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The Degree of Eating Disorder Pathology
and its Relation to Depression and Self-Esteem
in a Nonclinical College Student Population

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Abstract

Research on eating disorders has mainly focused on clinical populations and adolescents. In this study, a nonclinical sample comprised of female college students was studied. The relationship between eating disorder symptomatology and the variables of depression and self-esteem were examined using the following measures: (1) The Eating Disorders Inventory-2; (2) The Beck Depression Inventory; and (3) The Multidimensional Self-Esteem Inventory. A total of fifty-six subjects were studied. It was hypothesized that those subjects who scored higher overall on the EDI-2 would exhibit higher levels of depression and lower levels of self-esteem than those who scored lower overall on the EDI-2. It was also hypothesized that those subjects who scored high on specific subscales of the EDI-2 would exhibit higher levels of depression and lower levels of self-esteem than those who scored lower overall on the EDI-2. Primary analyses on these hypotheses revealed significantly higher levels of depression and lower levels of self-esteem in subjects scoring in the upper third versus subjects scoring in the lower third of the EDI-2; all of the hypotheses were supported. Secondary analyses confirmed that these differences were not significantly confounded by demographic variables such as age, year in school or socio-economic status. The results of this study indicate that psychological attributes commonly associated with clinically diagnosed patients also apply to nonclinical female college students who exhibit subclinical characteristics of eating disorders.

**The Degree of Eating Disorder Pathology
and its Relation to Depression and Self-Esteem in a
Nonclinical College Student Population**

Clinicians and researchers have, over the past years, been intrigued by the frequent association between psychological disturbances and eating abnormalities in eating disorder patients (Leung and Steiger, 1991). Further evidence links eating disorders seen in clinics with relatively severe character disturbances and interpersonal problems (Piran, Lerner, Garfinkel, Kennedy, & Brouillette, 1988). In such clinical populations, however, the question remains as to whether the effects of chronic illnesses and malnutrition confound specific psychological traits associated with eating disturbances. As Aronson, Fredman and Gabriel (1990) note, authors have seldom attempted to theorize or investigate relationships in nonclinical populations. Studying a nonclinical population offers the advantage of avoiding any confounding impacts of a clinical eating disorder on psychological functioning. In the present study, the relationship between the degree of eating disorder symptomatology and the personality characteristics of depression and self-esteem was examined in a nonclinical college student population.

Prevalence and Diagnosis of Eating Disorders

Eating disorders have apparently become more prevalent in the United States over the past two decades (Drewnowski, Yee, & Krahm, 1988). Anorexia nervosa and bulimia nervosa may occur in as many as 1% to 4% of female high school and college students (Drewnowski et al., 1988). According to Abraham & Llewellyn-Jones (1987), anorexia nervosa affects females fifteen-times more commonly than males and usually begins during adolescence or in early adulthood. The illness affects one teenager in every 200, reaching a peak incidence of one in 100 among adolescents between 16 and 18 (Abraham & Llewellyn-Jones, 1987). The prevalence of bulimia in the community as a whole is apparently unknown, but the illness affects between 3% and 7% of women aged between 15 and 35 (Abraham & Llewellyn-Jones, 1987). It should also be noted that the true prevalence may be higher as only those women who seek medical help are identifiable.

The Diagnostic and Statistical Manual of Mental Disorders (DSM III-R) is a manual used nationally by clinicians to diagnose mental disorders (American Psychiatric Association, 1987). The DSM III-R recognizes and defines two main subclasses of eating disorders.

Anorexia nervosa is characterized by the following criteria:

- 1) Refusal to maintain body weight over a minimal normal weight for age and height, e.g., weight loss leading to maintenance of body weight 15% below that expected; or failure to make expected weight gain during a period of growth, leading to body weight 15% below that expected.

2) Intense fear of gaining weight or becoming fat, even though underweight.

3) Disturbance in the way in which one's body weight, size, or shape is experienced, e.g., the person claims to "feel fat" even when emaciated, believes that one area of the body is "too fat" even when obviously underweight.

4) In females, absence of at least three consecutive menstrual cycles when otherwise expected to occur (primary or secondary amenorrhea). (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen administration) (American Psychiatric Association, 1987).

Bulimia nervosa is characterized by the following criteria:

1) Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).

2) A feeling of lack of control over eating behavior during the eating binges.

3) The person regularly engages in either self induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.

4) A minimum average of two binge eating episodes a week for at least three months.

5) Persistent overconcern with body shape and weight (American Psychiatric Association, 1987).

Literature Review

The clinical literature shows that depressive symptoms are common among anorexic patients at the time of initial clinical assessment (Russell, 1979; Hendren, 1983; Piazza, Rollins, & Lewis, 1983). The bulimia literature is limited in scope and size, but the few studies that commented on depression found it frequently present (Herzog, 1984; Hudson, Pope, Jonas, et al., 1983).

It appears that Hendren (1983) conducted one of the first studies using formal diagnostic criteria to ascertain the presence of affective disorder in a population of anorexic patients. Hendren retrospectively reviewed the case histories of 84 patients with anorexia nervosa at hospital admission and found that 56% met Research Diagnostic Criteria (RDC) for major depressive disorder and 35% for endogenous depression. He interpreted the data to indicate that anorexia nervosa and major depressive disorder may coexist in about half of the patients. Hendren (1983) also found no significant correlation between depression and the mean percent of weight loss which suggested to him that the depression was due to factors other than malnutrition.

An additional study used a State of Mind questionnaire (SOM) to investigate the relationship between depression and anorexia nervosa (Piazza, Rollins, & Lewis, 1983). The SOM questionnaire includes an anorexia scale and the Beck Depression Inventory (BDI). The SOM was administered to 42 hospitalized patients, 30 patients who were two years post-hospitalization and four normal control groups. The control groups included: 1) a fine arts camp for girls; 2) an equestrian camp for girls; 3) college and graduate female and

male students in a nutrition course; and 4) ninth grade public high school boys and girls. One important and relevant finding from this study is the strong correlation between depression (as measured by the BDI) and the Anorexia score. The correlation for the 42 patients was .78 while the correlation for the 269 controls was .53, both at a significance level of .001. These overall findings of the close relationship between depression and other major features of anorexia nervosa corroborate previous clinical impressions. Piazza et al. (1983) conclude that body image distortions and feelings of inadequacy lead to depression.

The limited research on the psychological characteristics of patients with bulimia has indicated high rates of affective syndromes among bulimic patients (Herzog, 1984; Hudson, Pope, Jonas, et al., 1983). These results have prompted some investigators to hypothesize a link between bulimia and major affective disorders such as depression.

Russell (1979) published the first exacting clinical description of bulimia or bulimia nervosa as he called it. From his study of 30 female bulimic patients, he concluded that, aside from preoccupations directly concerned with eating and weight, depressive symptoms were the most prominent feature of the disorder. On the basis of clinical impression, 26 of the 30 patients were judged to be at least moderately depressed.

To further investigate the nature of affective disturbances in bulimia, Hudson, Pope, Yurgelum-Todd, Jonas, & Frankenburg (1987) administered structured diagnostic interviews to two groups of bulimic women: 57 bulimic patients who were referred for

treatment and 19 women with remitted bulimia who were not seeking treatment. As a comparison group they evaluated 28 women from a nonpsychiatric control group. The results showed that the bulimic patients had significantly higher rates of major depression. The lifetime prevalence of major depression in bulimic patients was 59%, while the prevalence in the control group was only 29%. The prevalence in the remitted bulimics was 47%. Furthermore the control group had 0% currently diagnosable with any major affective disorder including depression. Hudson et al. (1987) indicate that these results suggest that the high prevalence of major depression in bulimic individuals may not be confined to those seeking treatment. It should be noted, however, that although only one of the 19 remitted bulimic subjects was currently in treatment, 84% of them reported at least one contact with a mental health professional. Therefore, this remitted sample may not be accurately representative of bulimic individuals who have never sought treatment.

While it is clear that mood disturbances are frequently found in eating disorder patients, most existing studies compare eating disorder patients with normal populations using a potentially misleading retrospective design (Cantwell, D.P. Sturzenburger S., Burroughs, J., Salkin, B., and Green, J.K., 1977; Hudson, J.I., Pope, H.G., Jonas, J.M. et al., 1983). These designs may be confounded by the limits in subjects' accuracy as historians.

Leung and Steiger (1991) explored the causal relation between depressive symptoms and eating abnormalities in a nonclinical population. This study included 684 high school girls whose ages

ranged from 13 to 17. Mood disturbances were assessed using an 8-item scale which Leung and Steiger (1991) created themselves. Eating abnormalities were assessed using the Eating Attitudes Test (EAT-26). The results of this study indicated that a moderate but stable association exists between depressive symptoms and eating abnormalities in this nonclinical sample. Specifically, synchronous correlations revealed a .42 rate between mood and eating disturbances. However, the findings from this study reveal no predominant causal sequence between depressive symptoms and eating abnormalities. Leung and Steiger (1991) note that additional research, using more refined measures of mood disturbances and eating abnormalities, and different subgroups is needed to clarify the nature of the relationship between these variables.

Although an abundance of research supports the association between depression and eating disorders in a clinical population, a number of studies have also investigated the relationship between self-esteem and eating disorders. Literature on eating disorders frequently suggests that women who develop such disorders often exhibit low levels of self-esteem (Dykens & Gerrard, 1986; Katzman & Wolchik, 1984; and Goldfarb, Dykens, & Gerrard, 1985). However, relatively few studies have examined this relationship between eating disorder symptomatology and self-esteem. Furthermore, rarely have the personality characteristics of bulimics and controls been contrasted (Katzman & Wolchik, 1984).

In one study, several factors that have been implicated in the onset of bulimia were compared across three groups: 1) women who fulfilled the DSM III criteria for bulimia, 2) women who reported

binge eating but did not fulfill all of the DSM III criteria, and 3) a control group of women who did not binge eat (Katzman & Walchik, 1984). On the Rosenberg Self-Esteem Index, the bulimics exhibited lower self-esteem than binge eaters and controls ($p < .05$). The mean score for bulimics was 26.63 while the binge eaters scored 20.23 and the controls had a mean score of 17.96. (High scores on the Self-Esteem scale represent self-esteem deficits.)

In another study, binge eaters and purgers who met the DSM III criteria for bulimia were compared with two nonbulimic groups drawn from the same subject pool (Dykens & Gerrard, 1986). The first comparison group consisted of women who reported feeling dissatisfied with their weight and engaged in repeated dieting attempts, but not bulimic behavior. The second comparison group consisted of women who reported feeling satisfied with their weight and not dieting within the last year. A step-wise discriminant function analysis confirmed the importance of self-esteem in discriminating between groups (Dykens & Gerrard, 1986). The MANOVA of the self-esteem measures was significant at $p < .01$, with the Acceptance, Physical Self-Esteem and Variability subscales of the Tennessee Self-Concept Scale accounting for most of the variance. Thus, this study provides further support for the relationship between bulimia and self-esteem.

In summary, relatively few studies have investigated eating disorder symptomatology and its relationship to depression and self-esteem. Most of the existing studies have used a retrospective design with clinical populations which may not be accurate due to their reliance on the ability of the subjects to recall past experiences.

Furthermore, many of these studies investigated adolescent populations and not college students. Nevertheless, all of these studies indicate a relationship between eating disorders and the variables of depression and self-esteem. It is evident that a greater range of studies with more refined measures such as the Beck Depression Inventory and the Eating Disorders Inventory-2 are needed to further clarify the nature of this relationship. The EDI-2 is a new, updated and expanded measure which could reconcile some of the problems with earlier studies.

Objectives and Rationale of This Study

The primary goal of this study was to determine if differences in levels of depression and self-esteem exist between two levels of symptomatology of eating disorders (upper third and lower third) among nonclinical female college students. The objectives of this study were:

1. To determine if levels of depression vary based on the overall degree of eating disorder symptomatology in female undergraduates.
2. To determine if levels of self-esteem vary based on the overall degree of eating disorder symptomatology in female undergraduates.

3. To determine if female undergraduates who placed in the upper third of the sample on the Bulimia subscale of the EDI-2 exhibited greater symptoms of depression on BDI than those who scored in the lower third of the sample.
4. To determine if female undergraduates who placed in the upper third of the sample on the Body Dissatisfaction subscale of the EDI-2 exhibited lower levels of self-esteem than those who placed in the lower third of the sample.
5. To determine if female undergraduates who placed in the upper third of the sample on the Drive for Thinness subscale of the EDI-2 exhibited lower levels of self-esteem than those who place in the lower third of the sample.

The rationale for this study was based upon the following:

1. More general information is needed about the relationship between psychological problems and eating disorder symptomatology in nonclinical college populations. Much of the research that has looked at normal populations has primarily focused on adolescents.
2. The Eating Disorder Inventory-2 is a new measure which is more precise and has better norms than the old

version. The new measure also contains new subscales and is more applicable for normal populations. This measure was used in the present study.

3. Few studies have directly examined differences in psychological characteristics between those with high and low scores on the Bulimia subscale in nonclinical populations. This study looked at these differences.
4. Few studies have examined differences in self-esteem between high and low scores of the Body Dissatisfaction subscale or the Drive for Thinness subscale with nonclinical subjects. This study looked at these differences.

Hypotheses

1. Undergraduate women who exhibited higher symptomatology of eating disorders overall on the EDI-2 would show higher levels of depression on the BDI than women who did not exhibit high symptomatology of eating disorders. High and low symptomatology were defined as those subjects who placed in the upper one third and the lower one third of the sample respectively.
2. a.) Undergraduate women who exhibited higher symptomatology of eating disorders overall on the

EDI-2 would show lower levels of self-esteem on the Global Self-Esteem subscale of the MSEI than women who exhibited low symptomatology of eating disorders.

High symptomatology was defined as those subjects who placed in the upper third of the sample while low symptomatology was defined as those subjects who scored in the lower third of the sample.

b.) Undergraduate women who exhibited higher symptomatology of eating disorders overall on the EDI-2 would show lower levels of self-esteem on the Body Appearance subscale of the MSEI than women who had low symptomatology of eating disorders. High symptomatology was defined as those subjects who placed in the upper third of the sample while low symptomatology was defined as those subjects who scored in the lower third of the sample.

3. Subjects who scored in the upper third of the sample on the bulimia subscale of the EDI-2 would exhibit greater symptoms of depression on the BDI than those who scored in the lower third of the sample.
4. Since anorexics tend to show high levels of body dissatisfaction, it was hypothesized that those subjects who scored in the upper third of the sample on the Body Dissatisfaction subscale of the EDI-2 would exhibit

lower levels of self-esteem on the Global Self-Esteem subscale of the MSEI than those who scored in the lower third of the sample.

5. Since anorexics tend to show tendencies for weight loss attempts, it was hypothesized that those subjects who scored in the upper third of the sample on the Drive for Thinness subscale of the EDI-2, would exhibit lower levels of self-esteem on the Global Self-Esteem subscale of the MSEI than those who scored in the lower third of the sample.

Methods

Subjects

Fifty-six female college students from Illinois Wesleyan University, who were recruited through announcements in a variety of courses, were studied. The ages of these students ranged from 18 to 22 years with a mean age of 19.38. Thirty-five percent were freshmen, 32% sophomores, 20% juniors and 13% seniors. The sample was heavily weighted with 94% caucasians, which is reflective of the student population at Illinois Wesleyan. The other 6% consisted of subjects with Asian ethnicity. The mean educational level for the subjects' mothers was that of an associates degree, while the mean educational level for fathers was a bachelors degree. Using the Hollingshead scale for socio-economic status, which spans SES levels from one (lowest) to nine (highest), the mean level for mothers

was 5.7 and the mean level for fathers was seven. Forty-five percent of the subjects indicated they belonged to a sorority house. Four subjects indicated they had been diagnosed with an eating disorder in the past and four subjects indicated that they were currently in treatment for another psychological disorder. These subjects were included in the analyses because a chi-square test indicated that there was no relationship of diagnosis to symptomatology group.

Procedure

Informed consent was obtained from all students who volunteered to participate in this study. The subjects first completed an information questionnaire. Subjects next completed the Eating Disorders Inventory-2 (EDI-2), the Beck Depression Inventory (BDI), and the Multidimensional Self-Esteem Inventory (MSEI). Each of these measures is described below in the measures section. The total time for completing these measures was approximately one hour. Any subjects who were upset by any aspect of the study would have been debriefed and given appropriate referrals; however none indicated that they were upset. If subjects scored in the clinical range on either the EDI-2 or the BDI, they were contacted, informed of this and appropriate referrals were be made.

Measures

The information questionnaire was the first measure administered to the subjects (see Appendix). This questionnaire was

used to record characteristics such as age, year in school, ethnicity, parents' occupations, and parents' educational level.

The MSEI (O'Brien & Epstein, 1988) is a 116-item, self-report instrument designed to measure components of self-esteem among college students in the United States. The MSEI consists of 11 scales, two of which are global measures of self-evaluation and self-concept, eight are intermediate level scales, and the final scale is a validity check on the extent to which the test-taker is "defensively inflating his or her self-representation." Each of the 116 questions is evaluated on a five-point Likert scale. The MSEI was developed, normed, and validated in a series of seven separate studies. Subjects in all studies were undergraduate college students. Internal consistency measures of reliability ranged from .78 to .90 while test-retest stability correlations over a one-month period ranged from a low of .78 to a high of .89. A number of validation studies supported a high level of convergent and discriminant validity of the MSEI construct relative to other measures of self-esteem.

The BDI (Beck, Steer, & Garbin, 1988) is probably the most widely used clinical self-report measure of depression. The BDI consists of 21 items or statements answered on a 0 to 3 scale of severity of depressive problems. The test can usually be completed in 5 to 10 minutes. Typically, only the total score is used. In the manual, Beck suggests general guidelines with patients: zero to nine are within the normal range; 10 to 18, mild to moderate depression; 19-29, moderate to severe depression; and 30 and above, extremely severe depression. Extensive norms for the BDI were established from six normative samples. Test-retest reliability ranged from .48

to .90 while internal consistency ratings ranged from .81 to .88. A number of content, construct, concurrent, and factorial validity studies indicate that the BDI serves as an excellent indicator of the extent of depression.

The Eating Disorders Inventory-2 (Garner, 1991) is a widely used self-report measure of symptoms commonly associated with anorexia nervosa and bulimia nervosa. It is an easily administered measure that provides standardized subscale scores on eight dimensions that are clinically relevant to eating disorders. The new EDI-2 also contains three new constructs which compose additional subscales. The current EDI-2 adds 27 additional items to the original set of 64. The EDI-2 can usually be completed in less than 20 minutes. The EDI-2 contains norms for both an eating disorder sample and for various groups of nonpatient college students. Internal consistency and test-retest reliability were consistently high in both clinical and nonclinical samples (Garner, 1991). Studies on the EDI-2 indicate high levels of content, criterion-related, concurrent, and construct validity.

Results

The mean scores for the EDI-2 total, Drive for Thinness, Bulimia, and Body Dissatisfaction subscales all fell within the normal range as stated by Garner in the professional manual for the EDI-2. The mean score on the Beck Depression Inventory was 10.2 with a standard deviation of 8.9 which indicates an overall low level of depressive responses. The MSEI subscales of Global Self-Esteem and

Body Appearance also had overall mean scores which fell within the normal range for college students. The means were 51 (S.D. of 11) and 46 (S.D. of 12) respectively.

The first hypothesis, which predicted that subjects in the top third based on EDI-2 total scores would exhibit higher levels of depression on the BDI than those in the lower third, was supported by the data from this study. A t-test revealed significant differences between the two groups. The mean score on the BDI for group one was 4.9 with a S.D. of 3.8, while the mean score for group two was 10.4 with a S.D. of 10.3 ($t = -5.19, p < .0001$).

Insert Figure 1 about here

The first part of hypothesis two predicted that those subjects who scored in the upper third on the EDI-2 total would show lower levels of self-esteem on the Global subscale of the MSEI than those who scored in the lower third. A t-test, which supported this prediction, revealed significant differences between the two groups. The mean score on the MSEI Global subscale for group one was 58.6 with S.D. of 8.2 while the mean score for group two was 41.4 with a S.D. of 9.1 ($t = 6.22, p < .0001$).

Insert Figure 2 about here

The second part of hypothesis two predicted that those subjects who scored in the upper third on the EDI-2 total would show lower levels of self-esteem on the Body Appearance subscale of the MSEI

than those who scored in the lower third. A t-test, which supported this prediction, revealed significant differences between the two groups. The mean score on the MSEI Body Appearance subscale for group one was 56.8 with a S.D. of 8.6, while the mean score for group two was 33.8 with a S.D. of 8.0 ($t=8.72$, $p < .0001$).

Insert Figure 3 about here

The third hypothesis, which predicted that subjects who scored in the upper third of the sample on the Bulimia subscale of the EDI-2 would exhibit higher levels of depression on the BDI than those in the lower third, was also supported by the data from this study. A t-test revealed significant differences between the two groups. The mean score on the BDI for group one was 7.5 with a S.D. of 6.8, while the mean score for group two was 16.1 with a S.D. of 11.4 ($t=-2.72$, $p < .01$).

Insert Figure 4 about here

The fourth hypothesis predicted that subjects who scored in the upper third of the sample on the Body-Dissatisfaction subscale of the EDI-2 would exhibit lower levels of self-esteem on the Global Self-Esteem subscale of the MSEI than those subjects who scored in the lower third. A t-test, which supported this hypothesis, revealed significant differences between the two groups. The mean score on the MSEI Global subscale for group one was 57.2 with a S.D. of 8.4,

while the mean score for group two was 44.8 with a S.D. of 11.7 ($t=3.77$, $p < .001$).

Insert Figure 5 about here

The fifth and final hypothesis predicted that subjects who scored in the upper third of the sample on the Drive for Thinness subscale of the EDI-2 would exhibit lower levels of self-esteem on the Global subscale of the MSEI than subjects who scored in the lower third on the Drive for Thinness subscale. A t-test supporting this hypothesis revealed significant differences between the two groups. The mean score on the MSEI Global subscale for group one was 57.4 with a S.D. of 8.6 while the mean score for group two was 45.2 with a S.D. of 10.1 ($t= 4.09$, $p < .0001$).

Insert Figure 6 about here

In order to control for confounding effects of demographic variables, t-tests and chi squares were performed on all relevant demographic variables comparing the upper third to the lower third for variables tested in hypotheses. Age and year in school were the only variables in which significance was observed. Age was significantly related to bulimia scores, with younger students exhibiting a trend toward higher scores. An ANOVA revealed that year in school was significantly related to Body Dissatisfaction and Drive for Thinness groups ($F= 2.88$, $p < .044$). Underclass students exhibited a trend toward more body dissatisfaction and a higher

drive for thinness. However, a follow-up Tukey-b procedure was performed and no two groups were significantly different at the .05 level. When an analysis of covariance was performed to partial out age, there was still a main effect of bulimia on BDI scores ($F=4.24$, $p < .048$). When an analysis of covariance was performed to partial out year in school there was still a main effect of Body Dissatisfaction on MSEI Global Self-Esteem subscale scores ($F=10.7$, $p < .002$). When an analysis of covariance was performed to partial out year in school, there was still a main effect of Drive for Thinness on MSEI Global Self-Esteem subscale scores ($F=12.8$, $p < .001$).

Discussion

The results of this study indicate a clear association between eating disorder symptomatology and the psychological components of depression and self-esteem in a nonclinical female college student population. This finding confirms previous evidence concerning the strength of association between mood disturbances and eating pathology in Eating Disordered patients (Cantwell et al., 1977; Hudson et al., 1983). This finding also confirms previous evidence concerning the association between self-esteem and eating pathology (Dykens & Gerrard, 1986; Katzman & Wolchik, 1984; and Goldfarb et al., 1985). This report also adds to the list of studies on "normals". It appears that eating habits and attitudes may be more meaningful aspects of personality than previously suspected.

A strength of this study is the use of more refined measures, such as the BDI and the EDI-2, than have been used in the past.

Another strength of this study is that the measures record current functioning rather than ask subjects to recall information retrospectively.

A potential weakness of this study is that the sample may not be representative of female college students. First, the subjects in this study came from relatively high socio-economic backgrounds. Furthermore, 94% of the subjects were of caucasian ethnicity.

Nevertheless, the current study lends support to the association between eating pathology and the psychological components of depression and self-esteem. The exact nature of the relationship between eating pathology and the psychological components of depression and self-esteem is, however, uncertain. One possibility is that these psychological disturbances predispose or contribute to the emergence of an eating disorder. On the other hand, such psychological disturbances may be a result of a tendency toward eating pathology. Despite these uncertainties, the present study represents a small step toward understanding the relation between eating disorders and both self-esteem and depression.

Future studies using a larger and more diverse subject pool may help clarify the nature of this relationship. In addition, research comparing nonclinical as well as clinical populations in various stages of severity of eating disorder pathology may be helpful in identifying the exact nature of the relationship between these variables.

The implications of this study, however, go further than simply attempting to define the relationship between eating disorder symptomatology and psychological components. The findings from this study indicate that in treating eating disorders or preventing them, it may be important to focus more on enhancing one's self esteem and overcoming depression. Thus, it seems that the underlying issue for people with eating disorders may not be food and dieting, but rather more serious emotional and psychological problems.

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Appendix

INFORMATION QUESTIONNAIRE

Subject Number:

Age:

Year in school:

Ethnicity (Race):

Mother's Educational Level:

Father's Educational Level:

Mother's Occupation:

Father's Occupation:

Are you a member of a greek house? yes no

Have you ever been diagnosed with
an eating disorder related problem? yes no

Are you currently in treatment for
any other psychological concern? yes no

Figure Captions

Figure 1 The mean scores on the BDI for both the group scoring in the upper third and the group scoring in the lower third on the EDI-2 are shown. The mean scores of these groups were significantly different ($p < .0001$).

Figure 2 The mean scores on the Global Self-Esteem subscale of the MSEI for both the group scoring in the upper third and the group scoring in the lower third on the EDI-2 are shown. The mean scores of these groups were significantly different ($p < .0001$).

Figure 3 The mean scores on the Body Appearance subscale of the MSEI for both the group scoring in the upper third and the group scoring in the lower third on the EDI-2 are shown. The mean scores of these groups were significantly different ($p < .0001$).

Figure 4 The mean scores on the BDI for both the group scoring in the upper third and the group scoring in the lower third on the Bulimia subscale of the EDI-2 are shown. The mean scores of these groups were significantly different ($p < .01$).

Figure 5 The mean scores on the Global Self-Esteem subscale of the MSEI for both the group scoring in the upper third and the group scoring in the lower third on the Body Dissatisfaction subscale of the EDI-2 are shown. The mean scores of these groups were significantly different ($p < .001$).

Figure 6 The mean scores on the Global Self-Esteem subscale of the MSEI for both the group scoring in the upper third and the group scoring in the lower third on the Drive for Thinness subscale of the EDI-2 are shown. The mean scores of these two groups were significantly different ($p < .0001$).

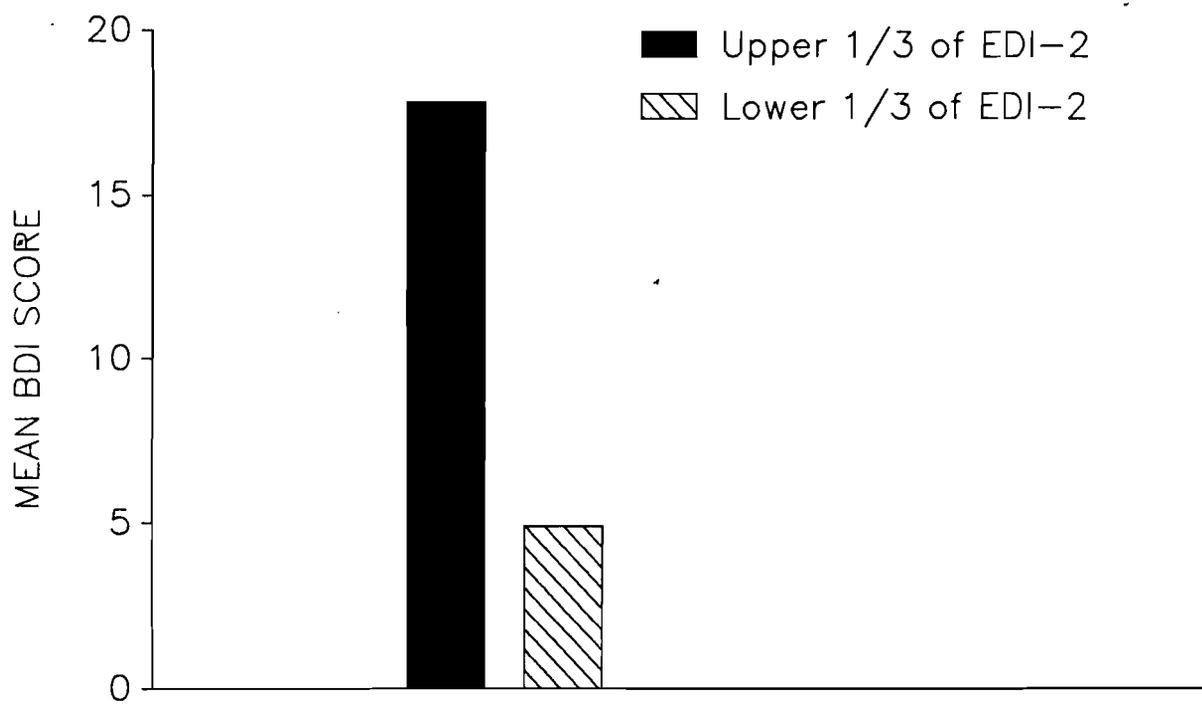


Figure 1

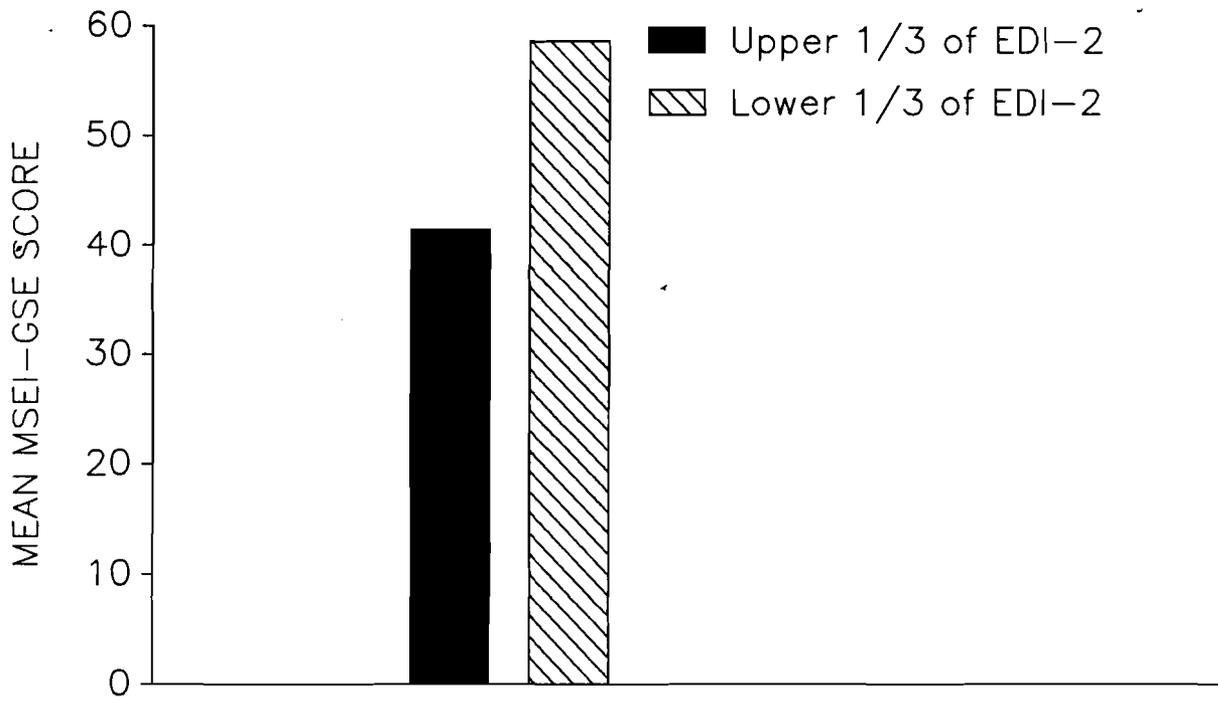


Figure 2

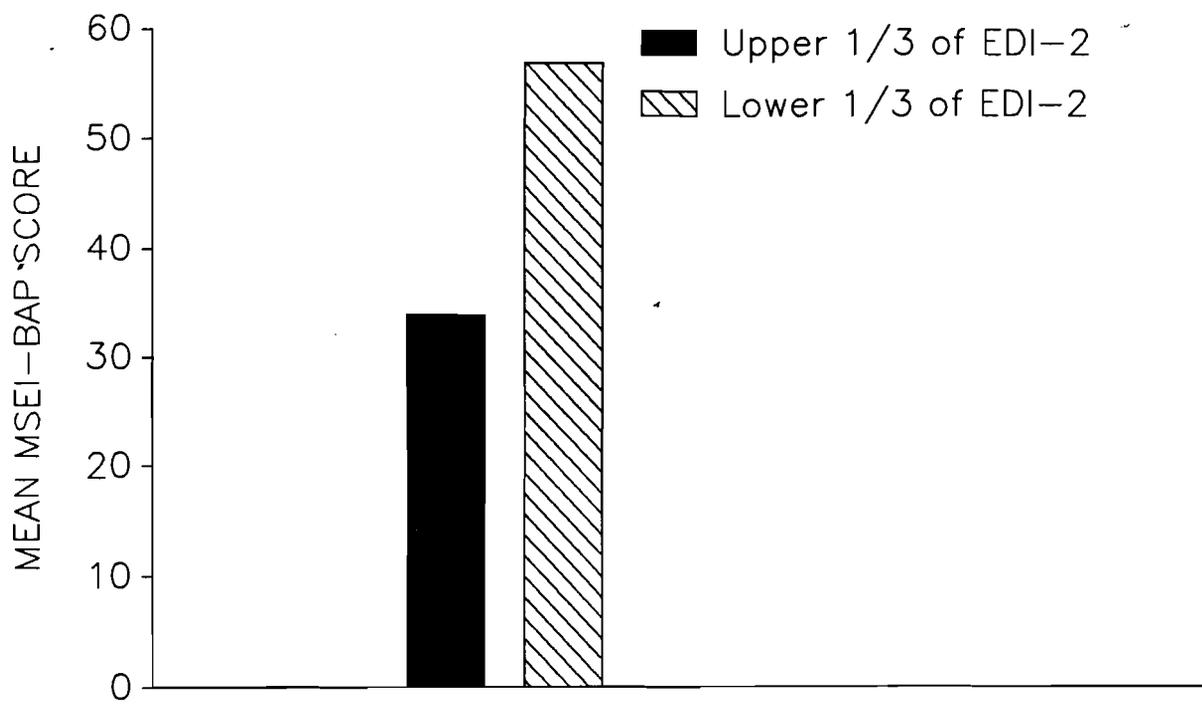


Figure 3

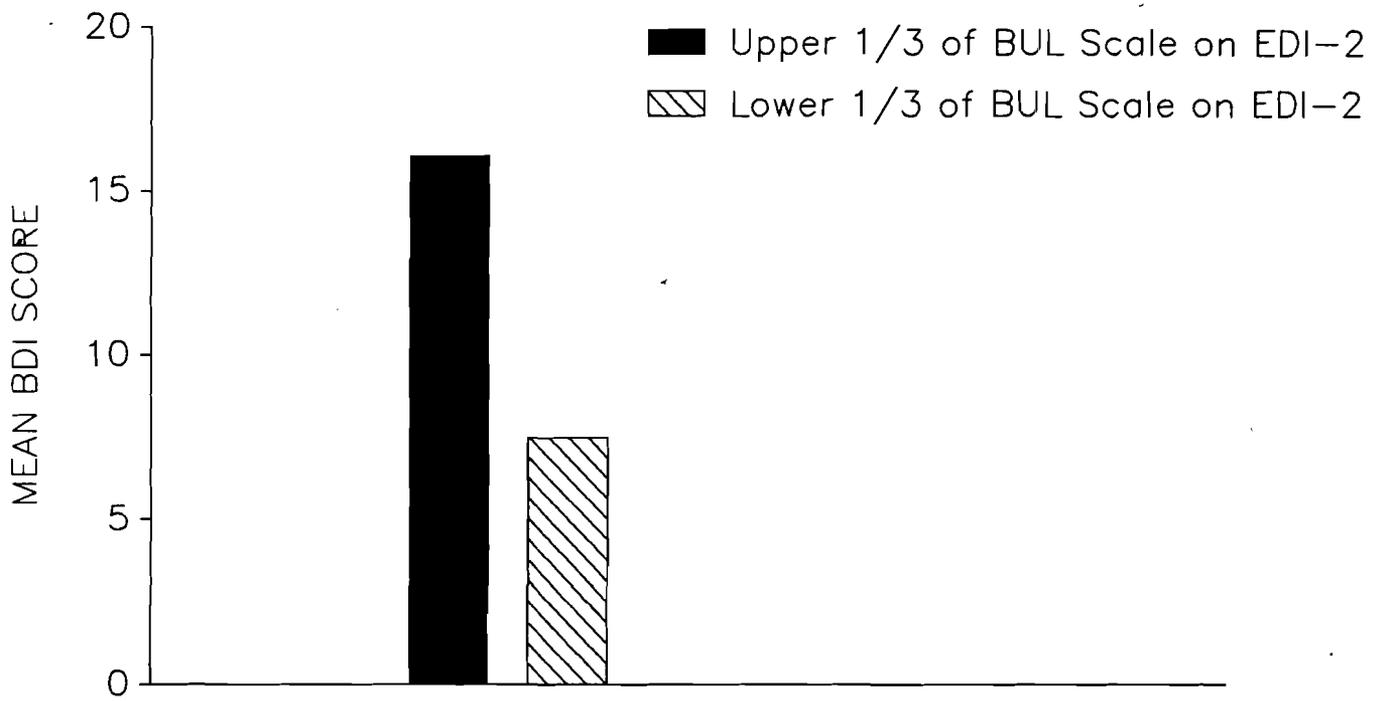


Figure 4

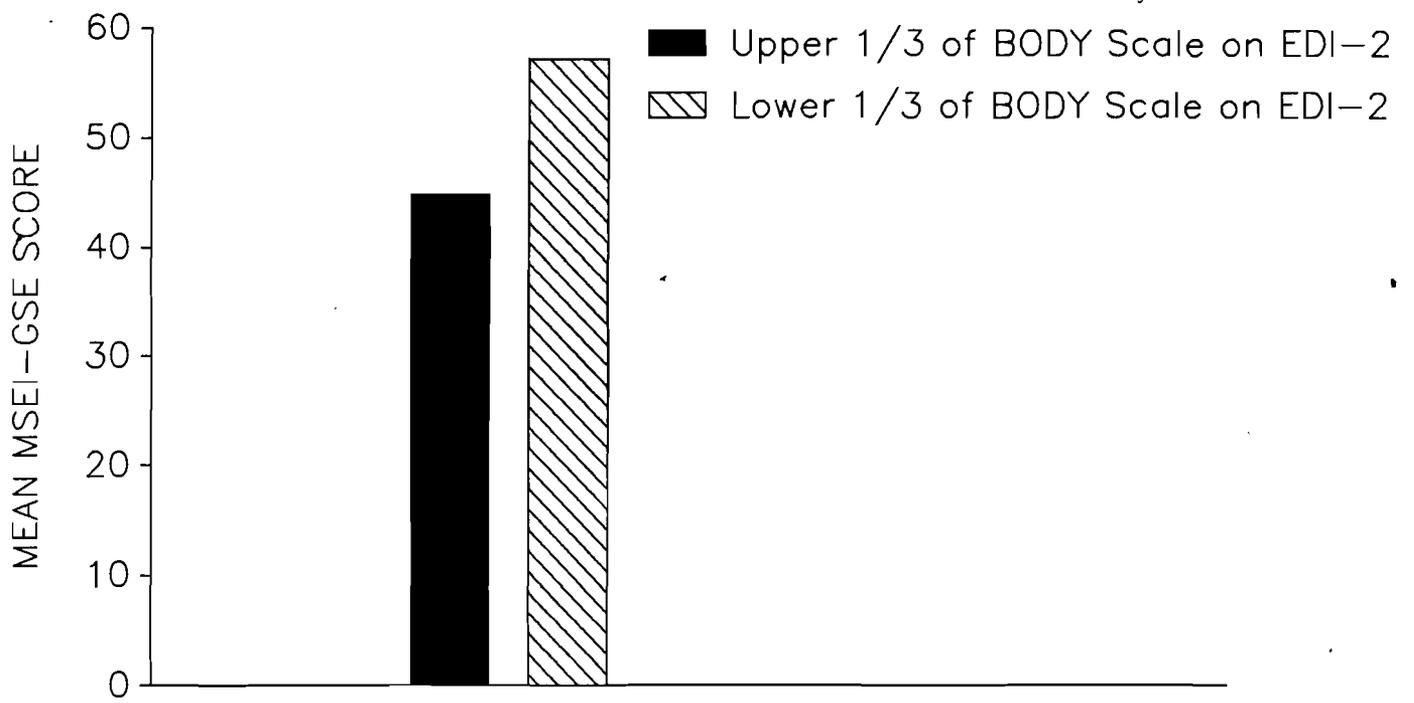


Figure 5

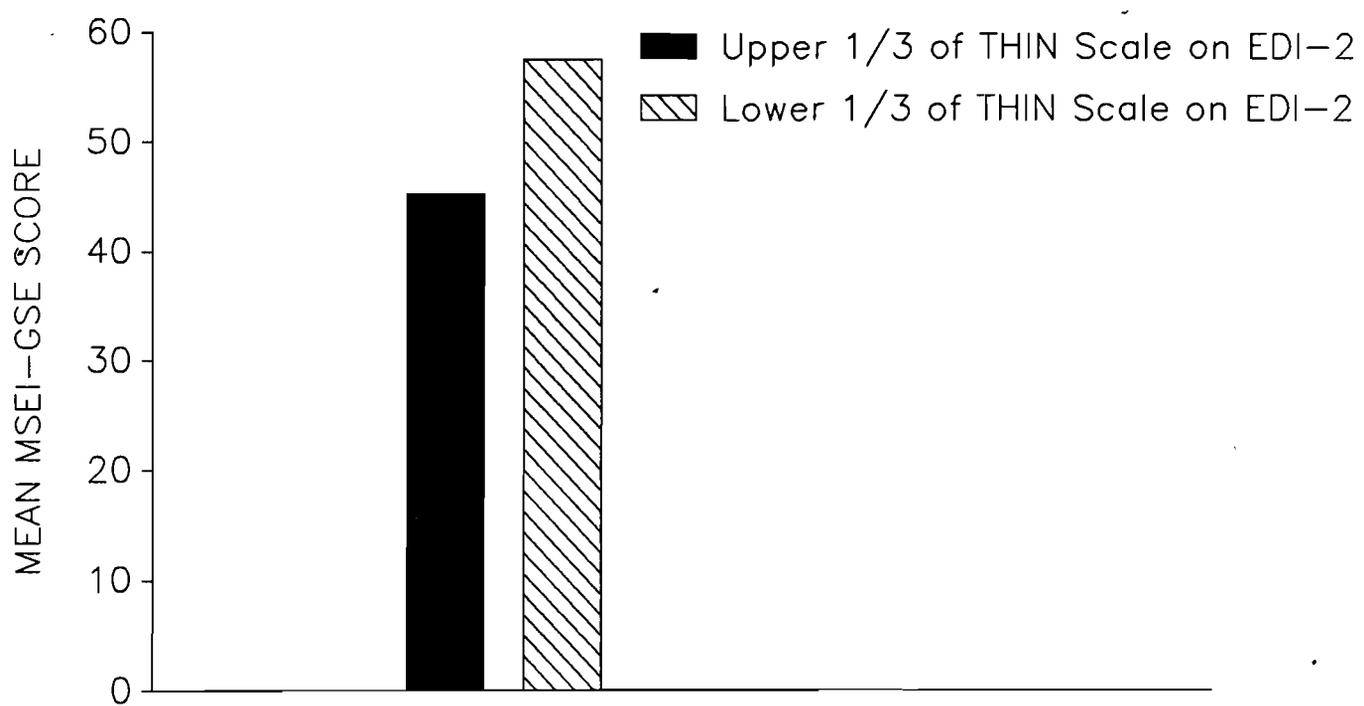


Figure 6