ASSERTIVENESS, LOCUS OF CONTROL, AND BODY IMAGE IN ANOREXIA NERVOSA AND BULIMIA

A Thesis

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ABSTRACT

ASSERTIVENESS, LOCUS OF CONTROL, AND BODY IMAGE IN ANOREXIA NERVOSA AND BULIMIA. (December 1985)

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The purpose of the present investigation was to examine differences among anorexic, bulimic, and control subjects as a function of assertiveness, locus of control, and body image. Ten anorexic, 10 bulimic, and 10 control subjects were administered the Survey of Eating Habits, the College Self-Expression scale, the Adult Nowicki-Strickland Internal-External scale, and the Draw-A-Person Test. It was hypothesized that anorexic subjects would be the least assertive, exhibit a more external locus of control, and show the greater body image distortion in comparison with the other two groups. Differences were also expected between bulimics and controls, with the control group being more assertive, internally oriented in their locus of control, and having the most realistic body image. Analyses of variance yielded significant main effects for assertiveness and locus of control. Paired comparisons indicated significant differences between anorexics and controls and

between bulimics and controls on assertiveness, and significant differences among all three groups on locus of control. Thus the hypothesis that anorexics would be the least assertive and most external in their locus of control was confirmed. A 2 x 3 analysis of variance with repeated measures yielded no significant effects for body image, indicating that all three groups were comparable in their estimation of their body image. The author concluded that the personality characteristics of assertiveness and locus of control are indeed related to the psychopathology of eating disorders and may have significant prognostic value in that individuals who feel more helpless and out of control would require longer treatment.

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INTRODUCTION

In recent years, eating disorders have become an alarming health concern in our society. The incidence of diseases like anorexia nervosa and bulimia has significantly increased during the past decade, and gradually awareness of the psychological issues underlying the disordered eating patterns is increasing. Today the professional literature concerning these disorders is rather extensive, and attempts are being made in different agencies and clinics to address treatment issues successfully.

REVIEW OF THE LITERATURE

Anorexia Nervosa

Anorexia nervosa is a complex eating disorder found predominantly in adolescent and young adult women, involving the relentless pursuit of excessiveness thinness (Bruch, 1978). The American Anorexia Nervosa Association defines anorexia as a "serious illness of delibertate self-starvation with profound psychiatric and physical components" (Neuman & Halvorson, 1983). The essential features are an intense fear of becoming obese, disturbance of body image, significant weight loss, refusal to maintain a minimal normal body weight, and amenorrhea or loss of menstruation in females. The disturbance cannot be accounted for by a known physical disorder (Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, 1980).

Anorexic individuals say they "feel fat" when they are of normal weight or even emaciated. The thinness is believed to be the magical solution to life's problems, hence there is an intense preoccupation with body size and weight. Weight loss is accomplished by a reduction in total food intake, self-induced vomiting, use of laxatives and diuretics, and extensive exercising.

The Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III) presents the following 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.

Thus in anorexia, the desire for thinness becomes so overwhelming and out of control that it is considered to be pathological, and becomes a hinderance to good health and interpersonal relationships (Neuman & Halvorson, 1983).

History

While anorexia has been identified and diagnosed as a distinct syndrome today, references to this illness date back to ancient times. Several researchers (Ross, 1977; Garfinkel, 1981; Sugarman, Quinlan, & Devenis, 1982; Vandereycken & Pierloot, 1983; Neuman & Halvorson, 1983) have traced the history of anorexia nervosa.

One of the earliest reports was by Dr. Richard Morton in 1689 in England, who described a condition he called "nervous consumption": deliberate self-starvation due to "an illness and morbid state of the spirits." Just over a hundred years ago, Gull (1874) in England and Lasegue (1873) in France described and named the condition more accurately. Lasegue considered some hysterical disturbance in the digestive tract to be the starting symptom, and he accordingly named the condition anorexie hysterique, which was

later replaced by anorexia mentale in France and Italy. Gull attributed the want of appetite to a "morbid mental state" and coined the term anorexia nervosa. Both authors emphasized the absence of somatic disease.

In 1914, Simmonds reported that he found destructive lesions in the pituitary gland of an emaciated woman who had died following pregnancy and delivery. The approach subsequently changed and endocrine disturbances became the primary explanation of malnutrition. In the 1930s and 1940s, psychoanalytic explanations took predominance and the focus was on the oral symptomatology of the disorder.

Since the 1960s there has been a definite change in the outlook toward this disorder with a general consensus that the true anorexia nervosa syndrome must be differentiated from unspecific types. Bruch (1973) distinguished between psychogenic malnutrition, atypical anorexia, and primary anorexia nervosa. According to her, primary anorexia nervosa is characterized by (a) a relentless pursuit of thinness with body image disturbance of delusional proportions; (b) a deficit in the accurate perception of bodily sensations, manifest as lack of hunger awareness and denial of fatigue; and (c) an underlying all-pervasive sense of ineffectiveness. Beaumont, George, and Smart (1976) distinguished 'dieters' or abstainers from 'vomiters and purgers', and thus proposed that anorexia nervosa consists of two distinct clinical forms. Recent investigations (Caspar, Eckert, Halmi, Goldberg, & Davis, 1980; Garfinkel, Moldofsky, & Garner, 1980; Strober, 1981) have further

suggested that patients with bulimia may constitute a distinct subgroup among the anorexia nervosa patients.

The Syndrome

The term anorexia is misleading because anorexics do not suffer from lack of appetite. Rather, they have a panicky fear of gaining weight. In order to avoid becoming fat, they convince themselves to change their feelings. Thus those who experience hunger train themselves to consider it pleasant and desirable (Bruch, 1978). The urgency to keep the body as thin as possible is so great that anorexics will resort to any means to keep their weight low. In an effort to remove unwanted food from the body, many resort to self-induced vomiting, enemas, or excessive use of laxatives and diuretics which can have a fatal outcome (Bruch).

"Anorexic behavior" such as obsessive, ruminative preoccupation with food, narcissistic self-absorption, and infantile regression is identical to what occurs during externally induced starvation. However, the anorexic acts as if an internal dictator were preventing her from satisfying her needs by forcing her to reject food that is available. This gives to the anorexic's preoccupation with food a peculiar bizarreness and frenzy (Bruch, 1978).

Some anorexics become overpowered by their hunger sensations and tend to eat large amounts of food which they throw up soon after eating. Those who become binge eaters experience it in the beginning as the perfect solution, and once the binging-purging cycle is established, it is exceedingly difficult to interrupt (Bruch, 1978).

Another unusual twist occurs in relation to the anorexic's fear of growing fat. Unlike the average person who experiences relief while losing weight, for the anorexic the fear does not diminish. As her weight drops, her fear becomes more entrenched and she becomes increasingly stubborn and rigid in her approach to food (Neuman & Halvorson, 1983).

Most anorexics have distorted perceptions of themselves (Wingate & Christie, 1978; Garfinkel, Moldofsky, Garner, Stancer, & Coscina, 1978; Ben-Tovim, Whitehead, & Crisp, 1979; Strober, 1981; Kalliopuska, 1982). Some experience their emaciated bodies as being obese (Neuman & Halvorson, 1983). Thus they develop ingenious ways to lose more weight, including lying, concealing what they eat, regurgitating using laxatives, and exercising incessantly (Neuman & Halvorson; Bruch, 1973).

Another established feature of anorexia is amenorrhea--absence of menstruation or its suppression in females (Lucas, 1978; Falk & Halmi, 1982). The cause of this is unclear, but it is typically the first sign of the disorder.

Demographic Characteristics

While in the past anorexia was considered to be a rare disorder, in the last 20 years there has been a dramatic increase in the number of diagnosed cases of anorexia nervosa. Part of this trend can be explained by the factor of increased exposure; the media and professional publications have taken a keen interest in this unusual disorder and increased its visibility (Neuman & Halvorson, 1983).

Prevalence studies suggest that anorexia nervosa occurs more often than is commonly thought. Crisp, Palmer, and Kalucy (1976) studied a group of adolescent girls and found one severe case in approximately every 200. The Anorexia Nervosa and Related Eating Disorders Organization (ANRED) estimated that approximately one in every 100 white females between the ages of 12 and 18 suffers from anorexia. Roughly 10% of anorexics are male. Females afflicted with this disorder thus outnumber males nine to one.

Halmi (1974) compared demographic and clinical features in 94 patients. She found that 39% had the onset of the illness prior to the age of 15, 47% between 15 and 25 years, and 14% over the age of 25. Bulimia and vomiting were noted more frequently in the oldest age group while laxative abuse had about the same percentage in all age groups. Obesity prior to the development of anorexia nervosa was more commonly present in the groups with the older age at onset of the disease. All age and weight groups had similar large numbers of patients with excellent scholastic records.

Crisp, Hsu, Harding, and Hartshorn (1980) studied a series of 102 anorexia nervosa patients. The mean age at presentation was 20.8 years and the mean weight was 40.8 kg. There was a preponderance of the upper social classes. Neuman and Halvorson (1983) reiterated that anorexia appears to be more prevalent in affluent societies, in the upper and middle class families, and among whites. Bruch (1978) observed that the families of anorexics are usually of small size and are characterized by a paucity of sons. The age of the parents at the time of birth of the anorexic child tends to be

rather high. Of significance is the fact that the fathers value their daughters for their intellectual brilliance and athletic achievements, but rarely pay attention to their appearance as they grow into womanhood apart from criticizing them for becoming plump. The mothers often had been career women, but had given up their careers when they married. Usually they were extremely weight-conscious and preoccupied with dieting themselves. Thus it appears that many of the characteristics of anorexics can be traced to their family and social class background.

Garner and Garfinkel (1980) reported in their study of 423 female students that anorexia nervosa and excessive dieting concerns were overrepresented in dance and modeling students. They found that 6.5% of the dance students had primary anorexia nervosa. Thus individuals, who by career choice, must focus increased attention and must impose control over their body shapes are more likely to develop this disorder.

Physical Effects

In addition to emaciation, anorexia nervosa results in several physical complications. The cessation of menstruation, known as amenorrhea, is one of the most perplexing symptoms (Neuman & Halvorson, 1983). Amenorrhea occurs before the actual weight loss in a substantial number of cases and may be the first sign of anorexia. Yet loss of body fat also seems to have an effect on menstruation. Proponents of the critical body weight hypothesis believe that anorexic amenorrheic females have lost the body weight that may be necessary for the maintenance of menses, or do not have

sufficient body weight for initiation of menses (Falk & Halmi, 1982). Body weight does seem to have a relation to menstruation, because immature circadian luteinizing hormone (LH) secretion patterns are observed in amenorrheic patients who also have significant weight deficits. Normal LH secretion patterns appear to return only in those individuals who gain weight above 80% of their ideal body weight (Katz, Boyar, Roffwarg, Hellman, & Weiner, 1977).

Other physical effects include constipation and abdominal distress. Long-term laxative abuse can produce permanent damage to the colon with malabsorption and loss of the ability to evacuate naturally (Neuman & Halvorson, 1983). The skin abnormalities that arise in anorexia are dryness, lanugo hair which is a fine down that appears on the body, and yellowish skin which usually indicates that a high level of carotene is present in the blood (Papalia & Bode, 1980).

The most serious complications that occur in anorexia nervosa are fluid and electrolyte imbalances. Mars, Anderson, and Riggall (1982) reported that fluid and electrolyte derangements occur frequently in patients with vomiting and anorexia nervosa, and contribute to protracted morbidity and a mortality reported to be as high as 22%. Hypokalemia or loss in total body potassium occurs, resulting in muscle weakness, abdominal distension, nervous irritability, apathy, drowsiness, and irregular heartbeat. However, the true focal point and driving force for the electrolyte disturbance is found to be the loss of chlorides as sodium chloride (hypochloremia), and a decreased effective arterial blood volume

(Mars et al., 1982). During the emaciated state, anorexic patients also show low fasting serum glucose levels and elevated serum cholesterol levels (Halmi & Falk, 1981).

Other abnormalities that occur regularly in anorexia include lowered body temperature (hypothermia), hyperactivity or lethargy, a slowed heart rate (bradycardia), low blood pressure (hypotension), low white blood count, endocrine abnormalities which can inhibit growth, swollen parotid glands, peripheral edema, acetone in the urine, elevated liver enzymes, and elevated amylase (Papalia & Bode, 1980; Neuman & Halvorson, 1983).

Psychopathology and Personality Factors

The central feature of anorexia nervosa is the individual's marked pursuit of thinness with the associated conviction that her body is too large (Garner & Garfinkel, 1982). Often the patient has been slightly overweight and may begin to diet in response to comments about her size from family members, peers, or a boyfriend. The initial intent is to "lose a few pounds," but soon it gets out of hand. The drive for thinness is ego-syntonic and is not viewed as something they would like to see changed. Consequently, severe denial of the illness is an important feature early in the disorder (Garner & Garfinkel; Bruch, 1978).

Central to the concept of the distorted drive for thinness in anorexia is a disturbance in body image (Button, Fransella, & Slade, 1977; Bruch, 1978; Garfinkel et al., 1978; Pierloot & Houben, 1978; Ben-Tovim et al., 1979; Garfinkel, Moldofsky, & Garner, 1979; Strober, Goldenberg, Green, & Saxon, 1979; Strober,

1981; Kalliopuska, 1982). In spite of the severe and progressive weight loss, many anorexics are unaware of their emaciated state. The disturbance of body image acquires delusional proportions, with the perceptual distortion manifested in the form of size overestimation (Strober, 1981b). This appears to be associated with increased neuroticism and an external locus of control (Garner & Garfinkel, 1980; Pierloot & Houben, 1978). Kalliopuska (1982) found in her study of 32 anorexics that their body images as measured by the Draw-a-Person test were significantly more disturbed than those of a control group. Garfinkel et al. (1979) found that such disturbances were stable over a period of one year follow-up and were not affected by weight change. They added that anorexic patients with detectable body image disturbances were likely to have a poor prognosis on follow-up. Button et al. (1977) confirmed this by discovering a direct relationship between marked overestimation of body size and early relapse. Bruch (1977) reported that a realistic body image is a precondition for recovery in cases of anorexia nervosa, and that no real or lasting cure can be achieved unless the misperception of their body image is corrected.

In anorexic patients, satiety perception is also distorted. Patients report severe bloating, nausea, and distension after eating even small amounts of food (Garner & Garfinkel, 1982). The lack of recognition of inner states goes beyond the awareness of body size but extends, according to Bruch (1973), to a variety of inner feelings, including fatigue. Instead of being exhausted

while starving, these young women enjoy boundless energy until late in the illness, and tend to exercise unceasingly.

The psychopathology of anorexia nervosa is closely intertwined with both the drive for thinness and the manifestations of starvation. The drive for thinness is related to the anorexic's intense fear of obesity and of control, leading to a preoccupation with food. The starvation-induced food preoccupation magnifies the anorexic's fears of not being able to control her appetite and forces her to increase her dieting behavior (Garner & Garfinkel, 1982). Thus anorexia seems to stem from a deeply rooted perception of limited autonomous control, and results in a drive for control over one's body. In fact, the anorexic who sees herself as the locus of causative power is shown to evidence a lesser degree of denial, aversion to normal body weight, impulsivity, rigidity, substance abuse, and body image distortion, and achieves more rapid weight gain (Strober, 1982).

Anorexics grow up deficient in their sense of identity, autonomy, and control. In many ways they feel and behave as if they had no independent rights, that neither their body nor their actions are self-directed, or not even their own (Bruch, 1978). They experience ego boundary disturbances and cannot differentiate accurately between self and nonself, between inner experience and external perceptions (Strober & Goldenberg, 1981; Sugarman et al., 1982; Wingate & Christie, 1978). Other psychological changes that often manifest themselves as the illness progresses are irritability, indecisiveness, stubbornness, dichotomous thinking, a sense of

helplessness, unsociability, and a dislike for change (Neuman & Halvorson, 1983). Anorexics gradually narrow their interests, and many restrict their activities to exercise, schoolwork, and dieting (Garner & Garfinkel, 1982). There is a tendency for anorexics to be nonassertive in dealing with people, and to react in either a passive or a defiant manner (Neuman & Halvorson, 1983).

Another feature accompanying anorexia is delay psychosexual development. Anorexia has long been explained as involving a fear of sex and lack of sexual activity (Bruch, 1973; Neuman & Halvorson, 1983). Throughout the 1930s and 1940s, psychoanalytic theory held that the underlying dynamics of a refusal to eat were a fear of oral impregnation which, combined with a general fear of adult sexuality, resulted in the girl's trying to starve off her adult secondary sexual characteristics through anorexic behavior (Thompson & Schwartz, 1982). Although this theory is now largely discarded, empirical evidence suggests that anorexic women are not sexually well-adjusted. Beaumont, Abraham, and Simson (1981) elicited comprehensive psychosexual histories from 31 female patients with anorexia nervosa. The age at interview appeared to be the major factor determining whether individual patients were sexually experienced or not. A majority of the patients however felt that a sexual challenge had precipitated their illness, and most reported a decrease in sexual interest and enjoyment following weight loss. Thompson and Schwartz reported that only 12 of the 26 anorexic women in their study had even had intercourse, and only one woman had a child. Only 45% of the anorexic sample said they

wanted children, compared to 88% of anorexic-like and problem-free women. Palazzoli (1974) observed that it is an oversimplification to insist that the anorexic merely wants to revert to childhood. Rather, she wishes to become an autonomous adult in a distorted sense--by rejecting those aspects of the feminine body which, to her, signify potential problems.

Closely related to the sense of ineffectiveness and lack of basic self-control is a sense of personal mistrust, which may be rooted in the misperception of internal states. Thus feelings of self-worth in anorexic patients are closely bound to external standards for appearance and performance (Garner & Garfinkel, 1982; Bruch, 1978). High achievement expectations are less the product of internal drives than of the desire to please others.

Several researchers have focused on identifying personality characteristics of anorexics. It has been repeatedly observed that patients without anorexia nervosa frequently manifest obsessional behaviors (Garner & Garfinkel, 1982; Crisp & Bhat, 1982; Ben-Tovim et al., 1979; Solyom, Freeman, & Miles, 1982). Examples of obsessive symptoms include the relentless pursuit of thinness, calorie counting, repeated checking of weight, meticulous habits, food-related hoarding, and indecisiveness. Crisp and Bhat reported that anorexics rate themselves high on the obsessional scale of the Crown Crisp Experiential Index (CCEI). Solyom et al. found that obsessives and anorexics obtained similarly high obsessive symptom and trait scores on the Leyton Obsessional Inventory (LOI). Both

groups were rated by the psychiatrist in their study as similarly obsessive.

A significantly large number of studies report the existence of depressive symptoms (Casper & Davis, 1977; Johnson, 1977; Crisp & Bhat, 1982; Ben-Tovim et al., 1979). Piazza, Rollins, and Lewis (1983) reported that test scores of the hospitalized anorexic patients that they studied were significantly higher on the Beck Depression Inventory than the scores of normal controls. Eckert, Goldberg, Halmi, Casper, and Davis (1982) assessed 105 hospitalized female anorexia nervosa patients for depressive symptomatology periodically during treatment. As a whole, the patients were mildly to moderately depressed. Weight gain was correlated with a decrease in depression. Hsu and Crisp (1980) observed differences among vomiters and abstainers, and reported that vomiters were significantly more depressed and anxious than abstainers.

Cantwell, Sturzenburger, Burroughs, Salkin, and Green (1977) speculated that anorexia nervosa may be related to an affective disorder. They particularly noted the presence of depressive symptomatology and dysphoric mood. Anxiety is another symptom that has been frequently observed (Bruch, 1978; Hsu & Crisp, 1980; Solyom et al., 1982).

Strober (1981a) did a comparative analysis of personality organization in juvenile anorexia nervosa. He reported that compared to controls, anorexics were characterized by significantly greater conformity, neurotic anxieties, control of emotionality, and stimulus avoidance. These findings suggest that at the level

of personality functioning, the anorexic has failed to acquire the sense of individuation, mastery, and general plasticity of psychological functioning necessary to cope effectively with critical developmental tasks and to progress toward identity formation.

Also found are hysterical symptoms (Hsu & Crisp, 1980; Crisp & Bhat, 1982), somatic complaints (Crisp & Bhat), irritability (Casper & Davis, 1977), and decreased emotionality (Crisp, Hsu, & Stonehill, 1979). Crisp et al. (1979) measured scores on the Introversion/Extroversion scale of the Eysenck Personality Inventory (EPI) and found that the population of severely ill, low body weight anorexics were characterized by a high degree of introversion.

Small, Teagno, Madero, Gross, and Ebert (1982) proposed that anorexics have a number of features in common with borderline personalities. These similarities include a proclivity toward disturbed thought processes, sensitivity to depression and affective needs, but fairly good cognitive organization on structured tests.

Pillay and Crisp (1977) studied the psychological characteristics of anorexia nervosa patients whose weight had been newly restored. They found that at this early stage of potential recovery, the patients reported low self-esteem, low assertive behavior, and a preference to stay in the background. They also had a high fear of negative evaluation.

Etiology

Anorexia nervosa appears to develop in response to a combination of factors. The onset of the disorder tends to be associated

with stressful life situations accompanied by a lack of adequate coping skills, adolescence, cultural factors, possible biological predispositions, family dynamics, and other medical/physiological considerations. Additionally, it has been proposed that a lack of meaningful peer relationships may also be an exacerbating factor (Neuman & Halvorson, 1983).

Sociocultural pressures are undoubtedly one of the foremost factors that predispose young women to develop anorexia. Physical attractiveness in the form of slimness has become one of the important social values, and has made women in western society prey to the huge fashion and diet industries that first set up the ideal images, and then exhort women to meet them (Orbach, 1978). Garner, Garfinkel, Schwartz, and Thompson (1980) reviewed data from Playboy centerfolds and Miss America Pageant contestants in the last 20 years, and found a significant trend toward slimness. For instance, the average Playmate in 1959 weighed 91% of average, while in 1978 she weighed only 83.5% of average. The pressure on women, particularly those of the upper social class, to diet and appear slim thus seems relentless. In addition, a strong cultural emphasis is also placed on success, and women today are confronted with new demands of success, independence, and sexuality (Neuman & Halvorson, 1983; Garner & Garfinkel, 1980). Both the pressures to be slim and achievement expectations are risk factors in the development of anorexia nervosa, and women are caught in an attempt to conform to a standard that is externally defined and constantly changing (Orbach, 1978).

The etiology of anorexia nervosa can also be traced to pathological family relationships (Morgan & Russell, 1975; Conrad, 1977; Ceaser, 1977; Bruch, 1978; Kalucy, Crisp, & Harding, 1977; Crisp et al., 1980; Yager, 1982). Many anorexics express that their whole life had been an ordeal of wanting to live up to the expectations of their families, always fearing they were not good enough in comparison with others, and therefore disappointing failures (Bruch, 1978). Several researchers have described the parents of anorexic patients as upwardly mobile, middle class, with strict moralistic values, who often place emphasis on appearance, conformity, and obedience. High expectations and rigid attitudes are the norm. Bruch (1973) more specifically has found these parents to be out of tune with their children. Morgan and Russell (1975) reported that the families come from higher social classes and evidence a disturbed relationship with the patient, which in fact is a factor for poor prognosis.

Yager (1982) has discussed family issues and noted that superficially the family to which the anorexic belongs is a healthy family, but is excessively concerned with external appearances and with avoiding social shame, and is therefore diligent about putting up a congenial facade. Parental stresses and concerns are channeled and deflected toward the children, so that the mother becomes excessively involved with them. Because of their own limitations, the parents are somewhat fearful of their children's adolescent psychosexual development and impending separation. This parental overinvestment leads to a situation in which a vulnerable daughter becomes

more concerned with external parental approval than with her own internal satisfactions. Selvini (1974) added that the early mother-child relationship is excessively symbiotic and controlling, with the child being destined to live out the mother's needs by controlling and limiting her own fantasies. The father is considered to be weak, passive, and emotionally absent.

Ceaser (1977) has come up with a more psychoanalytically oriented formulation to explain the role of the mother in the patient's anorexia. In each of the four cases he observed, the patient's mother had died of cancer. He felt that the patient's anorexia can be specifically linked to the lost maternal object, and he emphasized the significant role maternal identification plays in the psychodynamics of anorexia. The refusal of food and the wish to be thin is in itself a maternal identification, according to him, and the wasting patient becomes like the cachectic mother at the time of her illness and death.

Kalucy et al. (1977) found that over 40% of the parents in the 56 families they studied admitted to marked degrees of unhappiness with their marital relationship. Crisp et al. (1980) found that an apathetic relationship between parents was more common than one characerized by high discord.

In general, the families of anorexics seem to share certain features: an unusual interest in food, weight and shape, an unusual incidence of phobic avoidance and obsessive compulsive character traits, an unusual vulnerability to seemingly ordinary life events, and a tendency to appear unusually close, loyal, and mutually

interdependent. Overall, they seem ill-equipped for, and prepare their children inadequately for, the adolescent phase of development (Kalucy et al., 1977).

Anorexia is often precipitated by the problems and vulnerabilities of adolescence. Clearly, there are developmental tasks including sexuality that the anorexic avoids by choosing to remain a "child" (Bruch, 1981; Neuman & Halvorson, 1983). The anorexic's lack of meaningful peer relationships is a contributing factor, ultimately resulting in a phobic avoidance of adolescent/adult weight (Hsu, 1983).

A biological factor may also underlie anorexia nervosa. Russell (1977) has suggested that a primary hypothalamic dysfunction of unknown etiology and only partially dependent on weight loss and psychopathology occurs in anorexia. Thus while it is possible that anorexia nervosa has a single discrete cause, it is more likely that complex chains of events interact to precipitate the illness.

Bulimia

Bulimia, more commonly called the "binge-purge syndrome," refers to episodes of gross overeating followed by vomiting, abdominal pain, laxative use, or sleep. Food preoccupations and mild fluctuations in weight also characterize this condition (American Psychiatric Association, 1980).

The Syndrome

The latter part of the 1970s brought about an increased interest and discussion of the eating disorder called bulimia. Much

of this interest arose out of the apparent connection of the binge-eating syndrome with anorexia nervosa. Several investigators found that a significant proportion of their anorexic clients exhibited symptoms of bulimia (Caspar et al., 1980, Hsu, Crisp, & Hardig, 1979; Pyle, Mitchell, & Eckert, 1981). Further, it was found that binge-eating and vomiting occurred in normal weight and even overweight people (Boskind-Lodahl & White, 1978; White & Boskind-White, 1981). This led to the classification of bulimia as a distinct disorder from anorexia nervosa in the DSM-III.

The DSM-III presents the following 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--consumption of high-calorie, easily ingested food during a binge, inconspicuous eating during a binge, termination of such eating episodes by abdominal pain, sleep, social interruption, or self-induced vomiting, and repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics or diuretics, frequent weight fluctuations greater than 10 pounds due to alternating binges and fasts; (c) awareness that the eating pattern is abnormal and fear of not being able to stop eating voluntarily; (d) depressed mood and self-deprecating thoughts following eating binges; and (e) the bulimic episodes are not due to anorexia nervosa or any known physical disorder.

The term bulimia is a Greek word literally meaning 'ox hunger' or insatiable appetite. Over the years different terms have been

used to describe the binge-purge syndrome. Guiora (1967) coined the term dysorexia for the syndrome, but suggested that it comprised of both anorexic and bulimic behavior. Palmar (1979) proposed a new name--the dietary chaos syndrome to describe it. Russell (1979) observed in his patients that the episodes of overeating were the immediate precursor of self-induced vomiting or purgation, which he regarded as the patients' attempts to counteract the effects of the ingestion of excessive food. The constancy and significance of overeating led him to develop a new terminology for the description of this symptom--bulimia nervosa, which he distinguished from anorexia nervosa by the criteria that the bulimics were generally of normal weight, did not experience amenorrhea as a persistent feature, and that the vomiting and purging in true anorexia nervosa was generally less frequent and less habitual.

Boskind-Lodahl and White (1978) generated the term bulimarexia to describe self-starvers who resort to binging and purging behaviors to control their physical appearances. They felt that the distinguishing feature of bulimarexia is its regular binges, "its orgies of eating followed by ritual purifications, over and over again."

Incidence

Evidence has indicated that bulimia is alarmingly prevalent and is more widespread than anorexia. The National Association of Anorexia Nervosa and Associated Disorders (ANAD) estimated that between 20% and 30% of college women engage in bulimic behavior (Neuman & Halvorson, 1983). Statistics from ANAD (1984) have also

pointed out that 5%-10% of bulimia's victims are male. Thus thousands of young people today struggle with this disorder. Halmi, Falk, and Schwartz (1981) reported a prevalence rate of 13% in their study of 355 college students. Hawkins and Clement (1980) found that over two-thirds of the females and nearly one-half of the males in their sample of college undergraduates reported binge eating occurrences.

The exact prevalence of bulimia is unknown, but it is significant enough to constitute a serious public health problem. The disorder is often difficult to detect because of the extreme secrecy surrounding the binging-purging behavior. Furthermore, because the individual's shape and weight are usually within normal limits and eating habits in social situations are controlled and appropriate, the disorder is not very visible (Schlesier-Stropp, 1984).

Demographic Characteristics

Bulimia has been found to be more common in women than men (Halmi et al., 1981). White and Boskind-White (1981) stated that almost all of the bulimic patients they worked with over a period of five years were women. Research from ANAD has indicated that among the men who are experiencing this disorder, most of them are involved in sports or professions in which weight plays an important role, such as wrestling (Neuman & Halvorson, 1983). However society's approval of abstinence and thinness and its revulsion for obesity and excessive eating tends to be focused mainly on women (Schwartz, Thompson, & Johnson, 1982), and systematic studies

have supported the notion of a shift in the culture toward slim, thin-hipped women. Consequently, more and more young women are becoming afflicted with this disorder.

Bulimia usually begins in late adolescence or the early twenties. The most frequent age of onset is said to be 18 years (Neuman & Halvorson, 1983). Most studies have reported that bulimic patients tend to be in their twenties, with ages ranging from 15 to 51 (Boskind-Lodahl & White, 1978; Russell, 1979; Herzog, 1982). Cooper and Fairburn (1983) reported that the mean age of their sample from a clinic in England was 24.1 years. It is relatively rare for the problem to begin after age 30. Generally, the onset of overeating and the onset of vomiting do not begin at the same time. Fairburn and Cooper (1982) found the onset of vomiting to occur one year after the onset of binge eating. Russell (1979) reported that purging behavior was first experienced three years after overeating began, and became habitual and established over a period of months and years.

Bulimia has been found to occur among all weight groups from the anorexic to the overweight. Russell (1979) found that in 17 of the 30 bulimic patients he studied, there had been a previous history of anorexia nervosa. In 7 of the 30 patients there had been moderate weight loss, and 3 patients had remained consistently overweight. Loro and Orleans (1981) studied the pattern of binge eating in obesity, and found that 28.6% of the 280 clinically obese patients whom they studied at the Dietary Rehabilitation Clinic of the Duke University Medical Center reported binge eating regularly,

and another 22.1% did so frequently. Herzog (1982) interviewed 30 bulimic patients and found them to be of average or slightly above average weight. Finally, Halmi et al. (1981) concluded from their results that the symptoms of bulimia are more likely to occur in those individuals who at some time had been overweight or tended to be heavy within their normal range.

The binge eating behavior seen in bulimics is a frequent occurrence. Most binge-eat at least several times each week, with a mean reported frequency of 11.7 episodes per week (Mitchell & Pyle, 1983). Carroll and Leon (1981) found that 25% of their sample binged every day, with 42% of the sample reporting binging several times a day. Binge eating episodes tend to last less than two hours, but can last as long as eight hours (Mitchell, Pyle, Eckert, Hatsukami, & Lentz, 1983). Russell (1979) concluded that the frequency of binge eating varies with the individual. Some patients are able to impose strict control over their food intake for a period of time, while others binge several times a day.

Bulimic patients tend to consume high caloric, easily ingested food during a binge, such as ice cream, candy, bread, and doughnuts (Mitchell et al., 1983). The vast majority report craving specific foods during the binge (Mizes, 1983). Patients typically consume 2,000-3,000 calories in a binge (Carroll & Leon, 1981); however, consumption of as much as 20,000 calories has been reported (Mizes, 1983).

There also appears to be a consistency in the setting for the binge. Loro (1980) reported that a majority of binges occur while

the person is alone and at home, frequently in the kitchen. Mizes (1983) observed a high frequency of binging while watching television or browsing through a magazine. For those binges not at home, fast food restaurants are high probability settings (Loro, 1980). The early evening, after returning from work or school appears to be particularly high risk time for binges (Carroll & Leon, 1981).

Vomiting seems to be the most commonly used method for purging, followed by the use of laxatives and diuretics (Halmi et al., 1981). Russell (1979) reported that 27 of the 30 patients in his study vomited. In a study of 85 bulimics done by Mitchell et al. (1983), it was seen that 85.9% vomited, 41.2% used laxatives, 15% used diuretics, and 7.1% used enemas to rid themselves of excess food.

In summary, research has indicated that the bulimic patient is typically a white woman in her mid 20s. She probably began overeating at about 18 and began purging, usually by vomiting, a year later. Although her weight may range from underweight to overweight, she is often within the normal weight range for her age and height. A large variance in the frequency of binge eating and purging may be found (Schlesier-Stropp, 1984).

Physical Effects

Bulimics are prone to a number of medical complications, usually resulting from repeated vomiting rather than from the use of purgatives or from binges (Russell, 1979). Gastric dilation is the only known complication directly associated with binge eating (Mitchell & Pyle, 1983). One of the most serious effects of

bulimia is the possibility of fluid, electrolyte, and acid-base disturbances (Mitchell et al., 1983). In their study, 48.8% of the patients were found to have electrolyte abnormalities. The most common problem was elevated serum bicarbonate, indicating probable metabolic alkalosis. Hypochloremia or chloride loss and hypokalemia or serum potassium depletion are also commonly found. Severe alkalosis and potassium deficiency may cause weakness, constipation, and tiredness, and may predispose the individual to cardiac arrhymias and sudden death. Other common physical effects include paraotid gland swelling and puffy cheeks, extensive dental enamel erosion as a result of chronic vomiting, blisters on the roof of the mouth from fingernail scratches during vomiting, ulceration of the esophagus, hernias, anemia, renal failure, urinary tract infections, and general lethargy and weakness (Mitchell & Pyle, 1983; Lucas, 1981; Russell, 1979; Kubistant, 1982; Mitchell et al., 1983; Mizes, 1983; Schlesier-Stropp, 1984). The overuse of laxatives may injure the mesenteric plexus in the intestine with subsequent loss of normal bowel reactivity (Herzog, 1982). Vitamin and mineral deficiences are possible depending on the nature of the diet and the extent of vomiting and purging (Lucas, 1981). Although menstrual irregularities are common with bulimics, amenorrhea is reported less often and for a shorter duration with bulimia than with anorexia nervosa (Schlesier-Stropp, 1984). Finally, patients may develop reactive hypoglycemia, functional alimentary type (Mizes, 1983).

Basically, the bulimic's body does not know what to expect. It is starved and then great quantities of food are ingested. These radical eating fluctuations disrupt the metabolism so much that the body no longer has a base from which to consistently operate, and hence begins to weaken and breaks down (Kubistant, 1982).

Psychopathology and Personality Factors

Bulimic patients tend to use binging and purging as mechanisms for escaping negative feelings and stressful situations. The binging and purging cycle plays a primary role in their lives--it provides a structure, temporarily wards off pain and anxiety, and allows for avoiding decision-making in other aspects of life. Consequently, while this cycle may disgust the bulimic, it is clung to and cherished (Neuman & Halvorson, 1983).

Bulimics tend to be preoccupied with food and the urge to eat (Russell, 1979; Herzog, 1982; Fairburn & Cooper, 1982). Life for the individual becomes increasingly food oriented, and binge-purging takes priority over everything else, including close relationships, school, jobs, health, honesty, and happiness (Neuman & Halvorson, 1983). In addition, they also report preoccupation with weight and body size (Russell, 1979). An exaggerated fear of becoming obese and a perception of feeling fat are present (Fairburn & Cooper, 1982). The outcome is an all or none pattern to the bulimic's eating behavior, oscillating between periods of severe dieting, or fasting and gorging (Garfinkel & Garner, 1982).

Behavioral scientists have long attempted to generate a description of the personality patterns of bulimics. One of the cornerstones of the profile of bulimia is the issue of control and perfectionism. Based on all their longings and insecurities, bulimics expect themselves to be perfect, and try to increase the control over their lives. Their obsessive pursuit of thinness constitutes not only an acceptance of this ideal, but an exaggerated striving to achieve it. Their attempts to control their physical appearance demonstrate a disproportionate concern with pleasing others and a reliance on others to validate their sense of worth. "In each case their efforts to perfect themselves through dieting had led them to their first eating binge. After the binge came guilt, and after the guilt came a renewed compulsion to lose weight" (Boskind-Lodahl & Sirhin, 1977). Bulimics also display a strong need for achievement. Boskind-Lodahl and Sirhin have reported that they tend to be high achievers academically and above average in intellect.

Bulimics often do not have their love and acceptance needs met by their families, and therefore place an inordinate emphasis on romantic relationships. These relationships are often idealized and exaggerated and are doomed to failure (Bruch, 1973). When the expectations of these women of being desired and pursued by men do not materialize, they believe themselves to be undesirable, unattractive, and unworthy. These beliefs reinforce their existing sense of inadequacy, and fear of rejection then becomes a crucial

motivating force in their behavior (Boskind-Lodahl & Sirhin, 1977; Rodriguez, 1981).

Although many bulimic women are considered successful in their careers, their apparent self-confidence and competence is deceptive. Beneath this secure appearance lies a need for dependency and approval (LeClair & Berkowitz, 1983). Discouragement and feelings of increased helplessness are common (Banks, 1981). Other characteristics often cited in the literature include a lack of assertiveness, low self-esteem, anxiety, problems with sexual identity, fear and avoidance of sexual relationships, impulsivity, labile moods, and depression (Boskind-Lodahl & Sirhin, 1977; Russell, 1979; Allerdissen, Florin, & Rost, 1981; Mitchell & Pyle, 1983; LeClair & Berkowitz; Neuman & Halvorson, 1983). Some researchers have speculated that bulimia may be closely related to an affective disorder (Hudson, Laffer, & Pope, 1982). Johnson and Larson (1982) also reported that bulimics spend significantly greater time alone than average women, and are sadder, lonelier, and alienated. They also experience more dysphoric and fluctuating moods, display harmful impulsive behaviors as shown by suicide attempts, self-mutilation and kleptomania, and some may become alcoholic (Garfinkel et al., 1980). Casper et al. (1980) observed that bulimic patients scored significantly higher than a control group on the Psychopathic Deviate scale of the Minnesota Multiphasic Personality Inventory (MMPI), and had high obsessional and somatization scores Allerdissen et al. (1981) reported an external locus of control among bulimics.

Bulimics are also unable to deal effectively with stress (LeClair & Berkowitz, 1983; Hawkins, 1982). Typically the binge is precipitated by stress. Hawkins had argued that the binge is best understood within the context of a stress-coping framework, and can be considered as adaptive in view of the fact that bulimics have few other stress-coping skills. One of the most difficult feelings to acknowledge and express in a person with bulimia is anger (Boskind-Lodahl & Sirhin, 1977; Banks, 1981; Carroll & Leon, 1981). Being annoyed, indignant, furious, outraged, and angry are all unacceptable from the mildest to the most severe form (Banks). Thus they tend to be angry, hostile people who are unable to express themselves directly, and therefore resort to passive-aggressive or manipulative ways of dealing with others (Mizes, 1983).

In summary, White and Boskind-White (1981) have proposed that the bulimic's problem is that she identifies too strongly with what she perceives as the proper female role and desperately tries to fit herself into the stereotyped feminine role, both in the relentless pursuit of thinness and in her passive, accommodating, and helpless approach to life. She does not reject her femininity, but becomes a caricature of it.

Etiology

Many of the factors involved in the genesis of anorexia are true of bulimics as well. Bulimia may have an organic cause such as in certain hypothalamic diseases associated with excess appetite or lack of satiety inhibition (Lucas, 1981). However, more often

the behaviors occur by conscious choice, particularly in regard to binging and purging. Numerous theories have been advanced as to why certain people are prone to this eating disorder. One of the earliest theories was the psychoanalytic viewpoint which stresses three core issues. First, it is assumed that the bulimic is afraid to grow up and accept the traditional female role. Second, she is viewed as expressing pregnancy wishes by starving and binging. Finally, the problem is viewed as a result of a faulty parent-child relationship from infancy. Behind the bulimic's fears, according to psychoanalysts, is a domineering mother whom she unconsciously hates. This hatred causes her to resist becoming a mature woman and she uses food as her weapon of resistence and self-assertion (Boskind-Lodahl & Sirhin, 1977; White & Boskind-White, 1981; Mitchell & Pyle, 1983). Boskind-Lodahl (1976) had found little evidence for this psychoanalytic view, and regards both societal and parental factors as being involved. According to her, the typically bulimic individual is usually the daughter of parents who are very conscious of beauty and success. The young woman is brought up trying as hard as she can to be acceptable to a man, and she hears constantly that her acceptance depends largely on her appearance. Herzog (1982) reported that over one-third of the patients in his study were from families with parents who were either divorced or widowed. Strober (1981) found that the family environment of bulimics was characterized by significantly greater conflict and negativity, less cohesion, and less structure than the nonbulimic anorexic family, and bulimics experienced more stressful

life changes prior to the onset of the illness. Parents of bulimics also reported significantly higher levels of marital discord, were rated as more emotionally distant from their daughers, and exhibited greater psychiatric morbidity and physical health problems. The results confirmed his hypothesis that the disposition toward bulimia is rooted in early disturbances in ego functioning, personality, adaptation, and other maladaptive factors.

Kubistant (1982) emphasized societal influences and the cultural obsession with slenderness. He added that bulimic behavior is reinforced in many different settings. On college campuses, bulimia is accepted as a common means of staying in control of one's diet as well as bolstering one's self-esteem.

Dependent Variables

In the present investigation, the author chose to examine the characteristics of assertiveness, locus of control, and body image in anorexics and bulimics compared with a control group. The choice of these variables arose from the fact that previous research on anorexia nervosa and bulimia has provided insufficient information on these measures. For instance, there are no prior studies that clearly indicate whether anorexics are more or less assertive than bulimics, nor do previous investigations provide information on which of the two disorders result in the greater body image distortion or the more external locus of control. The author expected that the present study would provide such comparative information, thus extending the research on eating disorders and

clarifying the role of assertiveness, locus of control, and body image in anorexia nervosa and bulimia.

Galassi, DeLo, Galassi, and Bastien (1974) reported that Alberti and Emmons in their 1970 study defined assertiveness as "behavior which enables a person to act in his own best interests, or stand up for himself without undue anxiety, to express his rights without denying the rights of others." Deficits in assertive behavior have been implicated in a wide range of psychological disorders. Based on former research, we may expect that individuals suffering from eating disorders would tend to be relatively non-assertive. A measure of assertiveness was obtained in this investigation from the College Self-Expression scale.

Locus of control is a personality variable dealing with the placement of responsibility for the outcome of events or behaviors. This construct reflects the degree to which one believes that rewards are due to one's own behavior (internal control) or due to external forces (Rotter, 1966). An internal is a person who perceives that an event or reinforcement is contingent upon his/her behavior or his/her own characteristics, and an external is a person who does not perceive the contingencies between his/her own behavior and outcomes. Research on eating disorders have indicated that anorexics and bulimics tend to have an external locus of control. A measure of locus of control was obtained in this study from the Adult Nowicki-Strickland Internal-External scale.

Distorted perception of one's body image is a characteristic of eating disorders. Individuals with eating disorders tend to

overestimate their body size, thus perceiving themselves as being overweight and unattractive. Body image was measured in the present investigation by the Draw-A-Person Test.

Statement of the Problem

The disorders of anorexia nervosa and bulimia certainly warrant further study. While previous research have focused predominantly on one of the disorders or the other, few have compared personality characteristics involved in the two syndromes. Further, while the reported comparison studies have looked at social and family background, behavior patterns, or data on personality from analysis of MMPI profile, there is a paucity of research in the areas of assertiveness and locus of control.

The purpose of this study was to compare a sample of anorexics, bulimics, and control subjects on assertiveness, locus of control and body image perception.

The author expected that this study would provide comparative information on the dynamics of personality functioning of anorexics and bulimics, and validate the assumptions of former research. The following hypotheses were made:

1. The anorexic subjects will be the least assertive of the three groups, followed by the bulimic subjects, and the control subjects will be the most assertive.

2. With reference to locus of control, anorexics will have the most external orientation; bulimic subjects will be external to a lesser extent, and the control group will have an internal locus of control.

3. The greater body image disturbance in the form of size overestimation will be exhibited by anorexic subjects. The control group will show no body image disturbance.

METHOD

Subjects

The subjects for this study consisted of a sample of 30 white females who fell into three groups--anorexics, bulimics, and control subjects. The 10 anorexic and 10 bulimic subjects were obtained from various treatment centers in North Carolina, specifically from University Counseling Centers, Mental Health Centers, Medical Centers, and from private practices. Determination of anorexia nervosa and bulimia was done with reference to the DSM-III. Subjects were considered eligible to participate in this study if they were currently in treatment for anorexia nervosa or bulimia, and if they had received a DSM-III diagnosis of either of the two eating disorders at their treatment center. Further, their appropriateness for this study was confirmed by their score on the Survey of Eating Habits, indicating a disordered eating pattern. The 10 subjects who served as a control group were randomly selected from undergraduate psychology classes at Appalachian State University. All subjects were within the age range of 17 to 32 years.

Instruments

A questionnaire called the Survey of Eating Habits, the College Self-Expression Scale, the Adult Nowicki-Strickland Internal-External Scale, and the Draw-A-Person Test were administered to each subject.

Survey of eating habits. In order to assess the eating patterns of subjects, a 35 item survey was used in this study, consisting of a five-point Likert format ranging from 'Always' to 'Never'. The survey was developed by the author and a counselor at the Counseling and Psychological Services Center, Appalachian State University, in 1984 for the purpose of screening individuals for an Eating Disorders Therapy Group. Items on this survey are taken from two sources--the Eating Attitudes Test (Garner & Garfinkel, 1979), and a History of Eating Problems Questionnaire (Neuman & Halvorson, 1983). The survey items are representative of both anorexia nervosa and bulimia (see Appendix A).

College self-expression scale (CSES). The CSES is a 50 item self-report inventory developed by Galassi et al. (1974) which is designed to measure assertiveness in college students. The scale is comprised of a five-point Likert format with 21 positively worded items and 29 negatively worded items. The scale attempts to measure three aspects of assertiveness: positive, negative, and self-denial. A total score for the scale is obtained by summing all positively worded items and reverse scoring and summing all negatively worded items. Low scores are indicative of a generalized nonassertive response pattern. Norms on the CSES collected from 284 female freshman and sophomores at The University of North Carolina yielded a mean score of 124.63, SD 18.43 (Galassi et al.). Test-retest reliability coefficients on this scale are reported to be between 0.89 and 0.90 (see Appendix B).

Adult Nowicki-Strickland internal-external scale (ANSIE). The ANSIE scale was developed in 1973 by Nowicki and Strickland and consists of 40 items pertaining to internal or external locus of control, which are answered either 'yes' or 'no'. Split-half reliability coefficients are reported as ranging from 0.74 to 0.86, indicating that the test has satisfactory internal consistency. Test-retest reliability coefficients are reported to be 0.83 for college students, indicating that scores are stable over time. Norms on the ANSIE scale collected from female white college students yielded a mean score of 8.54, SD 3.37 (Duke & Nowicki, 1973). Other researchers have found similar normative scores of 8.83, SD 3.41 (Duncan, 1975), 8.59, SD 3.52 (Brennan, 1975) and 8.32, SD 3.83 (Kent, 1975) (see Appendix C).

Draw-a-person test. The Draw-A-Person Test was developed by Machover in 1949. In this test, the examinee is provided with paper and pencil and told simply to "draw a person." It is used in this context to assess body image, and the assumption is that the individual will be drawing an image of himself or herself. Scoring of the Draw-A-Person Test is essentially qualitative. Kalliopuska (1982) has used this test to assess body image disturbances in anorexic patients, and has reported that they can be easily and reliably mapped with this test (see Appendix D).

Design

This study employed a 1 x 3 factorial design. The independent variable was the presence or absence of an eating disorder with three levels employed: anorexic, bulimic, and controls. The

dependent variables included (a) scores on assertiveness from the College Self-Expression scale, (b) scores on locus of control from the Nowicki-Strickland Internal-External scale, and (c) comparison of the self-ratings of the subjects with the ratings of an independent rater on the Draw-A-Person Test, using a five-point rating scale ranging from 'obese' to 'skinny'.

Procedure

The anorexic and bulimic subjects were recruited in the following manner: Directors of different treatment centers in North Carolina were contacted, informing them of the purpose of this study and asking their permission to enlist clients from their centers as subjects. The study was approved by the Research and Ethics Committee of each treatment center from which clients participated as subjects. The questionnaires were then mailed to the primary therapist of the client, who administered them to the client with a general introduction stating that it pertained to women's issues. All other instructions were given in writing before each questionnaire. The therapist was asked to indicate whether the client was in treatment for anorexia nervosa or bulimia.

For the control group, female psychology students were recruited through sign-up sheets in the Psychology Department at Appalachian State University, designating certain meeting times and places. They were told that the study involved filling out some questionnaires that would take approximately half an hour to complete. The students were given identical instructions as the

anorexic and bulimic subjects, and were offered extra credit in their psychology course for participating in the study.

All the participants in the study signed an informed consent form (see Appendix E). They were told that all the information obtained from them would be strictly confidential and that they would be informed of the results of the study if they were interested.

For the purpose of assessing the body image of the subjects, the researcher served as a rater. Reliability of the researcher's ratings was deterined by comparing her ratings of the 30 drawings with those of another independent rater. Computation of a product-moment correlation yielded a correlation coefficient of 0.81, which was found to be satisfactory. The rater's ratings were then compared with the subjects' self-ratings.

Analysis of Data

A series of analyses of variance were used to analyze the data. One-way analyses of variance were conducted for the Survey of Eating Habits and for the dependent measures of assertiveness and locus of control. A 2 x 3 analysis of variance with repeated measures was conducted on the body image factor (Rater x Conditions). When significance was found on any of the measures, it was followed up by a *t* test to identify the location of significance.

RESULTS

Statistical analysis of the data yielded significant differences as a function of assertiveness and locus of control, and on the Survey of Eating Habits.

Frame A of Figure 1 illustrates assertiveness scores as a function of the presence or absence of an eating disorder. The graph indicates that the control group achieved a higher mean assertiveness score than bulimic or anorexic subjects, and that bulimics achieved a higher mean score than anorexics. Analysis of variance performed on this measure yielded a significant main effect for the assertiveness variable, $F(2, 27) = 7.98$, $p < .01$ (see Appendix F, Table 1). Post hoc analyses indicated that there was a significant difference in level of assertiveness between anorexic and control subjects, $t(1, 18) = 5.50$, $p < .05$, and between bulimics and controls, $t(1, 18) = 2.03$, $p < .05$. There was no significant difference between anorexic and bulimic subjects, $t(1, 18) = 1.55$, $p > .10$.

Frame B of Figure 1 illustrates locus of control scores as a function of the presence or absence of an eating disorder. The graph shows that anorexic subjects obtained the highest scores and normal subjects obtained the lowest scores. When compared to the normative score of 8.54, this suggests that the anorexics in this

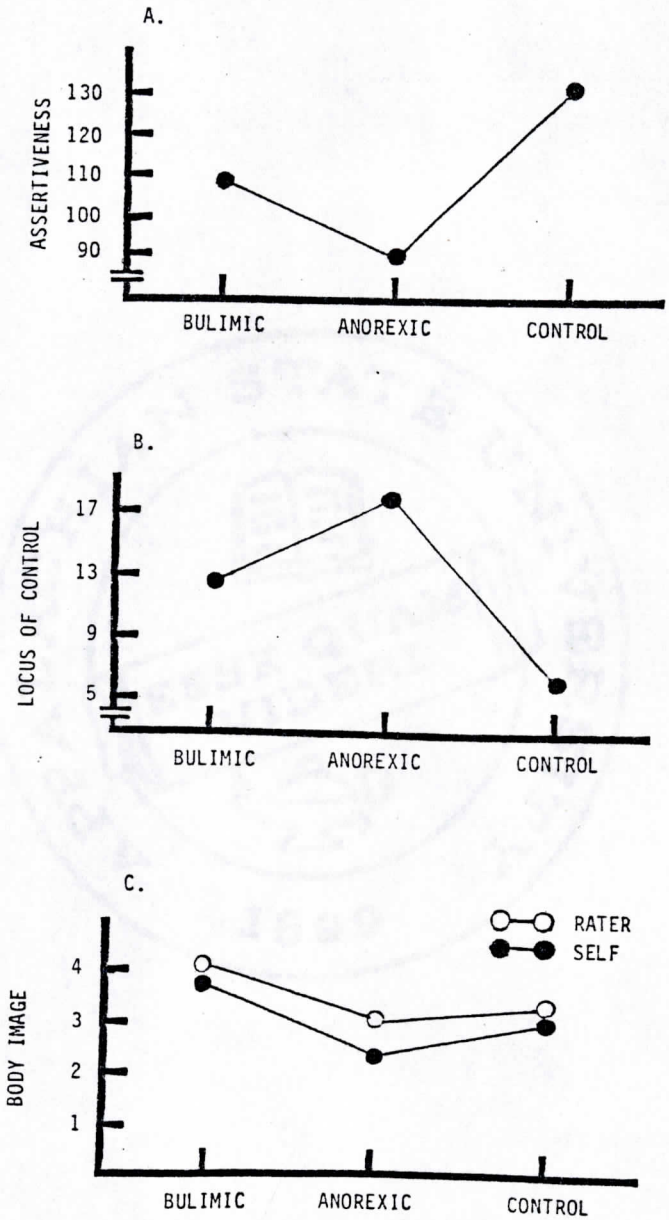

Figure 1. Mean assertiveness scores (A), locus of control scores (B), and body image ratings (C).

study had an external locus of control and the control group had an internal locus of control. Bulimic subjects obtained a mean score of 12.6, thus falling between anorexics and controls in their locus of control orientation, with a tendency toward externality. Analysis of variance performed on this measure yielded a significant main effect for the locus of control variable, $F(2, 27) = 20.14$, $p < .01$, (see Appendix F, Table 2). Results from the t test revealed a significant difference among all three groups. Anorexics were found to differ significantly from bulimics, $t(1, 18) = 2.27$, $p < .05$, bulimics differed significantly from control subjects, $t(1, 18) = 3.41$, $p < .05$, and anorexics were significantly different in their locus of control orientation than the control subjects, $t(1, 18) = 9.59$, $p < .05$.

Frame C of Figure 1 illustrates ratings of body image done by subjects in the three groups and by an independent rater, as a function of the presence of anorexia nervosa, bulimia, or no eating disorder. The graph indicates that the independent rater tended to give slightly higher ratings than the subjects in all three conditions, and that the ratings of both the rater and the subjects were the highest in the bulimic condition. This suggests that the bulimic subjects rated their drawings on an average as being more underweight compared to the other groups' ratings, and the rater's judgment tended to be in the same direction. However the 2 x 3 analysis of variance performed on this measure yielded no significant main effect nor any significant interaction. Thus there were no significant differences in the body image perception of subjects in

the three conditions, and no significant differences between the ratings of the subjects and those of the independent rater.

Analysis of variance was also done on the scores obtained by the three groups on the Survey of Eating Habits. The analysis yielded a significant main effect for the Survey of Eating Habits, $F(2, 27) = 20.12$, $p < .01$. Post hoc analyses revealed a significant difference between anorexics and controls, $t(1, 18) = 5.40$, $p < .05$, and between bulimics and controls, $t(1, 18) = 5.87$, $p < .05$. However there were no significant differences between anorexics and bulimics, $t(1, 18) = 0.44$, $p > .10$. Thus this survey was useful in distinguishing individuals with eating disorders from individuals with relatively normal eating patterns.

DISCUSSION

The central finding of this study was that individuals suffering from eating disorders tended to be less assertive and felt more controlled by external forces than a college population. This finding confirms the first two hypotheses of the study and validates the findings of former research done on the personality characteristics of assertiveness (Boskind & Sirhin, 1977; Russell, 1979; Allerdissen et al., 1981; Mitchell & Pyle, 1983; LeClair & Berkowitz, 1983; Neuman & Halvorson, 1983) and issues of control (Boskind & Sirhin; Bruch, 1978; Strober, 1982).

Specifically, this study found anorexics to be less assertive and more externally controlled than bulimics. The literature on anorexia nervosa suggests that anorexics experience a sense of limited autonomous control and are deficient in their sense of identity and self-direction (Bruch, 1977; Strober, 1982). Typically they come from families in which conformity and obedience are strictly imposed norms (Bruch, 1973). Thus one expects that they experienced limited opportunity to assert their opinions and rights as adolescents, and consequently as adults do not know how to be appropriately assertive. Similarly, their experience with parental rules and expectations would lead them to assume that they had limited control over themselves. Together with their vulnerability

to sociocultural pressures and the stresses of adolescence, one is not surprised to see that they develop a nonassertive, relatively helpless style of behavior, and strive desperately to gain control over their bodies. While bulimics are exposed to comparable psychological dynamics, their coping style of allowing themselves the "luxury" of binges followed by compensatory guilt-reducing purging apparently gives them the experience of greater flexibility than anorexics. Thus they would be less bound by their sense of helplessness and more likely to make occasional attempts at asserting themselves and feeling more in control.

The results of this study need to be interpreted with caution, first because of the small number of subjects in each group being compared, and second because of the nature of the comparisons. In this investigation, the eating disordered clients were compared with college students who were primarily freshmen and sophomores. The literature indicates that eating disorders are found to be more prevalent on college campuses. Halmi (1974) found 47% of 94 anorexic patients studied to be between 15 and 25 years of age, which encompasses the average college-going age. The National Association of Anorexia Nervosa and Associated Disorders (ANAD) estimates that between 20% and 30% of college women engage in bulimic behavior (Neuman & Halvorson, 1983). Although the subjects in the control group were screened for normal eating habits, there was no control for the possibility that they had engaged in severe dieting or binge-eating at some time. Further, we may expect that college students as a group tend to be more assertive, outspoken and likely

to have a more internal locus of control than the general population. This may account for some of the differences between the subjects with eating disorders and the control group of college students.

A further complication stems from the fact that the control group in this investigation tended to be more assertive and more internal in their locus of control than the average college student. The control group in this study achieved a mean assertiveness score of 131.4, SD 15.28, which was higher than the normative score of 124.63, SD 18.43. The control group also achieved a mean locus of control score of 5.8, SD 1.751 compared to the normative score of 8.54, SD 3.37, suggesting that they were more internally oriented than what would be expected of female college students.

With reference to the factor of body image, the present study failed to confirm the findings of previous research. Earlier findings have shown that anorexics have distorted perceptions of their bodies which acquire delusional proportions in the form of size overestimation (Bruch, 1978; Strober, 1981b). Kalliopuska (1982) found that the body images of 32 anorexics as measured by the Draw-A-Person Test were significantly more disturbed than those of a control group. In this study, the lack of significant differences among anorexics, bulimics, and control subjects in body image can again be partially accounted for by the small number of subjects. Questions can also be raised about the procedure that was employed to assess body image. Although Kalliopuska found the projective technique to be useful to map body image disturbances, perhaps a

more direct technique such as a questionnaire would have produced different results. Future research should focus on using direct questions to accurately assess body image disturbances as an outcome of eating disorders.

This investigation also served to validate the Survey of Eating Habits. Usage of the survey in this study indicated that it reliably differentiated eating disordered clients from individuals who have normal eating patterns. Thus this survey can be reliably used as a diagnostic tool in the future, both in research studies as well as in treatment centers as a screening instrument.

An observation that cannot be overlooked, made during the data collection phase of this investigation, pertains to the inaccessibility of anorexic and bulimic clients. Counselors and therapists who work with such clients are probably aware that anorexia nervosa and bulimia tend to be closeted diseases and that victims are typically reluctant to seek treatment. Most of the treatment centers that were contacted by the author of this research did not have more than one or two eating disordered clients in treatment. In view of the alarming increase in the incidence of anorexia nervosa and bulimia in the nation, this is a noteworthy observation and calls for increased attention to be focused on this issue.

In summary, the present study illustrates that anorexics and bulimics tend to be relatively nonassertive and controlled by external forces, with the anorexics being even less assertive and more externally determined in their locus of control than bulimics. This finding may have important prognostic value: one can expect

that individuals who feel more helpless and out of control would take longer to benefit from treatment of their eating disorder. Further research should examine the effect of personality characteristics of victims of eating disorders in relation to the issue of prognosis.

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APPENDIX A

Survey of Eating Habits

SURVEY OF EATING HABITS

Age _____ Current Weight _____ Height _____

Your highest _____ and lowest _____ weight during the past two years.

Please circle the appropriate number from one to five beside each statement indicating the degree to which the statement accurately reflects your true feelings and behaviors. Please be as honest as possible. All responses are confidential.

1 = Always 2 = Frequently 3 = Sometimes 4 = Seldom 5 = Never

1 2 3 4 5 (1) I consider myself as being too fat.

1 2 3 4 5 (2) My mother or my father has a weight problem.

1 2 3 4 5 (3) I am terrified of becoming overweight.

1 2 3 4 5 (4) From time to time, I rapidly eat large amounts of high calorie or high carbohydrate food.

1 2 3 4 5 (5) I avoid foods that are high in calories or sugar.

1 2 3 4 5 (6) I am concerned with how others are impressed with my appearance.

1 2 3 4 5 (7) I become anxious prior to eating.

1 2 3 4 5 (8) I fear that I might be rejected socially by a member of the other sex.

1 2 3 4 5 (9) I find myself preoccupied with food, calories, nutrition, and/or cooking.

1 2 3 4 5 (10) I have gone on eating binges where I have felt that I may not be able to stop.

1 2 3 4 5 (11) I exercise strenously to burn off calories.

1 2 3 4 5 (12) I intentionally vomit after a meal to control my weight.

1 2 3 4 5 (13) I am preoccupied with the desire to be thinner.

1 2 3 4 5 (14) I get depressed easily.

1 2 3 4 5 (15) I have strong feelings of guilt after eating.

1 2 3 4 5 (16) I value myself according to what others think of me.

1 2 3 4 5 (17) I have irregular menstrual periods.

1 2 3 4 5 (18) I feel that I am physically attractive.

1 2 3 4 5 (19) I feel that food controls my life.

1 2 3 4 5 (20) I use laxatives or diet pills to control my weight.

1 2 3 4 5 (21) I feel that others pressure me to eat.

1 2 3 4 5 (22) I have skipped meals to control my weight.

1 2 3 4 5 (23) I tend to be perfectionistic in what I do.

1 2 3 4 5 (24) I generally feel tense and anxious.

1 2 3 4 5 (25) I weigh myself several times a day.

1 2 3 4 5 (26) I have seriously thought of harming myself intentionally.

1 2 3 4 5 (27) Other people think I am too thin.

1 2 3 4 5 (28) I secretly eat or hoard my food.

1 2 3 4 5 (29) I feel ineffectual or incompetent in the things I do.

1 2 3 4 5 (30) I use alcohol or drugs to excess.

1 2 3 4 5 (31) I am not able to stay on a diet for very long.

1 2 3 4 5 (32) I snack between meals.

1 2 3 4 5 (33) Nothing seems to work when I try to lose weight.

1 2 3 4 5 (34) I tend to eat even when I am not hungry.

1 2 3 4 5 (35) I like most foods.

APPENDIX B

College Self-Expression Scale

COLLEGE SELF-EXPRESSION SCALE

The following inventory is designed to provide information about the way in which you express yourself. Please answer the questions by checking the appropriate box from 0-4 (Almost always or Always = 0; Usually = 1; Sometimes = 2; Seldom = 3; Never or rarely = 4) on the computer answer sheet. Your answer should reflect how you generally express yourself in the situation.

1. Do you ignore it when someone pushes in front of you in line?
2. When you decide that you no longer wish to date someone, do you have marked difficulty telling the person of your decision?
3. Would you exchange a purchase you discover to be faulty?
4. If you decide to change your major to a field which your parents will not approve, would you have difficulty telling them?
5. Are you inclined to be over-apologetic?
6. If you were studying and if your roommate were making too much noise, would you ask her/him to stop?
7. Is it difficult for you to compliment and praise others?
8. If you are angry at your parents, can you tell them?
9. Do you insist that your roommate does her/his fair share of the cleaning?
10. If you find yourself becoming fond of someone you are dating, would you have difficulty expressing these feelings to that person?

11. If a friend who has borrowed $5 from you seems to have forgotten about it, would you remind this person?
12. Are you overly careful to avoid hurting other people's feelings?
13. If you have a close friend whom your parents dislike and constantly criticize, would you inform your parents that you disagree with them and tell them of your friend's assets?
14. Do you find it difficult to ask a friend to do a favor for you?
15. If food which is not to your satisfaction is served in a restaurant, would you complain about it to the waiter?
16. If your roommate without your permission eats food that she/he knows you have been saving, can you express your displeasure to her/him?
17. If a salesman has gone to considerable trouble to show you some merchandise which is not quite suitable, do you have difficulty saying no?
18. Do you keep your opinions to yourself?
19. If friends visit when you want to study, do you ask them to return at a more convenient time?
20. Are you able to express love and affection to people for whom you care?
21. If you were in a small seminar and the professor made a statement that you consider untrue, would you question it?

22. If a person of the opposite sex whom you have been wanting to meet smiles or directs attention to you at a party, would you take the initiative in beginning a conversation?
23. If someone you respect expressed opinions with which you strongly disagree, would you venture to state your own point of view?
24. Do you go out of your way to avoid trouble with other people?
25. If a friend is wearing a new outfit which you like, do you tell that person so?
26. If after leaving a store you realize that you have been "shortchanged," do you go back and request the correct amount?
27. If a friend makes what you consider to be an unreasonable request, are you able to refuse?
28. If a close and respected relative were annoying you, would you hide your feelings rather than express your annoyance?
29. If your parents want you to come home for a weekend but you have made important plans, would you tell them of your preference?
30. Do you express anger or annoyance toward the opposite sex when it is justified?
31. If a friend does an errand for you, do you tell that person how much you appreciate it?
32. Do you avoid social contacts for fear of doing or saying the wrong things?
33. When a person is blatantly unfair, do you fail to say something about it to him/her?

34. If a friend betrays your confidence, would you hesitate to express annoyance to that person?
35. When a clerk in a store waits on someone who has come in after you, do you call his attention to the matter?
36. If you are particularly happy about someone's good fortune, can you express this to that person?
37. Would you be hesitant to ask a good friend to lend you a few dollars?
38. If a person teases you to the point that it is no longer fun, do you have difficulty expressing your displeasure?
39. If you arrive late for a meeting, would you rather stand than go to a front seat which could only be secured with a fair degree of conspicuousness?
40. If your date calls on Saturday night 15 minutes before you are supposed to meet and says that he/she has to study for an important exam and cannot make it, would you express your annoyance?
41. If someone keeps kicking the back of your chair in a movie, would you ask that person to stop?
42. If someone interrupts you in the middle of an important conversation, do you request that person to wait until you have finished?
43. Do you freely volunteer information or opinions in class discussions?
44. Are you reluctant to speak to an attractive acquaintance of the opposite sex?

45. If you lived in an apartment and the landlord failed to make certain necessary repairs after promising to do so, would you insist on it?
46. If your parents want you home by a certain time which you feel is much too early and unreasonable, do you attempt to discuss or negotiate this with them?
47. Do you find it difficult to stand up to your rights?
48. If a friend unjustifiably criticizes you, do you express your resentment there and then?
49. Do you express your feelings to others?
50. Do you avoid asking questions in class for fear of feeling self-conscious?

APPENDIX C

Adult Nowicki-Strickland Internal-External Scale

ADULT NOWICKI-STRICKLAND INTERNAL-EXTERNAL SCALE

YES NO

___ ___ 1. Do you believe that most problems will solve themselves if you just don't fool with them?

___ ___ 2. Do you believe that you can stop yourself from catching a cold?

___ ___ 3. Are some people just born lucky?

___ ___ 4. Most of the time do you feel that getting good grades means a great deal to you?

___ ___ 5. Are you often blamed for things that just aren't your fault?

___ ___ 6. Do you believe that if somebody studies hard enough he or she can pass any subject?

___ ___ 7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?

___ ___ 8. Do you feel that if things start out well in the morning that it is going to be a good day no matter what you do?

___ ___ 9. Do you feel that most of the time parents listen to what their children have to say?

___ ___ 10. Do you believe that wishing can make good things happen?

___ ___ 11. When you get criticized, does it usually seem its for no good reason at all?

YES NO

___ ___ 12. Most of the time do you find it hard to change a friend's (mind) opinion?

___ ___ 13. Do you think that cheering more than luck helps a team to win?

___ ___ 14. Did you feel that it was nearly impossible to change your parents' mind about anything?

___ ___ 15. Do you believe that parents should allow children to make most of their own decisions?

___ ___ 16. Do you feel that when you do something wrong there's very little you can do to make it right?

___ ___ 17. Do you believe that most people are just born good at sports?

___ ___ 18. Are most of the other people your age and sex stronger than you are?

___ ___ 19. Do you feel that one of the best ways to handle most problems is just not to think of them?

___ ___ 20. Do you feel that you have a lot of choice in deciding whom your friends are?

___ ___ 21. If you find a four leaf clover, do you believe that it might bring good luck?

___ ___ 22. Did you often feel that whether or not you do your homework has much to do with what kind of grades you get?

___ ___ 23. Do you feel that when a person your age is angry at you, there is little you can do to stop him or her?

YES NO

___ ___ 24. Have you ever had a good luck charm?

___ ___ 25. Do you believe that whether or not people like you depends on how you act?

___ ___ 26. Did your parents usually help you if you asked them to?

___ ___ 27. Have you ever felt that when people were angry with you, it was usually for no reason at all?

___ ___ 28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today?

___ ___ 29. Do you believe that when bad things are going to happen, they just are going to happen no matter what you try to do to stop them?

___ ___ 30. Do you think that people can get their own way if they just keep trying?

___ ___ 31. Most of the time do you find it useless to try to get your own way at home?

___ ___ 32. Do you feel that when good things happen, they happen because of hard work?

___ ___ 33. Do you feel that when somebody your age wants to be your enemy, there's little you can do to change matters?

___ ___ 34. Do you feel that it is easy to get friends to do what you want them to do?

___ ___ 35. Do you usually feel that you have little to say about what you get to eat at home?

YES NO

___ ___ 36. Do you feel that when someone doesn't like you, there's little you can do about it?

___ ___ 37. Do you usually feel that it was almost useless to try in school because most other students are just plain smarter than you are?

___ ___ 38. Are you the kind of person who believes that planning ahead makes things turn out better?

___ ___ 39. Most of the time, do you feel that you have little to say about what your family decides to do?

___ ___ 40. Do you think it's better to be smart than to be lucky?

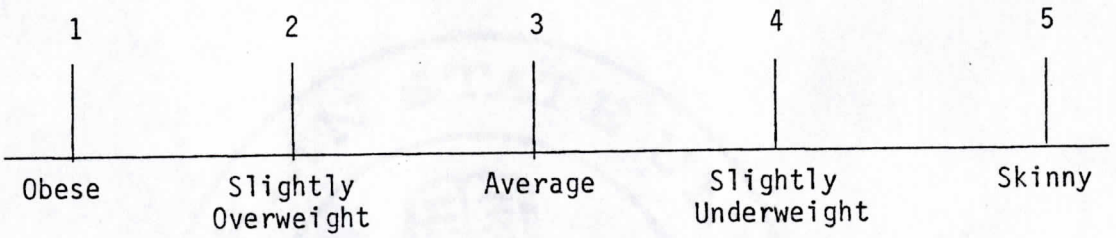
APPENDIX D

Draw-A-Person Test

DRAW-A-PERSON TEST

On this sheet of paper, please draw a person. (The drawing is NOT being evaluated for artistic quality.)

Please rate your drawing of a person using this scale, by circling the appropriate number;



APPENDIX E

Informed Consent Form

INFORMED CONSENT FORM

I hereby agree to participate in a research study conducted by Radhika Krishnamurthy, and permit information from the questionnaires that I will fill out for the study to be released to her.

I understand that there will be no risk or discomfort from participating in this study. However, if I would like to quit at any time for any reason, I realize that I may do so.

I understand that all information gained from me through participating in this study will be kept in the strictest confidence, and my name will not be mentioned anywhere in the study.

Finally, I realize that I am free to ask any questions concerning the procedure of this study, and they will be answered by the researcher.

_____
Name

_____
Date

APPENDIX F

Tables

Table 1

Analysis of Variance for the Assertiveness Scale as a Function of Bulimia, Anorexia, and Normal Eating Patterns

Source	Df	MS	F
Between Groups	2	4241	7.98***
Within Groups	27	532	-
Total	29	-	-

***Significant at the .01 level.

Means and Standard Deviations

Conditions	Mean	Standard Deviation
Bulimic	108.5	32.23
Anorexic	90.3	17.98
Normal	131.4	15.28

Table 2

Analysis of Variance for the Locus of Control Scale as a Function of Bulimia, Anorexia, and Normal Eating Patterns

Source	Df	MS	F
Between Groups	2	350.8	20.14***
Within Groups	27	17.4	-
Total	29	-	-

***Significant at the .01 level.

Means and Standard Deviations

Conditions	Mean	Standard Deviation
Bulimic	12.6	6.077
Anorexic	17.6	3.502
Normal	5.8	1.751

Table 3

ANOVA Summary Table for the Body Image Factor as a Function of Ratings of Bulimic, Anorexic, and Normal Subjects Compared With Independent Rater

Source	Df	MS	F
Between Subjects	29	-	-
Groups	2	6.65	5.23
Error	27	1.27	-
Within Subjects	30	-	-
Rater	1	2.4	-
Rater x Group	2	.45	10
Error	27	.24	1.87
Total	59	-	-

Means and Standard Deviations

	Self		Rater	
Conditions	$\bar{X}$	SD	$\bar{X}$	SD
Bulimic	3.7	1.42	4.0	1.15
Anorexic	2.3	0.81	3.0	0.44
Normal	3.1	0.31	3.2	0.41

Table 4

Analysis of Variance for the Survey of Eating Habits as a Function of Bulimic, Anorexic, and Normal Eating Patterns

Source	Df	MS	F
Between Groups	2	3464	20.12***
Within Groups	27	172	-
Total	29	-	-

***Significant at the .01 level.

Means and Standard Deviations

Conditions	Mean	Standard Deviation
Bulimic	86.3	13.6
Anorexic	89.0	13.4
Normal	119.8	12.2

Table 5

Descriptive Data on Anorexic, Bulimic, and Normal Subjects

Subjects	$\bar{X}$ Age	$\bar{X}$ Height	$\bar{X}$ Weight	Highest Weight in Two Years	Lowest Weight in Two Years
Bulimic	22.2	5'5"	131.3	150.5	115.8
Anorexic	23.2	5'3"	98.3	119.2	86.5
Normal	18.7	5'4"	130.9	136.4	121.4

VITA

Radhika Krishnamurthy was born on December 16, 1961 in Bombay, India. She attended elementary and high schools in Bombay and received her Bachelor of Arts degree in psychology from Bombay University in February, 1983.

Radhika came to the United States for graduate study in Clinical Psychology at Appalachian State University in August, 1982. She has worked as a graduate assistant in the psychology department and as a part-time student employee at the Counseling and Psychological Services Center. She was the recipient of an Alumni Scholarship for the 1983-84 academic year. Radhika completed her clinical internship at New River Mental Health Center in Boone, North Carolina and plans to graduate in May, 1986. Radhika's permanent address is:

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