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# The Relationship Between Neurotic Perfectionism and Symptoms of Eating Disorders in College-Age Women

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The Relationship Between Neurotic Perfectionism and Symptoms  
Of Eating Disorders in College-Age Women

BY

Valerie L. DeVillez

1976 -

**THESIS**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF

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IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY  
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2000  
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## Abstract

This study was designed to examine the relationship between neurotic perfectionism and symptoms of eating disorders in college-age women. There is minimal published research addressing this relationship, and only one study has been conducted in which eating-disordered subjects were compared to non-eating-disordered subjects. Sixty-five female participants completed survey materials including the Eating Disorder Inventory-2 (EDI-2) and the Neurotic Perfectionism Questionnaire (NPQ.) Participants were recruited from the Pavilion, the Eastern Illinois University Counseling Center, and from introductory psychology classes at Eastern Illinois University. Results suggest that there is a direct relationship between neurotic perfectionism and symptoms of eating disorders in college-age females. Participants with eating disorders and those who had disturbed eating behaviors (undiagnosed eating disorders) had stronger correlations between neurotic perfectionism and eating disorder symptomology than did the comparison group, and the eating-disordered and undiagnosed participants had higher NPQ scores than the comparison group. Implications and suggestions for future research are discussed.

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## The Relationship Between Neurotic Perfectionism and Symptoms of Eating Disorders in College-Age Women

Recent research on anorexia nervosa and bulimia nervosa has yielded an increasingly detailed understanding of the range of biological and psychological factors associated with these disorders. Inherited vulnerabilities, cultural pressures, and adverse individual and family experiences appear to contribute to the onset of extreme dieting, binge eating, and purging (Walsh, 1998). According to Walsh, anorexia nervosa is among the most disabling and lethal of the psychiatric disorders, and 0.5% to 1.0% of females in late adolescence and early adulthood meet the criteria for anorexia nervosa outlined in the *DSM-IV (Diagnostic and statistical manual of mental disorders, American Psychiatric Association, 1994)*. The prevalence of bulimia nervosa among adolescent and young adult females is approximately 1% to 3%, and the percentage of individuals who seek treatment for this disorder is increasing (Walsh, 1998).

Both professionals and the lay public have become alarmed about eating disorders. One reason for this concern is the belief that the prevalence of eating disorders, particularly bulimia, has reached near epidemic proportions, particularly among females on college campuses (Thelen, McLaughlin-Mann, Pruitt, & Smith, 1987). It is unclear whether females entering college are already practicing some form of abnormal eating behavior or if the majority of eating disordered females begin their abnormal eating patterns after entering college (Nations, 1989).

The essential features of anorexia nervosa have not varied since it came to the forefront of psychology decades ago (Walsh, 1998). Anorexia nervosa is characterized by intense fear of gaining weight, obsessional preoccupation with food, and self-starvation; physiological side effects, such as amenorrhea, are common in severe cases. The *DSM-IV (1994)* lists four diagnostic criteria for anorexia nervosa:



- (1) refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of 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 or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight
- (4) in postmenarchal females, amenorrhea ( i.e., the absence of at least three consecutive menstrual cycles). A woman is considered to have amenorrhea if her periods occur only following hormone administration (e.g., estrogen).

The *DSM-IV* also differentiates between two different types of anorexia nervosa:

- (1) Restricting Type: during the current episode of anorexia nervosa, the person has not regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)
- (2) Binge-Eating/Purging Type: during the current episode of anorexia nervosa, the person has regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas.)

Many individuals have probably engaged in occasional binge eating episodes when adequate food supplies have been available, and the practice of vomiting after meals dates back thousands of years (Pliner & Haddock, 1996; Walsh, 1998). However, bulimia nervosa was officially recognized as a psychiatric disorder in 1980 because an increasing number of individuals were being treated for “problem eating.” Bulimia nervosa is characterized by large, uncontrolled eating binges, inappropriate compensatory behavior (e.g., vomiting, overuse of laxatives), and self-esteem closely linked to body weight. The *DSM-IV* (1994) lists five diagnostic criteria for bulimia nervosa:

- (1) recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following: (a) eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances; (b) a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)
- (2) recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise
- (3) the binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months
- (4) self-evaluation is unduly influenced by body shape and weight
- (5) the disturbance does not occur during episodes of anorexia nervosa

The *DSM-IV* also differentiates between two different types of bulimia nervosa:

- (1) Purging Type: during the current episode of bulimia nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas
- (2) Nonpurging Type: during the current episode of bulimia nervosa, the person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

There are several signs of the presence of an eating disorder. Dr. Patricia Santucci gave a presentation at the National Eating Disorders Screening Program (NEDSP) in February 1998 in which she provided clinicians, researchers, and parents with a list of signs to watch for in their clients, participants, or children. Signs of anorexia nervosa

include: intense fear of gaining weight; restriction of caloric intake; unusual eating habits or rituals; and vigorous or compulsive exercise. Signs of bulimia nervosa include: guilt, shame, or fear of gaining weight; purging behaviors; hoarding or stealing food, and going to the bathroom immediately following meals.

From an investigation into the daily lives of individuals with eating disorders, Mary Pipher (1995) provides examples of an average meal for young women suffering from anorexia nervosa and bulimia nervosa. One anorexic woman reported eating her largest meal of the day at noon, and that meal consisted of three grapes, a Ritz cracker, and two olives. On the other hand, bulimics eat food in large amounts. One bulimic woman kept a food journal for one day, and her meals were as follows: half a grapefruit, tea with artificial sweetener, ham sandwich, apple, 12-ounce bag of Doritos, quart of strawberry ice cream, can of Pringles, bottle of Spanish olives, 8-ounce container of cottage cheese with a can of peaches, cookies (break to vomit;) lettuce wedge with low-calorie dressing, piece of chicken, two-pound box of saltines, popcorn, three Mars bars, nachos, cookies, loaf of raisin bread (break to vomit;) bowl of chili, salad with low-calorie dressing, can of ravioli, can of chili, two boxes of animal crackers, loaf of banana bread, bag of corn puffs (vomit). This binge-purge episode began at 8:30 a.m. and ended at 9:30 p.m. Although this is an extreme example, it is indicative of the potential severity of this disorder.

Additionally, there may be serious physical and medical effects associated with an eating disorder. Women with anorexia nervosa may exhibit the following: a sallow complexion; dry skin; hair loss; hollow facial features; irregular or ceased menses or infertility; osteoporosis; changes in metabolism and energy; cardiac problems; low blood pressure; fatigue; and dizziness (Santucci, 1998). Women with bulimia nervosa may exhibit the following: damaged teeth; swollen cheeks; dehydration; weakness; electrolyte

imbalance; muscle spasms; headache; fatigue; gastrointestinal problems; and kidney problems.

Although eating disorders have received a great deal of attention from clinicians and researchers, there is little consensus regarding the origins of these disorders. Theories span the continuum of causation from those that are biological to those that are sociocultural in nature. It would seem that the major issue in uncovering the origins of anorexia nervosa and bulimia nervosa is why food becomes the focus for these females, as opposed to other types of self-destructive behaviors, such as alcohol abuse or acting out sexually (Miller, McCluskey-Fawcett, & Irving, 1993).

Due primarily to the physiological components of eating disorders, there is speculation that the abnormal behavior of women with eating disorders is caused by a biological abnormality. When examining the potential biological factors that may influence the development of eating disorders, it is a challenge to determine whether the physiological abnormalities are a cause or a consequence of the eating disorder (Walsh, 1998). It is clear that the neurotransmitter serotonin is involved in physiological systems relevant to anorexia nervosa. Increases in brain serotonin function lead to reductions in food intake, and decreases in brain serotonin function are associated with depression, which often accompanies anorexia nervosa.

Cerebrospinal fluid levels of the major serotonin metabolite, 5-hydroxyindoleacetic acid (5-HIAA), are low in underweight women with anorexia nervosa but rise to above normal levels in women who are in long-standing recovery (Walsh, 1998). This finding has led to speculation that a premorbid disturbance in serotonergic function might be a risk factor for the development of anorexia nervosa.

There is evidence that women with bulimia have abnormalities in serotonergic function as well (Walsh, 1998). A commonly used method to assess serotonin status in bulimics has been the administration of an agent, such as fenfluramin, that acts through

the central serotonergic system to stimulate the release of a hormone, such as prolactin. Compared to women without eating disorders, women with bulimia show reduced responses to these stimuli. Because serotonin is involved in the development of satiety, disturbances in serotonin function may contribute to the persistence of binge eating.

Abnormalities in the functioning of peripheral satiety mechanisms may also contribute to bulimia (Walsh, 1998). In some bulimic women, the capacity of the stomach is enlarged and the release of the satiety hormone, cholecystokinin (CCK), following a meal is blunted. Disturbances in this physiological control mechanism may impede the resumption of normal eating behavior.

Substantial individual differences in body build and weight are genetically determined, and one way in which heredity may influence weight is by determining the ways in which food is metabolized (Striegel-Moore, Silberstein, & Rodin, 1986). Women who are genetically predisposed to be heavier are at greater risk for bulimia than those women who are naturally thin. It has also been suggested that in addition to being predisposed to a specific body weight, the tendency to develop an eating disorder may be genetically transmitted. Studies have documented a significantly higher incidence of both anorexia and bulimia among first-degree female relatives of patients than in the immediate families of control subjects (Gershon et. al., 1983; Strober, Morrell, Burroughs, Salkin, & Jacobs, 1985).

An individual's cognitive style may also contribute to the development of an eating disorder. According to Kerr, Skok, & McLaughlin (1991), bulimics and anorexics tend to be dichotomous thinkers. As the eating disorder becomes more pronounced in women, so does the cognitive dysfunctioning. Kerr et. al. also posit that anorexics and bulimics think simply and concretely with irrational logic. Women with eating disorders are avoidant, and they generally believe that situations cause emotional reactions over which they have no control; they also believe that the effects of their past cannot be

overcome. These findings demonstrate that anorexics and bulimics do have irrational cognitive styles and a deficit in autonomous functioning.

Several studies have examined the sociocultural aspect of familial variables and the role they play in the origins of eating disorders (Kerr et. al., 1991; Miller, McCluskey-Fawcett, & Irving, 1993; Scalf-McIver & Thompson, 1989). Low levels of cohesion, disorganization, and nonexpressiveness are evident in families of individuals with eating disorders (Attie & Brooks-Gunn, 1989). Mothers of eating disordered children are significantly more domineering and controlling of their daughters, while both parents are generally more demanding (Miller et. al., 1993). These parents also tend to stress academics and appearance more than parents of non-eating disordered children, and they are more likely to compare their children to one another. Kerr et. al. (1991) found that parents of children with eating disorders set high achievement standards, fail to support autonomy, and engender self-doubt in their daughters. This same study also yielded marginally significant findings that these parents tend to be more belittling, less helpful and nurturing, and more restricting than parents of children without eating disorders (1991).

Another possible sociocultural factor was identified by Bruch (1969), who suggested that stress or distorted interaction during mealtimes could have a lifelong effect on behavior. The family enmeshment in anorexics and bulimics tends to be focused on issues of eating, hunger, and weight, which leads to shame and guilt feelings focused on eating behavior (Miller et.al., 1993). Discussions of weight and weight control, clothing, hair, and other physical attributes commonly take place at the dinner table, at a time when the entire family is present, therefore leading to embarrassment. The use of food as a tool for punishment or manipulation, the dinner table being used as a place to air interpersonal grievances and hostilities, and the pressure of mealtime likely being the only time a family spends together during the day displaces stress and dread to the act of eating itself.

Cognitive and sociocultural factors may combine to influence the development of perfectionism, a personality style that clinicians have frequently described as a central feature of eating disorders. Some theorists believe that perfectionism develops from sociocultural pressures; however, there are also those who believe perfectionism is a function of an individual's cognitive style (Davis, 1997; Minarik & Ahrens, 1996; Waller, Wood, Miller, & Slade, 1992). Hewitt, Flett, and Ediger (1995) found data to support the view that eating disorders are associated with unrealistic standards for thinness and physical attractiveness, and that women with eating disorders have unrealistic expectations in various life situations (in addition to those regarding physical appearance and self-esteem.) As a result, several studies have been conducted in order to investigate perfectionism as a potential risk factor in the development of anorexia nervosa and bulimia nervosa (Bastiani, Rao, Weltzin, & Kaye, 1995; Minarik & Ahrens, 1996; Srinivasagam et.al., 1995).

According to Hewitt and Flett (1991), perfectionism is a multidimensional construct consisting of three components: (1) self-oriented perfectionism, the setting of extremely high standards for the self, (2) other-oriented perfectionism, the holding of unrealistic expectations for others, and (3) socially prescribed perfectionism, a perceived need to attain standards and expectations prescribed by significant others. According to this model, the perfectionism of the eating disordered client appears to be socially prescribed perfectionism. Many anorexic and bulimic women report feeling that they need to be perfect in the eyes of others and that they often do what they believe people expect them to do. According to Mitzman, Slade, and Dewey (1994), typical perfectionists are expected to score high on only one or two of these dimensions, whereas extreme perfectionists are expected to score high on all three dimensions, with socially prescribed perfectionism at the core of psychopathology.

Hamachek (1978) was the first to describe extreme perfectionism, which he termed “neurotic perfectionism.” In his article, Hamachek described the subtle differences between typical and neurotic perfectionism. Typical perfectionism is generally accompanied by a sense of satisfaction and elevation of self-esteem; these perfectionists will rejoice in their skills and appreciate a job that is done well. Typical perfectionists set realistic targets, and they are primarily motivated by the pleasure associated with success. However, neurotic perfectionists tend to set excessively high standards, view mistakes as disastrous, and they are driven by an intense fear of failure. Typical and neurotic perfectionists’ behaviors are seen to differ only in terms of degree and intensity, therefore placing them on a continuum.

Hamachek (1978) posits that there are two antecedents of neurotic perfectionism that can act individually or as a pair: an environment of nonapproval or inconsistent approval, and an environment of conditional positive approval. In an atmosphere of nonapproval, a person lacks the feedback necessary to compare actual performance with external standards. This lack of feedback leads to doubt and uncertainty because the individual never knows what “good” really is. If there are no external standards, some individuals may subconsciously establish unrealistically high personal standards, such as perfection, assuming that if they can meet these standards, they can satisfy anyone, including themselves.

In an environment of conditional positive approval, certain conditions must be met before approval is given (Hamachek, 1978). These conditions may encourage individuals to under-value the self and over-value the performance; therefore, they learn that they only have a self through performance. The conditional positive approval environment differs from the nonapproval environment in that approval is granted when specific standards are met. However, the two environments are similar with regard to an absence of feedback when performance is below a specified standard. Hamachek



believes that this is the way being perfect and being approved have become linked together for neurotic perfectionists.

Hamachek's article prompted a number of studies on neurotic perfectionism, some of which focused on the relationship between neurotic perfectionism and symptoms of eating disorders (Davis, 1997; Waller et. al., 1992). Mitzman et. al. (1994) suggest that neurotic perfectionism may be a factor contributing to the development and emergence of eating disorders among young women. If a young woman has the desire to be perfect and also experiences global dissatisfaction, she may choose to interfere with her daily food intake and her body weight in an attempt to establish order and total control over her body, and therefore, her life.

Eating disorders are self-reinforcing in the sense that women experience feelings of success and control at times when they feel they have failed in other aspects of their lives (Mitzman et. al., 1994). However, Davis (1997) believes that eating disorders serve as a way to deny other core conflicts. Rather than concentrating on underlying psychological disturbances, such as depression and suicidal ideation, obsessive-compulsive disorder, or personality disorders, women with eating disorders can focus all of their attention on their food intake (or lack thereof), thereby avoiding their core issues. According to Davis (1997), body image dissatisfaction is most pronounced when unrealistically high personal standards are set and when the individual experiences a strong fear of failure. The combination of these attitudes potentially leads to destruction; therefore, it is not surprising that this psychological profile is common to eating disorder patients.

Davis (1997) conducted a study to examine the role of psychological factors, including perfectionism, in the development of eating disorder symptomatology. One hundred twenty-three female patients participated in the study, and all of them were admitted by psychiatrists to one of the eating disorder treatment programs at Toronto

Hospital. All participants were diagnosed as eating-disordered according to the criteria outlined in the DSM-III-R; 42 were diagnosed with anorexia nervosa, 59 were diagnosed with bulimia nervosa, and 22 were diagnosed with eating disorders not otherwise specified. The women were asked to respond to the Body Esteem Scale, the Multidimensional Perfectionism Scale, the Neurotic Perfectionism Questionnaire, and the Eysenck Personality Questionnaire-Revised. Davis found that high levels of both normal and neurotic perfectionism were associated with low body esteem, and she suggested that researchers should view the two components of perfectionism separately.

Waller et. al. (1992) conducted a study to investigate whether the Setting Conditions for Anorexia Nervosa Scale, SCANS, (Slade, Phil, & Dewey, 1986) could be used for identifying girls whose unhealthy eating attitudes may reflect a risk of developing an eating disorder. There were 462 participants, all of whom were between the ages of 11 and 16, and they came from families with a high socioeconomic status. They represented the entire population of a private girls' school in England (with the exception of 12 girls who were absent that particular day). The girls were divided into groups based upon age: 11-12 years (n=136), 13-14 years (n=178), and 15-16 years (n=148).

The girls were asked to respond to the SCANS and the Eating Attitudes Test, EAT-26, (Garner, Olmsted, Bohr, & Garfinkel, 1982). Waller et. al. (1992) found that there was a development of a personality characteristic during early adolescence that is associated with the etiology of eating disorders. There was not a significant increase in the levels of neurotic perfectionism or dissatisfaction, but there was an increase in association between the two characteristics. Waller et. al. (1992) suggested that the SCANS can be a valuable tool in identifying diagnosable cases of eating disorders.

To this point, only one study has been conducted to investigate the relationship between neurotic perfectionism and the development and/or maintenance of eating

disorders in college-aged women (Mitzman, Slade, & Dewey, 1994). Additionally, only one study was conducted with adolescent girls in which a comparison of eating-disordered subjects to non-eating-disordered subjects on measures of neurotic perfectionism was included (Davis, 1997). The current study is designed to address these limitations in an effort to better understand the complex role neurotic perfectionism may play in predisposing females to eating disorders.

There are three hypotheses for the current study: (1) Neurotic perfectionism is positively correlated with symptoms of eating disorders in college-age females (2) The correlations between neurotic perfectionism and symptoms of eating disorders in the clinical group and the undiagnosed group are stronger than those correlations in the comparison group of “normal” participants, and (3) Neurotic perfectionism scores for the clinical group and the undiagnosed group are higher than those for the comparison group.

## Method

### Participants

The sample included 65 female participants, and they reported a mean age of 19.83 years ( $SD= 4.69$ ). Twenty of the participants were professionally diagnosed as having an eating disorder, as per the criteria outlined in *The DSM-IV* (American Psychiatric Association, 1994), and 45 of them served as a comparison group. The comparison group was subdivided into two groups; there were participants among the comparison group who have hidden disturbed eating behaviors; therefore, the actual comparison group was limited to those who earned a score of 13 or lower on the Drive for Thinness subscale of the EDI-2. Those who endorsed a score of 14 or higher on the Drive for Thinness subscale were placed into a separate group, labeled the undiagnosed group. Garner (1991) reported that when using the EDI-2 as a screening instrument, a cutoff score of 14 on this particular subscale is appropriate for many purposes since this

score identifies approximately 10% of college and high school-aged females, 10% to 40% of whom may be suspected as having clinically significant eating disorders.

The participants with eating disorders were recruited from the Counseling Center at Eastern Illinois University and from The Pavilion in Champaign, Illinois. The Pavilion is a behavioral health systems crisis center that has inpatient, outpatient, and continuing care services for individuals experiencing psychological problems. More specifically, The Pavilion has a continuing care program for eating disorder clientele that consists of 12 hours of programming every Thursday. I obtained permission from both agencies to leave survey materials with the therapist in charge of eating disorder psychotherapy groups. Members of the comparison group, as well as the undiagnosed group, were undergraduate introductory psychology students at Eastern Illinois University.

### Materials

Participants responded to the Neurotic Perfectionism Questionnaire (NPQ; Mitzman et. al., 1994), a 42-item, self-report inventory designed to indicate the degree to which individuals set unrealistically high targets, are overly concerned about making mistakes, and are driven by fear of failure (see the Appendix for a copy of the NPQ). The questionnaire assesses attitudes and experiences associated with the emergence and maintenance of neurotic perfectionism. Test items are based on a 5-point Likert scale (1=strongly disagree, 5=strongly agree) with higher scores representing a neurotic perfectionistic attitude.

Mitzman et. al. (1994) piloted the NPQ with 255 female undergraduates who comprised the control group and 32 female eating disorder patients who comprised the clinical group (N=287.) Those females who were identified as members of the clinical group were attending clinics and self-help groups for eating disorders. The females involved were predominantly in their late teens and early 20's. All participants were administered an initial version of the NPQ, which contained 66 items, and half of the

control group as well as the clinical group received the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982) and the SCANS (Slade & Dewey, 1986). The remaining members of the control group received the STB subscale (Claridge & Broks, 1984) and the NAPD subscale (O'Brien, 1987); however, those results were not reported in the Mitzman article.

The NPQ data gathered from the control group were subjected to component analysis, and as a result, several items were eliminated from the original questionnaire. Forty-two items remained and became the final version of the NPQ, and it demonstrated a coefficient of internal consistency (Cronbach's alpha) of .95 for the entire sample. The final version of the NPQ demonstrated satisfactory internal consistency, in that all of the items were significantly correlated with the SCANS P (perfectionism) and SCANS D (dissatisfaction) subscales. Because the NPQ was developed as a pilot measure, further validity studies as well as reliability studies are necessary.

Although there are psychological measures of perfectionism, [The Frost Multidimensional Perfectionism Scale, (Frost, Marten, Lanhart, & Rosenblate, 1990), and The Multidimensional Perfectionism Scale, (Hewitt & Flett, 1991)], the NPQ is the only testing instrument designed specifically to measure neurotic perfectionism. Therefore, it was selected for use in the current study.

The EAT-26, (Garner, Olmsted, Bohr, & Garfinkel, 1982) is used as a screening instrument for detecting previously undiagnosed cases of anorexia nervosa in populations that are at high risk for the disorder. The EAT-26 provides examiners with one overall score, whereas other eating disorder measures generate several subscale scores. Another limitation of the EAT-26 is that it is routinely used in public screenings for eating disorders, and as a result has been published on the Internet for this purpose. Because of its accessibility, many college-aged females have been pre-exposed to this instrument, rendering it problematic for use in the current study.

The SCANS, (Slade, Phil, & Dewey, 1986) is a screening questionnaire for individuals at risk of developing an eating disorder. The SCANS has two hypothetical major scales: General Dissatisfaction and Perfectionism. A criticism of this instrument is that high scores may represent the consequences of having an eating disorder rather than the antecedents that may lead up to the emergence of an eating disorder. Reliability and validity information is also unavailable, making this measure less desirable for use in the current study.

The Bulimia Test, BULIT, (Smith & Thelen, 1984) is a measure geared toward the assessment of the component factors that are described in the DSM-III diagnostic criteria for bulimia. The BULIT has been shown to discriminate bulimic from normal control subjects and to identify bulimia in nonclinical samples. However, a relevant limitation of this instrument is that it does not include items related to anorexia nervosa.

Participants in the current study completed the Eating Disorder Inventory-2 (EDI-2; Garner, 1991), a 91-item, self-report measure of behaviors, feelings, and other symptoms associated with anorexia nervosa and bulimia nervosa. The primary purpose of this instrument is to assist clinicians in assessing patient symptomology, planning treatment, and evaluating the effectiveness of clinical interventions. Test items are based on a 6-point Likert-type scale (A= always, U= usually, O= often, S= sometimes, R= rarely, N= never.) Item responses are assigned scores ranging from 0 to 3, thus condensing the range for each item from 6 points to 4 points. The most extreme symptomatic responses (A or N) are assigned a score of 3, the adjacent scores receive a score of 2, and the three most extreme asymptomatic responses are scored as 0. The authors' rationale for this scoring method is that responses in the asymptomatic direction reflect an absence of pathology.

The EDI-2 contains 8 subscales: (1) Drive for Thinness--excessive fear of weight gain, preoccupation with weight and dieting (e.g., I am terrified of gaining weight); (2)

Bulimia--frequent bouts of bingeing and thoughts about bingeing (e.g., I stuff myself with food); (3) Body Dissatisfaction--dissatisfaction over the size and shape of regions of the body of most concern to those having eating disorders, usually the stomach and the hips (e.g., I think my thighs are too big); (4) Ineffectiveness--feelings of insecurity, worthlessness, and inadequacy (e.g., I feel alone in the world); (5) Perfectionism--high expectations for personal performance and achievement (e.g., I have extremely high goals); (6) Interpersonal Distrust--feelings of alienation, avoidance of close relationships (e.g., I have trouble expressing my emotions to others); (7) Interoceptive Awareness (Lack of)--inability to identify accurately one's own emotional states and bodily sensations related to eating and hunger (e.g., I get confused as to whether or not I am hungry); and (8) Maturity Fear--desire to retreat or regress to the relative safety and security of childhood (e.g., The demands of adulthood are too great). Items on the Drive for Thinness, Bulimia, and Body Dissatisfaction subscales are directly related to eating and weight-related behaviors and/or problems, and the remaining 5 subscales are concerned with general psychological problems assumed to have relevance to individuals with eating disorders.

The EDI-2 also contains 3 provisional subscales: (1) Asceticism--belief in the virtue of self-discipline, control of bodily urges, self-denial, and so forth (e.g., I am ashamed of my human weaknesses); (2) Impulse Regulation (Lack of)--tendency toward impulsivity, self-destructiveness, recklessness, and so forth (e.g., I am prone to outbursts of anger or rage); and (3) Social Insecurity--perceptions of self-doubt and insecurity in social relationships (e.g., I would rather spend time by myself than with others). These subscales are considered provisional because the test items comprising them are new (in comparison with the items used in the 8 original subscales), and the norms are based on a relatively small clinical sample (N=107). However, the provisional subscales were

retained because the author believed that they identified a distinct subgroup of eating disordered patients.

Internal consistency measures for the 8 original subscales range from .83 to .93, and internal consistency measures for the 3 provisional subscales range from .68 to .76 (Brookings, 1994). The validity of the EDI-2 has not been established, which is a criticism of the instrument.

Participants were also asked to provide basic demographic information (e.g., gender, age). The NPQ and the EDI-2 were counterbalanced in order to minimize potential sequence effects.

### Procedure

Introductory psychology students signed up to participate on a specified date, at which time they completed surveys in a classroom setting with approximately 25 other students. It took participants approximately 45 minutes to complete survey materials; upon completion of the data packets, they received 1 hour of research credit toward the 3-hour requirement for the course. None of the participants were paid.

Participants from the clinical group were given data packets by a counselor at the EIU Counseling Center or a member of the case management team at Pavilion. Upon receiving the packet, participants were asked to read and sign the informed consent form and to respond to the NPQ and the EDI-2. After the packets were completed, they were returned to the case manager/counselor who handed them out, and he/she returned them to the student researcher.

All participants were required to sign an informed consent document before data collection materials were distributed; however, the researcher did not see the sheets once they were signed. An envelope was provided at the front of the testing location, and participants were asked to place their signed documents in that envelope so that the researcher was unable to identify them. By asking participants not to put any identifying



information on their data packets, anonymity was protected. All data packets were number coded so that the researcher knew which NPQ belonged with which EDI-2.

### Results

To test the first hypothesis, that neurotic perfectionism is positively correlated with symptoms of eating disorders, a series of Pearson product-moment correlation coefficients were calculated. All of the coefficients were statistically significant at an alpha level of .01 (see Table 1). Scores on each subscale of the EDI-2 were positively and significantly related to scores on the NPQ, indicating that high scores on each of the subscales measuring a specific facet of eating disorders is associated with high levels of neurotic perfectionism in college-aged women. Although correlation coefficients for relationships between scores on all of the EDI-2 subscales and NPQ scores were calculated, the focus of the study was on the Drive for Thinness, Body Dissatisfaction, and the Perfectionism subscales of the EDI.

Because the Drive for Thinness subscale is frequently used in eating disorder screenings as one of the criteria for identifying individuals with eating disordered behavior, the relationship between scores on this subscale and scores on the NPQ [ $r(63) = .735, p < .001$ ] was of particular interest. For the purpose of this study, more emphasis was placed on the relationship between Body Dissatisfaction subscale scores and NPQ scores [ $r(63) = .604, p < .001$ ], as opposed to relationships with other subscales of the EDI-2, because body image may play a role in women's view of themselves, regardless of their eating disorder status (Davis, 1997; Hewitt, Flett & Ediger, 1995). Finally, because the Perfectionism subscale measures a construct similar to that measured by the NPQ, the relationship between scores on this subscale and NPQ scores [ $r(63) = .631, p < .001$ ] was also a point of focus in the study.

It is important to note that the Perfectionism subscale of the EDI-2 was used in comparison with NPQ scores for a manipulation check of the data as well as a measure of

the NPQ's validity, due to the fact that it is a relatively new instrument. Results of the Pearson product-moment correlation indicate that there is a significant relationship between the Perfectionism subscale of the EDI-2 and NPQ scores [ $r(63) = .631, p < .01$ ]. However, it is important to remember that there are distinctions between normal and neurotic perfectionism; therefore, these two instruments are not necessarily measuring the same construct.

To test the second hypothesis, that the clinical group and the undiagnosed group would have stronger correlations between neurotic perfectionism and symptoms of eating disorders than the comparison group, a series of Pearson correlation coefficients were calculated, and pairwise comparisons were made using Fisher's  $z$  tests. (Complete correlation matrices by group of participants can be found in Tables 2 through 4). The comparison group's scores on the NPQ were positively correlated with scores on the Drive for Thinness subscale,  $r(31) = .493, p < .01$ , the Body Dissatisfaction subscale,  $r(31) = .442, p < .01$ , and the Perfectionism subscale,  $r(31) = .419, p < .05$ . The diagnosed group exhibited the same pattern as the comparison group: DT,  $r(31) = .770, p < .001$ ; BD,  $r(31) = .774, p < .001$ ; and P,  $r(31) = .655, p < .01$ . However, there were no significant correlations in the undiagnosed group.

Results of Fisher's  $z$  tests indicate that the diagnosed group had a stronger relationship between neurotic perfectionism and the symptoms measured by the Body Dissatisfaction subscale than did the comparison group,  $z = -1.83, p = .0336$ . The test comparing the diagnosed group and the undiagnosed group indicated that the diagnosed group had a stronger relationship between neurotic perfectionism and the symptoms measured by the Drive for Thinness subscale than did the undiagnosed group,  $z = 3.92, p = .00005$ . The test comparing the diagnosed group and the undiagnosed group indicates that the diagnosed group had a stronger relationship between neurotic perfectionism and

the symptoms measured by the Body Dissatisfaction subscale than did the undiagnosed group,  $z = 2.41, p = .0080$ .

To test the third hypothesis, that the clinical group and the undiagnosed group would have higher neurotic perfectionism scores than the comparison group, I conducted a one-way analysis of variance. A significant F ratio was obtained,  $F(2, 65) = 11.942, p < .001$ , and Scheffe post hoc tests revealed that participants from the diagnosed group ( $M = 136.85, SD = 42.14$ ) and the undiagnosed group ( $M = 146.17, SD = 24.69$ ) had significantly higher scores on the NPQ than did those participants from the comparison group ( $M = 101.94, SD = 27.07$ ). No significant difference was found on NPQ scores between the diagnosed group and the undiagnosed group. (See Table 5 for descriptive statistics).

### Discussion

The primary goal of this study was to determine whether neurotic perfectionism is correlated with symptoms of eating disorders in college-age females. Each subscale of the EDI-2 (excluding the provisional subscales) was positively and significantly correlated with neurotic perfectionism, indicating that women with neurotic perfectionistic tendencies are in fact more likely to exhibit eating disordered behavior. The current findings are consistent with those from a study conducted by Mitzman et. al. (1994), in which they found that higher levels of perfectionism were associated with a higher frequency of eating disorder symptomology. The current findings are also in accordance with those from a study that Caroline Davis conducted (1997), in which she found that body image problems are most pronounced when high personal strivings are set in the direction of unattainable goals. Davis also found that eating disorders were more prevalent in females who experienced an intense fear of personal failure.

Consistent with the second hypothesis, that the clinical group and the undiagnosed group would have stronger correlations between neurotic perfectionism and symptoms of

eating disorders than the comparison group, results of one of the Fisher's z tests indicate that the diagnosed group had a significantly stronger relationship between NPQ scores and Body Dissatisfaction scores than did the comparison group. This is not surprising, because extreme levels of perfectionism, and in this case, neurotic perfectionism, have been linked to eating disorder symptomology in the past (Davis, 1997; Mitzman et. al., 1994; Waller et. al., 1992). Hewitt et. al. (1995) found that in the majority of women with eating disorders, strict standards of evaluation apply to physical appearance, body thinness, and weight. For these women, mistakes and/or flaws represent failures that may be interpreted as evidence of personal deficiencies. The results from the current study support this contention.

Furthermore, analyses conducted to test the second hypothesis showed that the diagnosed group had stronger relationships between NPQ scores and scores on the Drive for Thinness and Body Dissatisfaction subscales than did the undiagnosed group. Although this particular pattern of findings was not predicted, it is evident that something about the symptoms measured by the Drive for Thinness as well as the Body Dissatisfaction subscales operate differently in women who have been diagnosed as eating disordered and women who remain undiagnosed.

Perhaps the diagnosed group showed a stronger relationship between neurotic perfectionism and eating disorder symptomology than the undiagnosed group because those women who are in treatment have become aware of their neurotic perfectionism, whereas those who are not seeking help are in denial of their extreme perfectionistic tendencies. If undiagnosed women are either not willing to admit or are unaware that there is a problem, then their perfectionism would not be viewed (by themselves) as neurotic. If this is the case, then these attitudes would be reflected in the undiagnosed group's responses on questionnaire items; if they do not believe that they are harshly

critical of themselves or have abnormal eating habits, then most likely they would not indicate that they are experiencing any difficulties.

Possibly, if the women who comprised the undiagnosed group were to admit that their eating behaviors and perfectionistic thought processes were abnormal, they might seek treatment. It may be that women who are in treatment respond differently to test items because they have become aware of their disordered thinking. Perhaps those women who comprised the diagnosed group have reached a point in therapy at which they realize that their perfectionism is or was neurotic, and therefore, they are more willing to acknowledge it while responding to the items in the questionnaire.

Another possible explanation for the diagnosed group having stronger relationships between NPQ scores and scores on the Drive for Thinness and the Body Dissatisfaction subscales when compared to the undiagnosed group is that members of the diagnosed group were initially identified as eating disordered in part because the level of perfectionism they were experiencing prior to diagnosis had reached neuroticism, therefore driving them to seek treatment. Perhaps those who remain undiagnosed have not reached their personal threshold for perfectionism and therefore do not currently regard it as a problem.

It is also possible that the procedure for diagnosing individuals as eating disordered (e.g., interviews, standardized eating disorder measures) has influenced them (the diagnosed group) in some way that is reflected in their scores on the NPQ. Because the undiagnosed group is just that--undiagnosed--they have not been through the screening process and therefore may view their eating behaviors as well as their thought patterns in a different manner than those women who have sought medical and/or psychiatric attention.

The third hypothesis, that the clinical group and the undiagnosed group would have higher neurotic perfectionism scores than the comparison group, was supported, in

that participants among the diagnosed group and the undiagnosed group had significantly higher scores on the NPQ than did the comparison group. This supports the notion that neurotic perfectionism is related to eating disorder symptoms of college-aged females.

A particularly interesting finding is that the undiagnosed group had higher NPQ scores than the diagnosed group. Although the difference was non-significant, this finding is noteworthy because not only did the expected difference not occur, but the nonsignificant difference was in the opposite direction of the prediction.

One possible explanation for this finding is that members of the undiagnosed group are not currently seeking treatment for their (potential) eating disorder. Members of the diagnosed group were all participating in some type of treatment regime, which may affect the way in which the eating disorder manifests itself. For example, a woman who is in treatment for anorexia would not only be educated about healthy eating habits; she would also be confronting her emotional issues. If perfectionism was a component of those problems, and often times it is (Kerr et. al., 1991; Srinivasagam et. al., 1995; Waller et. al., 1992), then an individual in treatment would be given therapeutic tools to employ when the urge for perfectionism becomes strong. As a result of the treatment, she may respond differently to perfectionism items than she would have prior to beginning therapy.

Although the participants who comprise the diagnosed group and the undiagnosed group are different in terms of eating disorder status, essentially they are not that different from one another, excluding the fact that one group's members have been formally diagnosed as eating disordered. Perhaps the difference between the NPQ scores of the diagnosed group and the undiagnosed group is not significant because the diagnostic process itself is tapping into the relationship between eating disorder symptomology and neurotic perfectionism. It is possible that because extreme levels of perfectionism were

attained, those women who comprised the diagnosed group have sought treatment, therefore affecting their responses to NPQ items.

Several factors may have affected the results of this study. Members of the diagnosed group may have been in recovery as a result of treatment, whereas participants from the undiagnosed group were not being treated for their eating disordered behavior. Therefore, members of the undiagnosed group may have reported more symptoms associated with an eating disorder, such as restricting food intake, than those participants who were participating in treatment. It is important to note that being diagnosed with an eating disorder is similar to being diagnosed with alcoholism (Kerr et. al., 1991; Walsh, 1998). Once an individual is diagnosed, the label always remains, regardless of the length of time free of disturbed eating or alcohol consumption. It is important to keep this in mind when examining the participants' responses to some of the test items in the current study because it may have affected their answers. As an example, a bulimic woman in recovery is still considered to be a bulimic, and for this study, her report that she has not binged or purged for 4 years may be accurate. Due to confidentiality constraints, there was no way of knowing the stage of recovery for members of the diagnosed group.

Social desirability is another factor that may have influenced the results. Participants may have given responses that they viewed as consistent with socially acceptable standards rather than indicating behaviors that they have actually practiced. For example, participants may not want to admit that they induce vomiting after a meal; therefore, they may have responded accordingly when completing the surveys. Consistent with the idea that those participants who comprised the undiagnosed group are in denial about the core issues surrounding their perfectionism and eating disordered behavior, they may have responded in a more socially desirable manner rather than

providing honest responses. Participants may have also been reluctant to reveal such personal information about themselves.

The relatively small sample size in the current study is also an issue, particularly for the diagnosed and undiagnosed groups. An overall sample size of 65 is acceptable for a study of this kind; however, a larger sample would be preferable. There were several factors that restricted the number of participants in each group, including the difficulty locating women who had been diagnosed with anorexia nervosa and/or bulimia nervosa, the fact that the pool of participants was restricted to college-age women, and the fact that the emergence of the third group (i.e., the undiagnosed group) was not anticipated at the beginning of the study.

Assuming that there is a link between neurotic perfectionism and anorexia nervosa and/or bulimia nervosa, early intervention among females with extreme perfectionistic tendencies may avert the development of full-blown eating disorders at a later stage in life. The current findings may help clinicians identify eating disorder-prone females and implement educational programs prior to the onset of difficulties. Additionally, a wider-reaching program of education and discussion might be beneficial. Educational programming could include information about attitudes regarding eating behaviors and the body, and more specifically, it could address neurotic perfectionistic tendencies in young women.

Because the results of this study demonstrate that those women who are diagnosed with an eating disorder had a stronger relationship between NPQ scores and Body Dissatisfaction subscale scores than the comparison group, future studies might focus on possible methods of addressing and/or improving body image in young women. Helping young women improve their body image has the potential to be preventative, in that women with realistic body images are said to suffer from eating disorders less, do not readily adopt rigid, perfectionistic manners of thinking, and are less likely to be



diagnosed with depression (Minarik & Ahrens, 1996). Thus, studies exploring the factors that influence a young woman's body image could also be beneficial.

At the present time, it is unclear if poor body image leads to neurotic perfectionism, or if the reverse is true. Due to the correlational nature of the research, direct, causal relationships are impossible to determine. However, if women learn to appreciate their bodies, regardless of their personal levels of perfectionism, then the body image aspect of eating disorder symptomology might be eliminated, possibly reducing the risk of development and emergence of eating disorders in some women. Although body image acceptance programs may not reach all young women, if just 10 fewer females develop anorexia nervosa or bulimia nervosa as a result, such a program has been successful.

Due to the perplexing findings associated with the third hypothesis, further studies are warranted in which differences are examined between college-age women who are diagnosed with eating disorders and those who remain undiagnosed. As demonstrated by the current study, the undiagnosed population is an untapped resource that can be accessed with relative ease. Once a group of undiagnosed women is identified, a series of studies might investigate differences in their personality, cognitive styles, familial variables, socioeconomic status, etc. as compared to those of women without eating disorders. As Waller et al. (1992) suggested, early intervention among young women who exhibit these characteristics may help them avert the development of full-blown eating disorders during adolescence, therefore aiding in the prevention of eating disorders later in life.

For those who have already been diagnosed with bulimia or anorexia, perhaps treatment of neurotic perfectionism should become one of the core components of eating disorder treatment. According to Bastiani et al. (1995), neurotic perfectionism may be a factor that contributes to resistance to treatment as well as to relapses. Although there is

not a specific treatment for neurotic perfectionism, improvements can be made by investigating some of the underlying cognitive styles that may lead young women to attain an extreme level of perfectionism (Davis, 1997). Once researchers and clinicians identify some of these distorted thought patterns, steps can be taken so that these irrational thought processes can be addressed in treatment.

Overall, this research has demonstrated that there is in fact a relationship between neurotic perfectionism and eating disorder symptomology in college-age women. The present study has clarified a portion of the existing picture, and has laid basic ground work related to neurotic perfectionism as a component of both anorexia nervosa and bulimia nervosa.

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## Appendix

### Neurotic Perfectionism Questionnaire

Please indicate the choice which best applies to each of the following numbered statements.

**SA**= Strongly Agree   **A**= Agree   **DK**= Don't Know   **D**= Disagree   **SD**= Strongly Disagree

- \_\_\_\_\_ 1. I set impossibly high standards for myself.
- \_\_\_\_\_ 2. No matter how well I do, I never feel satisfied with my performance.
- \_\_\_\_\_ 3. At times I feel empty and hollow inside.
- \_\_\_\_\_ 4. If one is to attempt anything, one should do it perfectly or not at all.
- \_\_\_\_\_ 5. I constantly monitor my performance and/or my behavior.
- \_\_\_\_\_ 6. I often feel lonely and/or isolated.
- \_\_\_\_\_ 7. Sometimes I feel as though I don't really know "who I am."
- \_\_\_\_\_ 8. I am harshly critical of myself.
- \_\_\_\_\_ 9. As soon as I succeed in reaching a goal, I have to set myself an even more difficult target to work toward.
- \_\_\_\_\_ 10. At times my emotions get so confused that I cannot make any sense of them.
- \_\_\_\_\_ 11. I often experience feelings of self-contempt or worthlessness.
- \_\_\_\_\_ 12. I believe if I fail someone they will cease to respect me or care for me.
- \_\_\_\_\_ 13. Unless I am constantly working toward achieving a goal, I feel dissatisfied.
- \_\_\_\_\_ 14. I have a clear idea of the kind of person I would like to be or ought to be, but I feel that I always fall short of this.
- \_\_\_\_\_ 15. I find it difficult to obtain excitement or pleasure from life.
- \_\_\_\_\_ 16. Sometimes I feel that if people could see through me they would expose me for the fraud that I sometimes feel I am.

SA= Strongly Agree   A= Agree   DK= Don't Know   D= Disagree   SD= Strongly Disagree

- \_\_\_\_\_ 17. I measure myself by other people's standards.
- \_\_\_\_\_ 18. It feels as if my best is never good enough.
- \_\_\_\_\_ 19. When I get what I want (i.e., achieve my goal), I feel dissatisfied or disillusioned.
- \_\_\_\_\_ 20. I often feel ashamed.
- \_\_\_\_\_ 21. When I most need to be close to a person, I often find myself deliberately trying to reject or push him/her away.
- \_\_\_\_\_ 22. As a child, however well I did, it felt as if it were never enough to please others.
- \_\_\_\_\_ 23. If I do less than my best, I feel guilty and ashamed.
- \_\_\_\_\_ 24. I tend to think in extremes (i.e., feeling "all good" or "all bad" or "all successful" or "all failure.")
- \_\_\_\_\_ 25. I try to avoid the disapproval of others at all costs.
- \_\_\_\_\_ 26. I constantly compare myself with people whom I consider to be better than me.
- \_\_\_\_\_ 27. It often feels as if people make impossible and/or excessive demands of me.
- \_\_\_\_\_ 28. No matter how successful my performance, I still feel that I could or should have done better.
- \_\_\_\_\_ 29. In order to feel o.k. about myself, I have to be what others expect me to be.
- \_\_\_\_\_ 30. Important others (i.e., mother, father, etc.) seem to love me more for HOW WELL I DO rather than for WHO I AM.
- \_\_\_\_\_ 31. As a child, I could not understand what others expected or required of me.
- \_\_\_\_\_ 32. At times, my anger toward other people seems so intense that it feels destructive and unsafe.
- \_\_\_\_\_ 33. I often feel anxious or confused before beginning a task.



**SA=** Strongly Agree   **A=** Agree   **DK=** Don't Know   **D=** Disagree   **SD=** Strongly Disagree

- \_\_\_\_\_ 34. I feel o.k. if I lapse or make mistakes.
- \_\_\_\_\_ 35. I feel guilty a lot of the time.
- \_\_\_\_\_ 36. I sometimes feel like blaming and being hostile toward other people.
- \_\_\_\_\_ 37. I am over-sensitive to criticism.
- \_\_\_\_\_ 38. I often feel like withdrawing from people and social gatherings.
- \_\_\_\_\_ 39. If I do badly at something, I feel like a total failure.
- \_\_\_\_\_ 40. I am always punishing myself.
- \_\_\_\_\_ 41. I am usually good at making decisions.
- \_\_\_\_\_ 42. I feel I have to be perfect in order to gain approval.

Table 1

Correlations Between Neurotic Perfectionism and Subscales of the EDI-2

Subscale	Neurotic Perfectionism
1. Drive for Thinness (DT)	.735 **
2. Bulimia (B)	.393 **
3. Body Dissatisfaction (BD)	.604 **
4. Ineffectiveness (I)	.714 **
5. Perfectionism (P)	.631 **
6. Interpersonal Distrust (ID)	.386 **
7. Interoceptive Awareness (IA)	.737 **
8. Maturity Fear (MF)	.452 **

\*\*  $p < .01$

Table 2

Correlations Between NPQ Scores and EDI-2 Scores for the Comparison Group

	NPQ	DT	B	BD	I	P	ID	IA	MF
1. NPQ	---	.493**	.470**	.442**	.671**	.419*	.343	.687**	.254
2. DT		---	.662**	.646**	.573**	.031	.431*	.422*	.023
3. B			---	.505**	.660**	.058	.569**	.364*	.055
4. BD				---	.533**	.057	.319	.182	.199
5. I					---	-.005	.442**	.499**	.299
6. P						---	-.146	.499**	.053
7. ID							---	.023	.088
8. IA								---	.257
9. MF									---

\*  $p < .05$ \*\*  $p < .01$

Table 3

Correlations Between NPQ Scores and EDI-2 Scores for the Diagnosed Group

	NPQ	DT	B	BD	I	P	ID	IA	MF
1. NPQ	---	.770**	.103	.774**	.666**	.655*	.368	.624**	.415
2. DT		---	.222	.831**	.589**	.781**	.351	.626*	.473*
3. B			---	-.096	.045	.162	.011	.312	.412
4. BD				---	.722**	.790**	.520*	.624**	.377
5. I					---	.494*	.178	.485*	.217
6. P						---	.392	.849**	.450*
7. ID							---	.342	.680**
8. IA								---	.385
9. MF									---

\*  $p < .05$ \*\*  $p < .01$

Table 4

Correlations Between NPQ Scores and EDI-2 Scores for the Undiagnosed Group

	NPQ	DT	B	BD	I	P	ID	IA	MF
1. NPQ	---	.340	.383	.552	.516	.522	.336	.774**	.376
2. DT		---	.151	.640*	.811**	.281	.455	.687*	.599*
3. B			---	.427	.324	.243	.547	.337	.595*
4. BD				---	.502	.442	.497	.434	.708**
5. I					---	.408	.466	.739*	.484
6. P						---	.270	.432	.676*
7. ID							---	.273	.508
8. IA								---	.528
9. MF									---

\*  $p < .05$ \*\*  $p < .01$

Table 5

Mean Scores on Neurotic Perfectionism Questionnaire

<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>F-Ratio</u>
Comparison	33	101.94	27.07	11.94***
Diagnosed	20	136.85	42.14	
Undiagnosed	12	146.17	37.19	

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\*\*\*  $p < .001$