rotter's (1966) Locus of Control construct, and also appear to affect both anorexic and bulimic populations. Certainly, one's death is

a factor over which the individual has no control; thus, the obvious relationship between one's locus of control orientation and his or her attitude toward death emerges. In their attempts to demonstrate a relationship between death anxiety and locus of control, previous researchers have reported varying results.

Sadowski, Davis, and Loftus-Vergari (1979) examined three methodological problems that appeared to underlie the inconsistencies of previously reported findings. The first involves the sampling differences across the studies. Tolor and Reznikoff (1967) reported a relationship between locus of control and death anxiety in an all male sample of college students. However, a study using only female respondents (Dickstein, 1972) failed to confirm the relationship. Furthermore, in instances where members of both genders were respondents, studies that failed to confirm the relationship, (Berman & Hays, 1972; Selvey, 1973), used samples with more restricted age ranges than where the relationship was obtained (Patton & Freitag, 1977). A second methodological problem is that each of the studies employed a different measure of death anxiety. Given the fact that very little is known about either the construct validity (Schultz, 1978) or the convergent validity of these scales, it is possible that they may be measuring different aspects of death concerns. The third problem arises from the use of the Rotter I-E Locus of Control scale (Rotter, 1966). The items in this scale

provide indicators of locus of control orientation over a variety of contexts and the sub-components of the Rotter scale are not equally represented. Specifically, the items in the Rotter tend to cluster into the Fatalism and Social Systems domains, but Fatalism items are disproportionately overrepresented.

In a re-examination of the relationship between locus of control and death anxiety, Sadowski et al.(1979) avoided restrictions due to range or sample homogeneity by using a sample with a broad age range and including age as a factor in the analysis. The Death Anxiety Scale was used to measure death anxiety since the construct validity of this instrument has been established and it has been widely used (Templer, 1970). Finally, the Reid-Ware Three Factor Locus of Control Scale (Reid & Ware, 1973; Reid & Ware, 1974) was used to assess locus of control orientation. This instrument contains two subscales generally found in the Rotter, Fatalism and Social System Control, as well as a third scale, Self-control, which one would also expect to be related to death anxiety. Death anxiety was found to be significantly correlated with the Social System Control factor of the Reid-Ware scale, and with the Self-control factor. The fatalism factor of the Reid-Ware scale, focusing on the role of luck or fate, was associated with death anxiety for male respondents, while the Social System Control factor, focussing on the influence of powerful others, was associated with death anxiety for female

respondents. Also, middle-aged respondents reported less death anxiety and a more internal locus of control orientation than their younger counterparts (Sadowski et al., 1979).

It might be assumed that death anxiety would be higher among persons who are involved in high risk, dangerous occupations or life situation. On the other hand, it could be argued that persons who engage in such activities choose to do so because they are less anxious and concerned about the dangerous and potentially deadly consequences of their chosen activity or profession. Yet, another possibility in projecting a relationship between death anxiety and high-risk populations is that a lengthy commitment to a high-risk occupation and the necessary time to work through death anxieties might result in a decrease in death anxiety to a level which is comparable to the death anxiety of non-risk individuals. This conceptualization is based on the studies of Alexander and Lester (1972), and Ford, Alexander, and Lester (1971) in which parachute jumpers and policemen, respectively, did not differ in death anxiety from college students and mailmen in control groups. These results were attributed to denial of death anxiety by the parachute jumpers, and working through and acceptance of such feelings by the policemen. Comparisons with previously published data indicated that both military officers and their wives had a lower fear of death than a number of other groups studied (Koob & Davis, 1977).

The issue of death anxiety as it relates to an eating disorder population has not been directly investigated. Thouzery-Loras (1984) suggests that by destroying their bodies, anorexic patients deny time, love, and death; yet, no emperical studies have been done to test this theory. Low self-esteem, which is characteristic of both anorexia and bulimia, may indirectly link eating disorders with death anxiety. Moses (1973) reported negative correlations between a general fear of death and self-esteem. Similarly, Davis, Martin, Wilee, and Vorhees (1978) found that subjects with low self-esteem had significantly higher death anxiety scores than those subjects with high self-esteem. On the other hand, Diggory and Rothman (1961) published findings which supported the prediction that a person who values himself highly, i.e., has high self-esteem, should be more afraid of death than one whose self-esteem is low. If one is to propose a relationship between death anxiety and eating disorders based on the common factor of self-esteem, further clarification in this area is needed.

Another possible link between death anxiety and eating disorders is that of "high-risk" factors. The incidence of physiological problems associated with anorexia and bulimia has prompted the medical profession to recognize the potentially lethal nature of eating disorders. Certainly those individuals suffering from eating disorders constitute a "high-risk" population. The prevalence of suicidal ideations and attempts among eating disorder patients might

be construed as a relative lack of death anxiety. However, the absence of literature in this area leaves us with only unfounded speculation. The present study directly addressed the possible relationship between death anxiety and eating disorders. In addition, a further analysis of the relationship between death anxiety and locus of control was conducted.

In summary, the present study was designed to investigate the relationship between eating disorder populations and locus of control and death anxiety. More specifically, a group of female eating disorder patients, (i.e., anorexic, bulimic, or both), and two reference groups of consisting of high school and college females were compared on measures of locus of control and death anxiety. Finally, the previously reported findings with the WLOC (Saltzer, 1978) scale were further evaluated.

## CHAPTER 2

### METHOD

#### Subjects

The subjects consisted of three groups of individuals who had been diagnosed by medical or mental health professionals as having an eating disorder, (i.e., anorexia, bulimia, or both), and two reference groups consisting of: 1) college students and 2) high school students. All subjects were females, ranging in age from 15-25 years. The anorexic and bulimic samples were obtained through correspondence with eating disorder programs and professionals who work directly with eating disorder patients. The general "eating disorder" classification, (i.e., group EDO, N=9), was made on the basis of the subject's affiliation with these programs and/or professionals. This group was further subdivided into an anorexic group (N=4), a bulimic group (N=1), and a combination anorexic/bulimic or "both" group (N=4) on the basis of the diagnosis received from these programs and/or professionals. The data on the college students (i.e., group CS, N=15) was selected from data gathered in the 1985 spring semester at Emporia State University. The High School sample (i.e., group HSS, N=18) consisted of females chosen at random from the 1985-1986 enrollment records of high schools in the midwest.

#### Instruments.

Locus of control was measured with the Reid-Ware Three



Factor Locus of Control Scale. This instrument consists of forty-five items, including thirteen fillers, in a forced-choice format. Three dimensions of locus of control are measured. Twelve items each measure dimensions of Fatalism and Social System Control. These items are similar in content to those used in the Rotter scale, reflecting on luck, the unpredictability of the environment, and the influence of powerful others. The Self-control factor consists of eight items. These focus on the extent to which an individual believes his or her behavior is determined by immediate impulses. Each scale is scored in the direction of externality.

Regarding the reliability of the subscales, from a sample of 167 undergraduates, Reid and Ware (1974) reported the alpha coefficients of .76 for the Fatalism and Social Control factors and .71 for the Self-control factor. Sadowski, Blair, and Dickinson found alpha coefficients of .79 and .78 for the Fatalism factor, .73 and .79 for the Social System Control factor, and .65 and .79 for the Self-control factor with samples of thirty-two and sixty-six undergraduates, respectively (1978).

Intercorrelations between the subscales are relatively low considering the fact that they measure aspects of the same construct. Reid and Ware obtained correlations of .39 between Fatalism and Social System Control, .27 between Fatalism and Self-control, and .30 between Social System Control and Self-control. The intercorrelations between the

same dimensions in the Sadowski et al. study were .43, .26, and .09 for the sample of thirty-two participants and .45, .44, and .52 for the sample of sixty-six participants.

The 4-item Weight Locus of Control Scale (WLOC; Saltzer, 1978) was also administered. This scale consists of two internally worded items and two externally worded items and is scored on a 6-point Likert-type scale. The possible range for the scale is 4-24 with a score of 4 indicating an extremely internal orientation and a score of 24 indicating an extremely external orientation.

Levels of internal consistency using Cronbach's alpha were reportedly .58 (n=113) for the first administration of the WLOC scale and .56 (n=112) for the second administration of the scale. The test-retest reliability was .67 ( $p < .001$ , n=110). The modest but significant correlations of .32 ( $p < .001$ ), .21 ( $p < .02$ ),  $-.30$  ( $p < .001$ ), and .35 ( $p < .001$ ) on the WLOC with Rotter's I-E scale (1966), a 10-item version of the Health Locus of Control Scale (Wallston, Wallston, Kaplan & Maides, 1976), and both the Internal Health Locus of Control (IHLC) and the Chance Health Locus of Control (CHLC) scale of the Multidimensional Health Locus of Control (MHLC) scale (Wallston, Wallston & DeVellis, 1978), respectively, suggest that the WLOC scale is measuring a dimension related to but not identical to the dimensions measured by the other scales. The lack of a significant correlation ( $-.03$ , n.s.) between the WLOC and a shortened version of the Crowne-Marlowe Social Desirability Scale (1960) suggests

that the WLOC scale is apparently not biased by a social desirability response set. The WLOC scale has been found to be useful in distinguishing subjects who are internal or external with respect to weight (Saltzer, 1978).

Death anxiety was measured with the Templer Death Anxiety Scale. This instrument consists of fifteen statements regarding fears about death and various illnesses. Scores are based on the number of statements the respondent agrees are true about himself/herself, i.e., higher scores are reflective of greater death anxiety. The construct validity of the Death Anxiety Scale (DAS) has been established and the instrument has been widely used (Templer, 1970).

#### Procedures

Questionnaire packets including the following were prepared:

- 1) A brief introduction to the study.
- 2) A questionnaire of general personal information and information specific to the issues of eating disorders, obesity, and weight preoccupation.
- 3) The Three-Factor Reid-Ware Locus of Control Scale.
- 4) The Weight Locus of Control Scale.
- 5) The Death Anxiety Scale.
- 6) A self-addressed, stamped envelope.

Packets for the high school group were mailed directly to those individuals randomly selected from 1985-1986 high school enrollment records. Data for the female college

students was selected at random from data that had been gathered in the 1985 spring semester at Emporia State University. In the case of these subjects, the 3 Factor Locus of Control scale and the Death Anxiety Scale were self-administered during a single regular class period. It was felt that the use of this already gathered data would be preferable, in terms of representativeness, to the testing of subjects during the summer school session. Hence, WLOC scale scores are not available for these subjects.

For the eating disorder group, large envelopes consisting of 30 questionnaires, a letter of explanation from myself, and a letter from my advisor in support of this research were mailed to the directors of eating disorder programs and to professionals who work directly with eating disorder patients. These directors and professionals were asked to distribute the packets among their inpatient and/or outpatient clientele.

## CHAPTER 3

### Results

Given that only a limited number of questionnaires were returned by the diagnosed eating disorder patients (e.g., anorexic=4, bulimic=1, both=4), preliminary tests were conducted to determine the appropriateness of pooling this data. As the results of these analyses failed to yield significance, these data were combined for further analysis and will be referred to as eating disorder subjects, Group EDO.

Group mean locus of control, weight locus of control, and death anxiety scores are shown in Table 3. A separate unweighted means analysis of variance (ANOVA) was conducted for each of these three dependent-variable measures. More specifically, a single-factor, completely randomized ANOVA incorporating groups (EDO, HSS, and CS) as factor levels was employed in analyzing the DAS and WLOC scores. A split-plot, factorial ANOVA incorporating one between-subjects factor (Groups), and one within-subjects factor (SSC, SC, and F) was employed to analyze the Reid-Ware Locus of Control data.

The results of the DAS analysis indicated that the Groups factor was not significant,  $F(1,39)=.702$ ,  $p > .25$ . Likewise, the results of the WLOC analysis failed to yield significance,  $F(1,25)=.004$ ,  $p > .25$ , for the Groups factor.

The ANOVA of the Reid-Ware Locus of Control data yielded significance for the groups,  $F(2,39)=6.63$ ,  $p > .28$ , category (SSC, SC, and F),  $F(2,78)=12.03$ ,  $p > .001$ , and groups

TABLE 3

MEAN SCORES ON THE SSC (SOCIAL SYSTEMS CONTROL), SC (SELF CONTROL), AND F (FATALISM) DIMENSIONS OF THE REID-WARE LOCUS OF CONTROL SCALE; ON THE WLOC (WEIGHT LOCUS OF CONTROL) SCALE; AND ON THE DAS (DEATH ANXIETY SCALE)

GROUPS	REID-WARE				
	SSC	SC	F	WLOC	DAS
HS (High School) N=18 $\bar{X}$ Age = 15.77	5.89	5.61	3.50	12.50	9.17
CS (College) N=15 $\bar{X}$ Age = 18.24	3.87	3.87	4.40	—	7.53
EDO (Eating Disorder) N=9 $\bar{X}$ Age = 24.75*	7.89	5.33	3.78	12.44	7.89

\* One EDO subject was rejected because she failed to complete the entire questionnaire.

x category,  $F(4,78)=6.36, p<.001$ , factors. The significant interaction was probed through the use of simple main effects analysis comparing the respective groups at each category level. The results of these analysis indicated that the groups did not differ reliably on the Fatalism dimension,  $F(2,117)=.78, p>.25$ , and the Self Control dimension,  $F(2,117)=3.07, p>.05$ . However, the groups differed significantly,  $F(2,117)=10.82, p<.01$ , with regard to their perception of Social Systems Control. This significant effect was probed further through the use of the Newman-Keuls procedure. The results of these tests indicated that Group EDO reported significantly more Social Systems Control than did Group CS ( $p<.01$ ) and Group HS ( $p<.05$ ), and that Group HS reported higher levels of Social Systems Control ( $p<.05$ ) than did Group CS.

## CHAPTER 4

### DISCUSSION

Several points of interest are prompted by the present findings. First, it was surprising to find that there was no significant difference between the WLOC scores of eating disorder patients and those of the high school group. A review of the personal data questionnaires revealed that of the 18 high school participants, 9 reported that they, "Presently feel overweight for their height and bone structure,". Seven were restrictive dieters, 3 fasted, 2 used diet pills or diuretics and 7 engaged in a regimen of excessive exercise as a means to regulate their weight.

These findings echo those of Buvat-Herbaut et al. (1983) in that only 50% of their control group reported being satisfied with their body size. Earlier reports of mild forms of anorexia among nonclinical populations raised questions as to the comparability of the classical syndrome and individuals who do not lose weight to a dangerously low level, (Button & Whitehouse, 1981). Button and Whitehouse have proposed the term "subclinical anorexia nervosa" to describe "many young women who experience the preoccupation with weight and the forms of behaviors associated with anorexia nervosa without being extremely emaciated," (p. 514). Certainly, the present study lends support to the notion that while many individuals do not fit the DSM-III criterion for either anorexia or bulimia, large numbers reporting weight concerns and extreme weight



reduction/weight control methods may very well be at risk for the development of such weight related disorders.

A second point of interest lies in the fact that, as with the WLOC scores, the groups (i.e., EDO, HSS, and CS) did not differ with regard to perception of death anxiety. Again, consistent findings that a high percentage of the normative population (i.e., those not diagnosed as having an eating disorder) expresses concern over weight and weight related issues points to the tenable conclusion that reliable distinctions between groups, with regard to the sample selection process, in the area of weight and weight concerns are at best difficult to come by. That is to say, a substantial percentage of the non-clinical reference groups report problems with weight and forms of behavior that coincide with those of the clinical populations, (i.e., diagnosed eating disorder patients).

Concerning the Reid-Ware Locus of Control scores, clearly, no differences exist between the three groups with regard to their perception of Self Control or Fatalism. However, the significant difference in terms of the perception of Social Systems Control may provide further researchers with one of the major characteristics of eating disorder patients. Eating disorder patients significantly perceived themselves as being more controlled by Social Systems than did either the HSS or the CS groups. Given society's emphasis on beauty and thinness and the flooding of the media and marketing worlds with diet and exercise

gimmicks and gadgets, it is not surprising that the message hits so many so hard. Today's social systems reinforce the need to be thin in order to get ahead. A secondary but yet very important difference is that which exists between high school students and college students in the area of Social Systems Control, (i.e., high school students exhibiting a higher degree of SSC than college students). High school students typically appear to be more prone to fall into peer pressure and parental pressure than do college students. At the high school level there is often a need or desire to deal rather submissively with authority, while college-age individuals are perceived as challenging authority and asserting their own attitudes, rights, and ideals.

One final issue yet remains to be addressed. Certainly one must be concerned with the exceptionally low rate (1%) of return on the questionnaires. Several eating disorder programs chose not to cooperate for a variety of reasons including the need to have an administrative committee review the study before allowing patients to participate. While these procedures are understandable, they unfortunately impede research in an area where it is so desperately needed. Hopefully this problem can be alleviated in the future.

## REFERENCES

## REFERENCES

- Alexander, M., & Lester, D. (1972). Fear of death in parachute jumpers. Perceptual and Motor Skills, 34, 338.
- Allerdissen, R., Florin, I, & Rost, W. (1981). Psychological characteristics of women with bulimia nervosa (bulimarexia). Behavior Analysis and Modification, 4, 314.
- American Psychiatric Association (1980). Diagnostic and Statistical Manual of Mental Disorders (3rd ed.) Washington D.C.: Author.
- 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.
- Basseches, H. I., & Karp, S. A. (1984). Field dependence in young anorexic and obese women. Psychotherapy & Psychosomatics, 41, 33-37.
- Bayer, A. E., & Baker, D. H. (1982). Not Just a Skinny Kid: The Anorexic or Bulimic Teenager. Boys Town Center, National Association of Anorexia and Associated Disorders.
- Berman, A. L., & Hays, J. E. (1973). Relationship between death anxiety, belief in afterlife, and locus of control. Journal of Consulting and Clinical Psychology, 41, 318.
- Brady, A. P., & Rieger, W. (1972). Behavior treatment of

- anorexia nervosa. In Proceeding of the international symposium on behavior modification. New York: Appleton - Century - Crofts.
- Bruch, H. (1979). The Golden Cage: The Enigma of Anorexia Nervosa. New York: Vintage Books.
- Bruch, H. (1981). Developmental considerations of anorexia nervosa and obesity. Canadian Journal of Psychiatry, 26(4), 212-217.
- Bruckes, M. E. (1983). Eating Disorders. Journal of Practical Nursing, 20-24.
- Button, E. J., & Whitehouse, A. (1981). Subclinical anorexia nervosa. Psychological Medicine, 11, 509-516.
- Buvat-Herbaut, M., Hebbinckuys, P., Lemaire, A., & Buvat, J. (1983). Attitudes toward weight, body image, eating, menstruation, pregnancy, and sexuality in 81 cases of anorexia compared with 288 normal control school girls. International Journal of Eating Disorders, 2(4), 45-59.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait - multimethod matrix. Psychological Bulletin, 56. 81-105.
- Casper, R. C. (1982). Treatment principles in anorexia nervosa. Adolescent Psychiatry, 10. 431-454.
- Casper, R. C., Eckert, E. D., Halmi, K. A., Goldberg, S. C., & Davis, J. M. (1980). Bulimia: Its incidence and clinical importance in patients with anorexia nervosa. Archives of General Psychiatry, 37, 1030-1035.
- 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. (1982). Anorexia Nervosa: Let Me Be. New York, Grune and Stratton.

Crisp, A. H., & Kalucy, R. (1974). Aspects of the perceptual disorder in anorexia nervosa. British Journal of Medical Psychology, 47, 349-361.

Crowne, D. P., & Marlowe, D. A. (1960). A new scale of social desirability independent of psychopathology. Journal of Consulting Psychology, 24. 249-354.

Davis, S. F., Martin, D. A., Wilee, C. T., & Voorhees, J. W. (1978). Relationship of fear of death and level of self-esteem in college students. Psychological Reports, 42, 419-422.

Dickstein, L. S. (1972). Death Concern: Measurement and correlates. Psychological Reports, 30, 563-571.

Diggory, J. C., & Rothman, D. Z. (1961). Values destroyed by death. Journal of Abnormal and Social Psychology, 63, 205-210.

Dunn, P. K. & Ondercin, P. (1981). Personality variables related to compulsive eating in college women. Psychology, 37, 43.

Folkins, C. H., & Sime, W. E. (1981). Physical fitness training and mental health. American Psychologist, 36, 373-389.

Ford, R. E., Alexander, M., & Lester, D. (1971). Fear of death of those in a high stress occupation.

Psychological Reports, 29, 502.

Garfinkel, P. E., Modlofsky, H., & Garner, D. M. (1980). The heterogeneity of anorexia nervosa: Bulimia as a distinct subgroup. Archives of General Psychiatry, 37(9), 1036-1040.

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., & Olmsted, M. P. (1983). An overview of the socia-cultural factors in the development of anorexia nervosa. In P. L. Derby, P. E. Garfinkel, D. M. Garner, & D. V. Coscina (Eds.), Anorexia Nervosa:Recent Developments. New York: Alan R. Liss, Inc.

Garner, D. M., Polivy, J., & Olmsted, M. (1982). Development and validation of a multi-dimensional eating disorder inventory for anorexia nervosa and bulimia. International Journal of Eating Disorders, 2(2), 3-43.

Garner, D. M., Polivy, J., Olmsted, M. P., & Garfinkel, P. E. (in press). A comparison between weight preoccupied women and anorexia nervosa. Psychosomatic Medicine.

Gierszewski, S. A. (1983). The relationship of weight loss, locus of control, and social support. Nursing research, 32(1), 43-47.

Hood, J., Moore, T. E., & Garner, D. M. (1982). Locus of control as a measure of ineffectiveness in anorexia nervosa. Journal of Consultin & Clinical

Psychology, 50(1), 3-13.

Iowa State Department of Health. (Summer, 1983). Eating Disorders: Anorexia Nervosa/Bulimia. Nutrition Quarterly News, 29, 502.

Jeffers, J. (1977). The effects of physical conditioning on locus of control, body image and interpersonal relationship orientation of university males and females. Dissertation Abstracts International, 38, 3289-A.

Johnson, C. L., & Berndt, D. J. (1983). Preliminary investigation of bulimia and life adjustment. American Journal of Psychiatry, 140(6), 774-777.

Johnson, C., & Larson, R. (1982). Bulimia: An analysis of moods and behavior. Psychosomatic Medicine, 44(4), 341-351.

Keltner, N. L. (1984). Bulimia: Controlling compulsive eating. Journal of Psychosocial Nursing & Mental Health Services, 22(8), 24-29.

Koob, P. B., & Davis, S. F. (1977). Fear of death in military officers and their wives. Psychological Reports, 40, 261-262.

Lefcourt, H. M. (1976). Locus of Control and Current Trends in Therapy and Research. New Jersey: Lawrence Erlbaum.

Leon, G. R. (1975). Personality, body image and eating pattern changes in overweight persons after weight loss. Journal of Clinical Psychology, 31, 618-623.

Levenkron, S. (1982). Treating and Overcoming Anorexia



Nervosa. New York: Charles Scribner's Sons.

- Mayer S. (1982). The gorge-purge syndrome. Health, 14, 50-52.
- Milman, D. H. (1983). When thin is not beautiful. Resident and Staff Physician, 47-54.
- (The) Misnamed Eating Disorder - Anorexia Nervosa, (1982). Therapia, (No Authors Listed), 6-18.
- Mitchell, J. E., & Pyle, R. L. (1982). The bulimic syndrome in normal weight individuals: A review. International Journal of Eating Disorders, 1, 61-72.
- Monahan, J. T. (1972). Self-attribution and the maintenance of behavior change. (Doctoral dissertation, Indiana University) Dissertation Abstracts International, 33, 2351-B.
- Moses, M. (1973). Considering death and dying: Affective correlates. Unpublished doctoral dissertation, State University of New York at Buffalo.
- Palmer, R. L. (1980). Anorexia Nervosa: A guide for Sufferers and Their Families. New York: Penguin Books.
- Patton, J. F., & Freitag, C. B. (1977). Correlational study of death anxiety, general anxiety, and locus of control. Psychological Reports, 40, 51-54.
- Pyle, R. L., Mitchell, J. E., & Eckert, E. D. (1981). Bulimia: A report of 34 cases. Journal of Clinical Psychiatry, 42, 60-64.
- Reid, D. W., & Ware, E. behavior, and sex role related locus of control in bulimarexic women. Journal

of Psychosomatic Research, 26(4), 403-408.

- Rodin, G. A., Bray, R. L., Atkinson, W. T., Dahms, F. L., Greenway, Hamilton, & Molitch, M. (1977). Predictors of successful weight loss in an outpatient obesity clinic., International Journal of Obesity, 1, 79-87.
- Rohrbacher, R. (1973). Influence of a special camp program for obese boys o weight loss, self concept, and body image. International Journal of Obesity, 44, 150-152.
- Rost, W., Neuhaus, M., & Florin, I. (1982). Bulimia nervosa: Sex role attitude, sex role behavior, and sex role related locus of control in bulimarexic women. Journal of Psychosomatic Research, 26(4), 403-408.
- Rotter, J. B. (1966). Generalized expectencies for internal versus external control of reinforcement. Psychological Monographs, 80, (1, Whole No. 609).
- Rotter, J. R. (1975). Some problems and misconceptions related to the construct of internal versus external cotrol of reinforcements. Journal of Consulting and Clinical Psychology, 43, 56-67.
- Russell, G. (1979). Bulimia nervosa: An ominous variant of anorexia nervosa. Psychological Medicine, 9, 429-448.
- Sadowski, C. J., Davis, S. F., & Loftus-Vergari, M. C. (1979-80). Locus of control and death anxiety: A reexamination. Omega, 10(3), 203-210.
- Saltzer, E. B. (1978). Locus of control and the intention to lose weight. Health Education Monographs, 6, 118-128.
- Saltzer, E. B. (1982). The Weight Locus of Control (WLOC)

- Scale: A specific measure for obesity research. Journal of Personality Assessment, 46(6), 620-628.
- Schultz, R. (1978). The Psychology of Death, Dying, and Bereavement. Reading, Mass.: Addison Wesley.
- Selvey, C. L. (1973). Concerns about death in relation to sex, dependency, guilt about hostility, and feelings of powerlessness. Omega, 4, 209-219.
- Sours, J. A. (1980). Starving to Death in a Sea of Objects: The Anorexia Nervosa Syndrome. New York: Jason Aronson.
- Strober, M. (1981). A comparative analysis of personality organization in juvenile anorexia nervosa. Journal of Youth & Adolescence, 10(49), 285-295.
- Strober, M. (1982). Locus of Control, psychopathology, and weight gain in juvenile anorexia nervosa. Journal of Abnormal Child Psychology, 10(1), 97-105.
- Stuckey, M. K., & Johnson, C. L. (1984). Bulimia among normal weight women: A manifestation of learned helplessness? Unpublished data.
- Stunkard, A., & Mendelson, M. (1961). Disturbances in the body image of some obese persons. Journal of the American Dietary Association, 38, 328-331.
- Templer, D. I. (1970). The construction and validation of a death anxiety scale. Journal of General Psychology, 82, 15-177.
- Templer, D. I., Lester, D., & Ruff, C. F. (1971). Death Anxiety Scale means, standard deviations, and embedding. Psychological Reports, 29, 173-174.

- Thouzery-Loras, C. (1984). An outlook suggestive of anorexia nervosa. Neuropshchiatric de l'Enfance et de l'Adolescence, 32(5-6), 269-279. English Abstract.
- Tobias, L. L., & MacDonald, M. L. (1977). Internal locus of control and weight loss: An insufficient condition. Journal of Consulting and Clinical Psychology, 45, 647-653.
- Tolor, A., & Reznikoff, (1967). Relation between insight, repression, sensitization, internal-external control, and death anxiety. Journal of Abnormal Psychology, 72, 426-430.
- 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.
- Wallston, K. A., Wallston, S. B., & DeVellis, R. (1978). Development of the Multidimensional Health Locus of Control (MHLC) scales. Health Education Monographs, 6, 160-170.
- Wineman, N. M. (1980). Locus of control, body image, weight loss, and age-at-onset. Nursing Research, 29, 231-237.
- Wold, P. M. (1983). Aorexic syndromes and affective disorders. Psychiatric Journal of the University of Ottawa, 8(3), 116-119.
- Woods, W. P., & Heretick, D. M. (1983-84). Self-schemata in anorexia and obesity. Imagination, Cognition & Personality, 3(1), 31-48.