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THE BIG FIVE PERSONALITY FACTORS
AND EATING DISORDER SYMPTOMS
IN COLLEGE WOMEN: A
CORRELATIONAL
STUDY

Thesis

Submitted to

The College of Arts and Sciences of the
UNIVERSITY OF DAYTON

In Partial Fulfillment of the Requirements for
The Degree
Master of Arts in Clinical Psychology

By

Jessica Terese Mueller

Dayton, Ohio

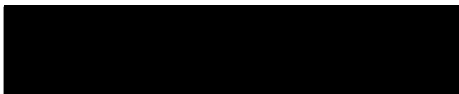
December, 2009

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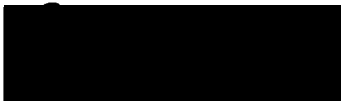
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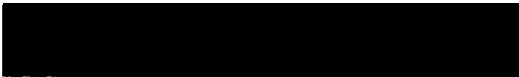


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ABSTRACT

THE BIG FIVE PERSONALITY FACTORS AND EATING DISORDER SYMPTOMS
IN COLLEGE WOMEN: A CORRELATIONAL STUDY

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Advisor: Dr. Roger N. Reeb

It has been observed in past research that individuals with eating disorders tend to exhibit certain personality traits, which may contribute to the development of such disorders. Past studies have documented the relationship between the Big Five personality factors, disordered eating and body image. However, research to date has only consistently noted a positive correlation between the neuroticism factor, disordered eating and body image. Research involving the remaining Big Five factors of conscientiousness, agreeableness, extroversion and openness to experience has yielded contradictory or inconclusive results concerning their relationships to eating behaviors and body image. However, studies had not used measures that allow for examination of personality factors at the facet level. Therefore, this study represents an effort to confirm past research concerning the relationship between neuroticism, eating and body image problems, as well as to explore possible relationships to the other factors at both the factor and facet levels. Participants consisted of 91 female college students, ages 18

through 24. Results confirmed the hypothesis, and exploratory analyses, as well as recommendations for future research are discussed.

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PREFACE

A variety of studies are being performed regarding Big Five personality factors (i.e., neuroticism, conscientiousness, agreeableness, extroversion and openness to experience) and their relationship to eating disorders and body image, in order to determine possible risk and protective factors in the development of such disorders. Because research to date has primarily been limited to correlational studies of the Big Five factors and problems in eating and body image. However, past studies have not examined these relationships at the facet level of the aforementioned personality factors, which might serve to differentiate and explain some inconsistencies found in previous research. The work described in this thesis was performed in response to that need.

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Introduction

According to the National Center for Health Statistics, approximately 66.3% of adults in the United States are overweight and about 32.2% are considered obese (NCHS, 2004). Since the 1960s, the ideal feminine body represented in the media has become increasingly thin, with fashion models presented in the media often meeting the anorexia weight criterion of a BMI of 17.5 or less, whereas the average U.S.-American woman has actually become heavier (Garner, Garfinkel, Schwartz, & Thompson, 1980; Owen & Laurel-Seller, 2000). With the increasing public acceptance of extreme thinness as an ideal for feminine beauty, the incidence of eating disorders, such as anorexia nervosa and bulimia nervosa, has also steadily increased over the course of the past three decades. Likewise, awareness of eating disorders as major health issues has spread dramatically over the past decade, which serves both a preventative role as well as a motivating role for a minority of individuals who consider the status of having an eating disorder to be “en vogue.” However, despite the increasing numbers of individuals with anorexia and bulimia, one cannot conclude that societal pressures to be thin are *causing* these disorders, but rather that they are the result of a complex combination of genetic, environmental, familial, sociocultural, and personality factors.

This introduction will be divided into five sections. The first section will include a description of eating disorders according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), as well as a brief overview of associated disorders and related features of eating disorders. The second section will consist of an explanation of

the Big Five Model of personality and its relevance to eating disorders. The third section will focus on empirical findings regarding personality traits associated with eating disorders and body image. Finally, the fourth section will incorporate the aforementioned areas in an explanation of the present study.

Eating Disorders

According to the DSM-IV-TR, eating disorders are characterized by severe disturbances in eating behavior and in perception of body shape and weight (American Psychiatric Association (APA, 2000). These disorders are divided into the two main categories of Anorexia Nervosa and Bulimia Nervosa, as well as an additional designation of Eating Disorder, Not Otherwise Specified.

Individuals suffering from Anorexia Nervosa refuse to maintain a minimum normal body weight and exhibit an intense fear of becoming fat, which is usually not alleviated by weight loss, even at its extreme. Postmenarcheal females who suffer from anorexia nervosa are amenorrheic (APA, 2000). Two subtypes of Anorexia Nervosa are the restricting and the binge-eating/ purging subtypes. Patients with the restricting subtype limit caloric intake, and persons with the binge-eating/ purging subtype engage in bulimic-like overeating, followed by inappropriate compensatory behaviors. The prevalence rate of anorexia nervosa is about 0.5% in females. In males, the prevalence rate is estimated at one-tenth of 0.5%. However, the incidence of anorexia seems to have increased in recent years (APA, 2000).

Bulimia Nervosa is characterized by binge eating and inappropriate compensatory behaviors such as fasting, excessive exercise, self-induced vomiting, misuse of laxatives, diuretics, or syrup of ipecac to prevent weight gain as well as fear of becoming fat,

though this fear of being fat does not seem to be as intense as in anorectics (APA, 2000). There are two subtypes of Bulimia Nervosa, namely purging and non-purging subtypes. The purging subtype is distinguished from the non-purging subtype by the presence of the inappropriate compensatory behaviors described above. Unlike anorectics, bulimics can be slightly underweight, normal weight, or slightly overweight. Bulimia nervosa has a lifetime prevalence rate of about 1-3% in females. In males, the prevalence rate is approximated as 0.1-0.3% (APA, 2000).

An Eating Disorder Not Otherwise Specified (EDNOS) is used to categorize severe disturbances in eating that may not fully meet criteria for any other specific eating disorder diagnosis, but still display maladaptive eating behaviors and marked distress concerning eating, body shape, and weight. For example, women who meet most criteria for anorexia nervosa, but continue to experience a regular menstrual cycle may be diagnosed with an EDNOS. Likewise, individuals who engage in bingeing and purging behaviors associated with bulimia nervosa, but who display these behaviors with lower frequency than required for diagnosis may be diagnosed with EDNOS. One of the most common examples of EDNOS is binge eating disorder, which is characterized by binge eating which is accompanied by marked distress, but is not followed by inappropriate compensatory behaviors (APA, 2000). Because the diagnosis of EDNOS encompasses a wide range of severely maladaptive eating behaviors, prevalence rates for this disorder have also been estimated to be much higher than for both anorexia and bulimia nervosa (Tsai, Hoerr, & Song, 1998). This also implies the need to conceptualize disordered eating on a continuum, rather than as concrete diagnostic categories.

Sub-Clinical Eating Disturbances

The symptomatology of eating disorders has been recognized as lying on a continuum of eating pathology, which may range from few or no symptoms to clinically diagnosable eating disorders (Killen & Barr, 1996; Mintz, O'Halloran, Mulholland, & Schneider, 1997; Scarano & Kalodner-Martin, 1994; Tylka & Subich, 1999; Gleaves, Brown & Warren, 2004; Williamson, Gleaves & Stewart, 2005; Tylka & Subich, 2004). Individuals who fall in between the two extremes of this continuum would typically display some disordered eating behaviors, but would not meet full criteria for one of the previously mentioned eating disorder diagnoses of the DSM-IV-TR. Such individuals have been classified as having sub-clinical eating disturbances.

Examples of sub-clinical eating disturbances include sub-clinical anorexia nervosa and sub-clinical bulimia nervosa, depending on which disorder symptoms most closely resemble. For instance, such individuals may engage in restrictive dieting, purging, fasting, or binge-eating behaviors, but perhaps not to the extent that would warrant clinical diagnosis. Sub-clinical anorexia nervosa might involve the presence of two or three of the four diagnostic criteria, for example, whereas sub-clinical bulimia nervosa has been described as requiring a minimum of recurrent binge-eating and purging, as well as an excessive fear of becoming fat (Moorhead, Staschwick, Reinherz, Giaconia, Striegel-Moore, & Paradis, 2003).

There is evidence to suggest that individuals with sub-clinical eating disturbances may be at an increased risk of developing a diagnosable eating disorder over the course of their lifetimes (Striegel-Moore, Silberstein, Frensch, & Rodin, 1989; le Grange & Loeb, 2007; Sancho, Arija, Asoray, & Canals, 2007). In a study by Herzog, Hopkins,

and Burns (1993), 82% of individuals who had presented with symptoms of sub-clinical anorexia nervosa or sub-clinical bulimia nervosa had met full clinical criteria for an eating disorder at least once in their lifetime. Furthermore, 46% of the individuals with sub-clinical eating disturbances developed clinically diagnosable eating disorders during the course of the study (Herzog, et al, 1993). Additionally, Sancho, Arija, Asoray, and Canals (2007) found that 73.3% of adolescent girls who had exhibited symptoms of disordered eating at the onset of the study met criteria for an eating disorder two-years later. Therefore, these findings imply the need for further studies targeting these individuals with sub-clinical eating disturbances in order to determine factors that may differentiate those individuals with such disturbances who eventually develop clinical eating disorders from those who do not.

Individuals with sub-clinical eating disturbances are of particular concern in the current study because although clinical eating disorders are becoming increasingly common on college campuses, sub-clinical eating disturbances and generally elevated concerns with weight and body image seem to occur much more frequently in college students than in the general population (Killen & Barr, 1996; Tylka & Subich, 2004). Therefore, college students seem to have an increased risk for developing clinical eating disorders, which are serious, potentially life-threatening health problems.

Associated Disorders

Eating disorders often occur in association with other mental disorders, namely mood disorders, anxiety disorders, substance abuse or dependence, and personality disorders. The most frequently comorbid mood disorders are dysthymic disorder and major depressive disorder. However, it is unclear whether disorders precede the onset of

eating disorders or are a result of the sequelae of the eating disorder in some patients. (APA, 2000).

In the case of anxiety disorders in eating disorder patients, the two most common co-occurring anxiety disorders are social phobia and generalized anxiety disorder, respectively (Godart, Flament, Curt, Perdereau, Lang, Venisse, Halfon, Bizouard, Loas, Corcos, Jeammet, & Fermanian, 2003). It has also been found that in bulimic patients who also meet criteria for either of the above anxiety disorders, the onset of the anxiety disorder precedes the onset of bulimia nervosa in most cases (Godart et al, 2003; Godart, Flament, Lecrubier, & Jeammet, 2000). Additionally, while eating disordered individuals often display obsessive and compulsive behaviors regarding food intake and exercise, they may only meet criteria for obsessive-compulsive disorder if their obsessive and compulsive behaviors also involve items or situations that do not involve food intake or weight loss practices (APA, 2000).

According to the DSM-IV-TR, around 30% of bulimic patients also meet criteria for substance abuse or dependence at some point in their lives. Alcohol abuse and dependence as well as stimulant abuse and dependence seem to be among the most frequent substances used among bulimics (APA, 2000).

Additionally, a large percentage of eating disorder patients have also been found to meet criteria for at least one of the personality disorders (APA, 2000). The most frequent personality disorder diagnosed among eating disorder patients is borderline personality disorder and is most often found in individuals who display binge eating and/or purging behaviors.

In addition to the increased likelihood of individuals with sub-clinical eating disturbances developing clinically diagnosable eating disorders in their lifetimes, there is research to suggest that these individuals may also share personality traits that are similar to those seen in eating disorder patients (Gleaves, Brown & Warren, 2004; Williamson, Gleaves & Stewart, 2005; Tylka & Subich, 2004). Therefore, these individuals may also be at risk for other co-occurring mental disorders that are frequently found in eating disorder patients.

Personality Traits, Eating Disorders and Body Image

Thus far, there have been numerous studies concentrating on the relationship between personality and eating pathology. However, only a minority of these studies has used the Big Five Model of Personality, which currently represents one of the most popular conceptualizations of personality.

The Big Five Model of Personality was first proposed by Thurstone in 1934, using a factor analytic approach using English language adjectives describing personality in order to determine five factors that would serve to illustrate personality variables. In 1945, Cattell then further analyzed adjectives used to describe personality, in order to define 35 variables and 12 underlying factors (Goldberg, 1990). In 1949, Fiske was able to further reduce Cattell's 12 factors down to five factors, which were found to be replicable in a number of studies (Digman, 1990). The Big-Five Model of Personality is based on the notion that one's personality is comprised of varying degrees of the factors of extroversion, neuroticism, conscientiousness, openness, and agreeableness (McCrae & Costa, 1987).

Thus far, there are relatively few studies concerning the relationship of eating disorders and/or body image to the Big Five model of personality. Available studies have found a number of interesting, and at times, contradictory relationships between the Big Five factors of personality and eating disorder symptoms. In the following sections, findings regarding eating disorders and the Big Five personality factors (i.e., neuroticism, extroversion, openness to experience, agreeableness and conscientiousness) will be discussed, and discrepancies in these data will be highlighted.

Neuroticism, Eating Disorders, and Body Image

Neuroticism describes the general presence of negative affect and includes the facets of anxiety, angry hostility, depression, self-consciousness, impulsivity (i.e., acting without consideration of consequences) and vulnerability to stress (i.e., heightened sensitivity to stressful life events) (Costa & McCrae, 1992). Generally, high levels of neuroticism seem to be linked with eating pathology, based on the findings that suggest that anxiety disorders and mood disorders are often associated with eating disorders (APA, 2000). Research exploring the relationship between neuroticism, eating pathology and body image is reviewed below.

Neuroticism and Eating Disorders. Findings have indicated that eating disordered individuals display significantly higher degrees of neuroticism than controls. Although anorectics tend to exhibit greater levels of neuroticism than controls, bulimics have been found to indicate higher levels than both anorectics or controls on measures of neuroticism, most notably in the facet of impulsiveness (Claes, et al, 2006).

Correspondingly, both eating disorder patients with bulimic tendencies, who displayed high degrees of emotional dysregulation and impulsivity, as well as patients

who presented with anorexic symptoms have been found to exhibit significant elevations in the NEO-Five Factor Inventory (NEO-FFI, Costa, & McCrae, 1989) Big Five personality factor of neuroticism (Claes, et al, 2006; Bollen & Wojciechowski, 2004).

When compared to individuals without a history of an eating disorder, individuals with a lifetime history of eating disorders have indicated significantly higher degrees of neuroticism on the NEO. These personality differences in the disordered eating population have also been found in individuals prior to the development of eating disorder symptoms, symptomatic individuals, and in those with lifetime histories of these disorders (Gharderi & Scott, 2000). For instance, recovered bulimic women show increased drive for thinness, body dissatisfaction, and personality dimensions related to neuroticism, such as ineffectiveness, social insecurity, depression, and anxiety when compared to controls (Klump, Strober, Bulik, Thornton, Johnson, Devlin, Fichter, Halmi, Kaplan, Woodside, Crow, Mitchell, Rotondo, Keel, Berrettini, Plotnicov, Pollice, Lilenfeld, & Kaye, 2004).

Research has also indicated that individuals who present with sub-clinical eating disturbances may also exhibit heightened levels of neuroticism. For example, both individuals who engage in emotional and external eating, which are often associated with bulimic symptoms, as well as individuals who exhibit restrained eating practices and anorexic symptoms have indicated elevated levels of neuroticism (Heaven, Mulligan, Merrilees, Woods, & Fairouz, 2001).

Not only have several studies indicated that neuroticism levels tend to be higher in eating-disordered individuals, there is some evidence to suggest that this relationship between neuroticism and eating pathology may be linear in nature. In one study, women

who were diagnosed with eating disorders were compared to those with symptoms of eating disorders who do not meet full diagnostic criteria, as well as asymptomatic women on the NEO-Five Factor Inventory (NEO-FFI; Costa & McCrae, 1989) and on the Eating Disorder Inventory (EDI-2; Garner, 1991). Results indicated that there seems to be a positive linear relationship between scores on the neuroticism factor of the NEO-FFI and scores on the EDI. More specifically, asymptomatic women indicated average neuroticism scores, but as eating disorder symptomatology increased, so too did scores on the neuroticism subscale (Tylka & Subich, 1999).

Neuroticism and Body Image. In a study by Miner-Rubino, Twenge, and Fredrickson (2002), self-objectification (i.e. taking an observer's perspective to one's own appearance) was positively correlated with neuroticism. Similarly, Lundin Kvaem, von Soest, Roald, and Skolleborg (2006) reported that neuroticism was positively related to negative appearance evaluation and high appearance orientation. Therefore, not only do heightened levels of neuroticism seem to correspond with eating disorders symptoms positively in a linear fashion, but they appear to be negatively correlated with body image. In other words, as neuroticism levels increase, so does the presence of eating disorder symptoms, while body image becomes increasingly negative.

Conscientiousness, Eating Disorders, and Body Image

The Conscientiousness factor can be described as self-control and reliability and includes such facets as competence (i.e., capability), order (i.e., organization), dutifulness (i.e., responsibility), achievement striving, self-discipline and deliberation (i.e., consideration) (Costa & McCrae, 1992). Conscientiousness may be related to eating disorders based on the frequent presence of obsessive and compulsive behaviors

surrounding food intake and weight control (Bollen & Wojciechowski, 2004). In the following paragraphs, research on the relationship between conscientiousness and eating pathology is discussed. Unfortunately, there does not appear to be any evidence to suggest the presence of a relationship between conscientiousness and body image. In other words, there were no significant correlations between body image and conscientiousness in studies that had examined Big Five personality traits and body image (Miner-Rubino, Twenge, & Fredrickson, 2002).

Evidence in the area of conscientiousness and eating disorders is somewhat inconsistent when eating disordered individuals are compared to control groups as a whole. For example, findings have indicated that on average, eating disordered individuals tend to display significantly higher degrees of perfectionism and conscientiousness than controls (Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006; Claes, et al, 2006; Bollen & Wojciechowski, 2004). Similarly, there have been data that suggest that elevated degrees of conscientiousness and achievement striving are present in eating disordered individuals' families (Laliberte, Boland, & Leichner, 1999). Conversely, Ghaderi and Scott (2000) reported that persons with a lifetime history of eating disorders have reported significantly lower degrees of conscientiousness compared to those without a history of disordered eating. Therefore, it is unclear whether conscientiousness levels in eating disordered individuals tend to be higher or lower than the general population, or whether this result is only obtained following recovery from an eating disorder. However, there may be differences in conscientiousness between individuals with various eating disorder diagnoses, which may serve to explain such discrepancies in current research data. Additionally, there may be significant differences

between specific conscientiousness facets that may be positively related to certain eating problems, while other facets may be inversely related to certain eating behaviors, which may also account for the aforementioned discrepancies.

Although data involving eating disorders and conscientiousness seem to be inconclusive, there is some evidence to suggest that conscientiousness levels may vary between eating disorder diagnoses and subtypes. For example, Heaven, Mulligan, Merrilees, Woods and Fairouz (2001) found that individuals who engage in bulimic behaviors have indicated lower levels of conscientiousness, whereas, individuals who exhibit restrained eating practices and anorexic symptoms have reported elevated degrees of conscientiousness. Likewise, eating disorder patients with bulimic tendencies, and notably those who displayed high degrees of emotional dysregulation and impulsivity, have been found to display significantly lower levels of conscientiousness when compared to those with those with restrictive eating behaviors (Claes, et al, 2006). Similarly, restricting anorectics exhibited significantly higher degrees of conscientiousness on the NEO-FFI than anorectics of the binge-eating/ purging subtype (Bollen & Wojciechowski, 2004). Additionally, recovered bulimic women have been found to show significantly lower levels of conscientiousness (i.e., self-directedness and cooperativeness) compared to control women, which seems to be similar to their ill counterparts (Klump, et al, 2004). Overall, data has suggested that individuals with restricting tendencies may be more likely to exhibit significantly higher degrees of conscientiousness than those with bulimic behaviors, even after the cessation of eating disorder symptoms. However, it is unclear whether there may be differences at the facet

level of the NEO-PI-R, given that studies in this area have only used the short version (NEO-FFI) to date.

Agreeableness, Eating Disorders, and Body Image

Agreeableness can be defined as sympathy and willingness to help others and is a personality factor that involves trust, straightforwardness, altruism (i.e., the desire to help others), compliance (i.e., conformity with rules), modesty (i.e., humility) and tender-mindedness (i.e., caring for the feelings of others) (Costa & McCrae, 1992).

Agreeableness may be related to elevations in eating pathology, based on the potential for highly agreeable individuals to comply with cultural ideals of thinness (Bollen & Wojciechowski, 2004; Klump, et al, 2004). Below, findings involving the relationship between agreeableness and eating pathology are reviewed. At this time, there does not appear to be any research that indicates the presence of a significant relationship between agreeableness and body image.

Individuals with a lifetime history of eating disorders have indicated significantly lower degrees of agreeableness on the NEO when compared to controls (Gharderi & Scott, 2000). However, although eating disordered individuals as a whole tend to exhibit generally lower levels of agreeableness, some research has suggested that agreeableness levels may differ among bulimics and anorectics. In particular, eating disorder patients with bulimic tendencies, especially those who displayed high degrees of emotional dysregulation and impulsivity, have been found to exhibit significantly lower levels of agreeableness compared to controls and anorectics (Claes, et al, 2006). Furthermore, agreeableness levels have been found to differ between individuals with the restricting subtype of anorexia nervosa compared to those with the binge-eating/purging subtype.

More specifically, restricting anorectics exhibited significantly higher degrees of agreeableness on the NEO-FFI than anorectics of the binge-eating/ purging subtype (Bollen & Wojciechowski, 2004). Overall, eating disordered individuals tend to have lower levels of agreeableness than the general population (Gharderi & Scott, 2000), although bulimics seem to be significantly less agreeable than anorectics (Claes, et al, 2006). However, it is unclear whether these differences may be more pronounced at the facet level because research to date has used the NEO-FFI rather than the longer, more in-depth NEO-PI-R.

Extroversion, Eating Disorders, and Body Image

Extroversion can be described as being sociable, assertive and active. It is a construct that encompasses facets of positive affectivity, such as warmth, gregariousness (i.e., friendliness), assertiveness (i.e., boldness), activity (i.e., desire to be active), excitement-seeking and positive emotions (Costa & McCrae, 1992). It is unclear what role extroversion might play in eating pathology, but it may be reasoned that higher levels of extroversion may be linked to a tendency toward self-objectification, or taking an other-centered perspective in evaluating one's own appearance. Findings concerning extroversion, eating pathology and body image are detailed below.

Extroversion and Eating Disorders. Research has suggested that levels of extroversion may distinguish individuals with anorexic symptoms from those with bulimic symptoms, as well as recovered individuals from patients. Specifically, bulimics tend to exhibit significantly higher levels of extroversion (i.e., novelty seeking) than either controls or anorectics (Claes, et al, 2006). Likewise, compared to controls, recovered bulimics tend to continue to report higher degrees of extroversion (i.e., novelty

seeking), which is also found in recovered anorectics, but not in ill anorectics (Klump, et al, 2004).

Extroversion and Body Image. There is some limited evidence that suggests that low degrees of extroversion may be related to poor body image, whereas high levels of extroversion seem to associate with more positive body image (Heilbrun & Friedberg, 1990). For example, Strober (1981) found that body size overestimation was associated with introversion (i.e., low degrees of extroversion), which may imply that higher levels of extroversion may serve as a protective factor against body dissatisfaction.

Openness, Eating Disorders and Body Image

The Openness factor of personality can be described as curiosity regarding intellectual, aesthetic, and imaginative experiences and includes a variety of facets, such as openness to fantasy, aesthetics (i.e., visual arts or stimuli), feelings, actions, ideas and values (Costa & McCrae, 1992). It may be speculated that individuals who indicate higher levels of openness may be more heavily influenced by media promoting a thin ideal, as well as more open to experimenting with methods of weight loss that constitute forms of eating pathology than the general population (Klump, et al, 2004). In the following paragraph, research exploring the relationship between openness and eating pathology is briefly reviewed. To date, there seem to have been no studies that involve the relationship between openness to experience and body image.

The relationship between the personality variable of openness to experience and eating disorders is unclear because research on the topic has yielded conflicting results. In a study by Gherderi and Scott (2000), individuals with a lifetime history of eating disorders indicated significantly higher degrees of openness on the NEO when compared

to individuals without a history of an eating disorder. Similarly, Heaven, Mulligan, Merrilees, Woods and Fairouz (2001) found that individuals who exhibit restrained eating practices and anorexic symptoms have also reported elevated degrees of openness. Conversely, Claes, et al (2006), reported that patients who presented with anorexic symptoms tended to be perfectionistic and indicated significantly lower scores on openness to experience. Therefore, research regarding eating disorders and openness to experience remains inconclusive. However, there may be important differences between individuals with binge-purging behaviors versus those with restrictive eating tendencies at the facet level of the openness factor. For example, there may be some openness facets that may be positively related to certain eating behaviors, while other facets may be inversely related to certain eating problems.

Summary

To date, there have only been a limited number of studies examining the relationship between Big Five personality traits and eating disorders. Thus far, results of these studies have indicated that there appear to be significant differences in personality factors between eating disordered individuals compared to the general population. More specifically, eating disordered individuals tend to exhibit significantly heightened levels of neuroticism when compared to controls. However, findings concerning the relationships between eating pathology and extroversion, openness, agreeableness and conscientiousness seem to be inconclusive. Nonetheless, a number of studies of the aforementioned Big Five personality factors have yielded results that imply differences in personality between individuals with various diagnoses and subtypes within the eating disorder spectrum. It has yet to be determined whether these findings could be due to

higher or lower levels of one or more facet scores within any given personality factor or whether they are in fact due to overall increases or decreases in these factors in individuals with disordered eating symptoms.

Because much of the research in the area of personality and eating disorders has involved eating disorder patients, there is a need for more studies with individuals who may or may not meet full diagnostic criteria for these disorders but are at risk for these problems, such as a college population. For this reason, the present study represents an effort to generalize findings on personality and eating pathology to a college-aged female population.

Present Study: Personality Factors and Eating Disorder Symptoms in College Population

This study is an attempt to further investigate the hypothesis that certain personality traits represented in the Big Five Personality Model (e.g. Neuroticism, Openness, Extroversion, Agreeableness and Conscientiousness) are associated with disordered eating behaviors in college-aged women. In addition, this study will explore the construct of body image and its relationship to the Big Five personality factors.

A number of studies have demonstrated the presence of a connection between certain personality traits and eating disorders, but there seems to be a dearth of research concerning body image and personality traits. Additionally, there is a paucity of studies that conceptualize personality traits according to the Big Five Model of Personality when examining the relationships between eating pathology and body image with personality factors. Therefore, the present study represents an effort not only to generalize past findings on eating pathology and personality traits, but also to apply these findings on eating pathology and body image to the Big Five personality factors. Because most of the

studies in this area are limited in that they used the NEO-FFI, previous research does not allow an examination of how specific facets of the five factors of personality relate to problems in eating and body image. Additionally, due to contradictory findings concerning disordered eating and the Big Five personality factors of extroversion, agreeableness and notably conscientiousness and openness to experience, this study represents an extension of the literature by attempting to identify differences in personality variables at the facet level in order to provide a more precise examination of ways in which the personality factors (and specific facets) relate to eating disordered behavior and body image problems.

The primary purpose of this study was to test the a priori hypothesis that the personality factor of neuroticism and each of its facets would be positively correlated with both eating disorder tendencies and body image problems because this is the most consistent finding in the available empirical literature (e.g., Claes, et al, 2006). In other words, women with higher levels of neuroticism were expected to have higher levels of eating disorder tendencies and body image problems. This relationship was expected across all facets of neuroticism (anxiety, angry hostility, depression, self-consciousness, impulsivity, and vulnerability to stress). As a secondary purpose, this study conducted an exploratory analysis of the relationship between the remaining factors and facets of the Big Five Model of Personality (i.e., Conscientiousness, Agreeableness, Extroversion and Openness) and eating disorder tendencies and body image.

Method

Participants

Participants in this study consisted of 91 female college students, ages 18 through 24 (Mean = 20, S.D. = 1.10), who were recruited to complete self-report surveys regarding personality variables, eating practices, and demographic information. Participants were given class credit for their participation in the study.

The sample consisted of 14 individuals in their first year at the university (15.6%), 39 in their second year (43.3%), 25 in the third year (27.8%), and 12 in their fourth year at the university (13.3%). Regarding participants' ethnic backgrounds, there were 84 females who described themselves as "Caucasian/White" (93.3%), three who described themselves as "Hispanic/Latina" (3.3%), two who described themselves as "African American/Black" (2.2%), one individual who described herself as "Other" (1.1%), and one who chose not to disclose her ethnicity.

Measures

Demographic Questionnaire. The demographic questionnaire consisted of a series of items pertaining to age, level of education and ethnicity.

Eating Disorder Inventory-3 (EDI-3; Garner, 2005). The Eating Disorder Inventory-3 is a widely used reliable and valid 91-item self-report paper-and-pencil scale that is used to identify psychological features that relate to the development and maintenance of eating disorders. Test items are presented with responses that fall on a

six-point Likert scale that uses the terms Always, Usually, Often, Sometimes, Rarely and Never in order to evaluate frequency of cognitions and behaviors related to eating.

The EDI-3 score can be divided into 18 areas, including six composite scores (Eating Disorder Risk Composite, Ineffectiveness Composite, Interpersonal Problems Composite, Affective Problems Composite, Overcontrol Composite, General Psychological Maladjustment Composite) and 12 primary scales (i.e., Drive for Thinness, Bulimia, Body Dissatisfaction, Low Self-Esteem, Personal Alienation, Interpersonal Insecurity, Interpersonal Alienation, Introceptive Deficits, Emotional Dysregulation, Perfectionism, Asceticism, and Maturity Fears), which consist of 3 eating-disorder-specific scales and 9 general psychological scales that are highly relevant to, but not specific to, eating disorders. High scores indicate clinical elevations related to eating pathology. The EDI-3 has demonstrated good internal consistency with alphas ranging from .84 to .97 for each of the subscales. Additionally, the EDI-3 has been found to have excellent test-retest reliability, with correlation coefficients ranging from .86 to .98 between subscales (Atlas, 2004).

The Multidimensional Body Self Relations Questionnaire – Appearance Scales (MBSRQ-AS; Cash, 1990). The MBSRQ-AS is a 34-item self-report questionnaire that is used to assess various dimensions of body image and is a subscale of the MBSRQ. The MBSRQ is divided into five subscales that pertain to factors related to body image. The subscales are namely Appearance Orientation (i.e., the degree of investment in one's appearance), Appearance Evaluation (i.e., perceived attractiveness or unattractiveness), Self-Classified Weight (i.e. one's evaluation of one's weight), Overweight Preoccupation (i.e., degree of concern about being or becoming overweight and related behaviors, such

as dieting and restrictive eating), Body Areas Satisfaction (i.e., amount of satisfaction with various aspects of appearance). Response options are presented in the form of a five-point Likert scale, ranging from 1 (definitely disagree) to 5 (definitely agree). There is no overall score for the MBSRQ-AS, but scores for each subscale can be determined by summing the numerical values of the items within each subscale. When interpreting the scores for the subscales, higher scores on the Appearance Evaluation and Body Areas Satisfaction subscales are indicative of more positive body image, whereas higher scores on the Appearance Orientation, Overweight Preoccupation and Self-Classified Weight subscales suggest more negative body image. Each of the subscales has been found to have acceptable internal reliability scores, ranging from .70 to .91 (Cash, 2000). Additionally, the MBSRQ-AS has been shown to have concurrent validity coefficients ranging from .28 to .81 (Brown, Cash, and Mikulka, 1990).

Neuroticism, Extroversion, Openness to New Experience – Personality Inventory - Revised (NEO-PI-R, Costa & McCrae, 1992). The NEO-PI-R is a 240-item questionnaire, which is used to evaluate the personality traits contained in the Big Five Model of Personality (i.e., neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness) in adults, ages 17 and older. Each of the factors can be further divided into five facet scores. The facets of neuroticism include anxiety, angry hostility, depression, self-consciousness and impulsiveness. The factor of extroversion is comprised of the facets of warmth, gregariousness, assertiveness, activity, excitement-seeking and positive emotions. The facets of openness include fantasy, aesthetics, feelings, actions, ideas and values. The factor of agreeableness is made up of trust, straightforwardness, altruism, compliance, modesty and tender-mindedness. The

facets of conscientiousness are competence, order, dutifulness, achievement striving and self-discipline. The NEO-PI-R is available in an observer report form as well as self-report form and internal consistency coefficients for both observer report and self-report forms have been found to range from .86-.95 for domain scales and from .56-.90 for facet scales. Items are presented with a five-point Likert scale of possible answers, ranging from “strongly agree” to “strongly disagree.” When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality. The NEO-PI-R has been found to have good construct validity, internal consistency, test-retest reliability, and both convergent and discriminant validity. For example, internal consistency scores range from .86 to .92 between the five factors and .56 to .81 for the facets of the self-report version of the NEO-PI-R. In addition, the neuroticism factor and each of its facets have been found to be highly correlated with the neuroticism scale of the Eysenck Personality Inventory. Additionally, discriminant validity has been shown through the negative correlations between various facets of the NEO-PI-R, such as excitement seeking and seemingly unrelated constructs, such as harm avoidance.

Procedure

Participants were recruited from various undergraduate Psychology, English and Women’s Studies courses. Each participant was given information about the purpose and procedure of the study in the form of an Informed Consent form (Appendix E), after which participants completed paper-and-pencil versions of each of the above measures. As participants submitted their forms, they were each given a Debriefing Form (Appendix F) with further information about the study and contact information for both the researcher and the University Counseling Center, in case questions or concerns arose

subsequent to their participation in the study. Class credit or extra credit was awarded for participation.

Results

The primary purpose of this study was to test the a priori hypothesis that the personality factor of neuroticism and each of its facets would be positively correlated with both eating disorder tendencies and body image problems. In other words, women with higher levels of neuroticism were expected to have higher levels of eating disorder tendencies and body image problems. This relationship was expected to be consistent across all facets of neuroticism (anxiety, angry hostility, depression, self-consciousness, impulsivity, and vulnerability to stress). As a secondary purpose, this study conducted an exploratory analysis of the relationship between the remaining factors and facets of the Big Five Model of Personality (i.e., Conscientiousness, Agreeableness, Extroversion and Openness) and eating disorder tendencies and body image. A correlational analysis was conducted. That is, to examine the hypotheses delineated above regarding Neuroticism (and to pursue the exploratory analysis involving the other personality variables), a matrix of bivariate correlations between (a) a set of variables including eating behavior/problems and body image and (b) overall scores on the five factors of personality and specific facet scores was computed and examined.

Neuroticism, Eating Disorder Tendencies, and Body Image Problems

Neuroticism and Eating Disorder Tendencies

It was hypothesized that the overall factor score for neuroticism would be correlated with eating disorder tendencies and body image scores. This relationship had been expected across all facets of neuroticism (anxiety, angry hostility, depression, self-

consciousness, impulsivity, and vulnerability to stress). This hypothesis was generally supported by the data displayed in Tables 1 and 2. The overall neuroticism score, as well as each of the facets, except vulnerability, were found to be significantly positively correlated with constructs related to eating disorder tendencies on the EDI-3 (i.e., Eating Disorder Risk Composite (EDRC), Bulimia (B), Drive for Thinness (DT), and Body Dissatisfaction (BD)), as indicated in Table 1.

Neuroticism and Body Image

The hypothesis was also supported regarding body image scores on the MBSRQ-AS. Table 2 illustrates that the overall neuroticism score, as well as all of the facets, except vulnerability, were significantly correlated with each of the subscales of the MBSRQ-AS (e.g., Appearance Evaluation, Appearance Orientation, Body Areas Satisfaction, and Overweight Preoccupation), except Self-Classified Weight, which was only significantly correlated with the overall neuroticism score and the facet of depression.

Table 1

NEO-PI-R Neuroticism Facets Correlated with EDI-3 Eating Disorder Subscales

(N=91)

NEO-PI-R Subscales ²	EDI-3 Eating Disorder Risk Subscales ¹			
	Eating Disorder Risk Composite	Bulimia	Drive for Thinness	Body Dissatisfaction
Neuroticism	.695**	.609**	.669**	.580**
Anxiety	.443**	.411**	.483**	.315**
Angry Hostility	.397**	.385**	.406**	.296**
Depression	.594**	.544**	.560**	.494**
Self-Consciousness	.343**	.314**	.385**	.237*
Impulsiveness	.459**	.499**	.399**	.371**
Vulnerability	.174 ^a	.175 ^a	.167	.135

¹ High scores indicate clinical elevations related to eating pathology.

² When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

** Significant at $p < .01$

* Significant at $p < .05$

^a Approached significance ($.05 > p < .10$)

Table 2

NEO-PI-R Neuroticism Facets Correlated with MBSRQ-AS Subscales

(N=91)

NEO-PI-R Subscales ⁴	MBSRQ-AS Subscales ³				
	Appearance Evaluation	Appearance Orientation	Body Areas Satisfaction	Overweight Preoccupation	Self- Class. Weight
Neuroticism	-.628**	.475**	-.642**	.544**	.305**
Anxiety	-.320**	.400**	-.375**	.434**	.021
Angry Hostility	-.270**	.293**	-.398**	.359**	.100
Depression	-.572**	.386**	-.603**	.531**	.317**
Self- Consciousness	-.276**	.201 ^a	-.355**	.340**	.121
Impulsiveness	-.282**	.201 ^a	-.291**	.268**	.197 ^a
Vulnerability	-.086	.091	-.151	.084	.011

³ When interpreting the scores for the subscales, higher scores on the Appearance Evaluation and Body Areas Satisfaction subscales are indicative of more positive body image, whereas higher scores on the Appearance Orientation, Overweight Preoccupation and Self-Classified Weight subscales suggest more negative body image.

⁴ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

** Significant at $p < .01$

^a Approached significance ($.05 > p < .10$)

*Conscientiousness, Eating Disorder Tendencies, and Body Image Problems**Conscientiousness and Eating Disorder Tendencies*

As illustrated in Table 3, the overall conscientiousness score, as well as the facets of competence and self-discipline were found to be significantly negatively correlated with Eating Disorder Risk subscales of the EDI-3. Specifically, the overall conscientiousness score seems to be negatively related to both the Eating Disorder Risk Composite and the Body Dissatisfaction subscales. In other words, individuals who described themselves as being generally more conscientious tended to have a lower risk of disordered eating and reported being more satisfied with their physical appearance than individuals who described themselves as less conscientious. In addition, the competence facet was negatively correlated with each of the Eating Disorder Risk Subscales: the Eating Disorder Risk Composite, and the Bulimia, Drive for Thinness and Body Dissatisfaction subscales. Otherwise stated, individuals who perceive themselves as being more competent seem to report being more satisfied with their physical appearance, while being less driven by a desire to be thinner and having a lower risk of engaging in bulimic or other disordered eating behaviors. Additionally, self-discipline was also negatively correlated with the Eating Disorder Risk Composite, as well as the Drive for Thinness and Body Dissatisfaction subscales, meaning that individuals who report that they are more self-motivated are less likely to also report that they are dissatisfied with their appearance, motivated by a desire to be thinner or at risk for developing an eating disorder.

Conscientiousness and Body Image

Results displayed in Table 4 show that, similarly to the data related to conscientiousness and disordered eating, only the conscientiousness total score, and the competence and self-discipline facets are significantly correlated with the MBSRQ-AS subscales relating to appearance. Specifically, the conscientiousness factor score was positively correlated with the Appearance Evaluation subscale and negatively correlated with the Self-Classified Weight subscale. In other words, individuals who indicate higher levels of conscientiousness tend to evaluate their appearance more positively and tend not to perceive themselves as being overweight. In addition, the competence facet was shown to be positively related to both the Appearance Evaluation and Body Areas Satisfaction subscales, while being negatively related to both the Overweight Preoccupation and Self-Classified Weight subscales. Otherwise stated, individuals who describe themselves as being more competent tend to evaluate their physical appearance more positively and indicate higher degrees of satisfaction with various areas of their body, while being less preoccupied by the thought of being overweight and less likely to perceive themselves as overweight. Likewise, the self-discipline facet was positively correlated with the Appearance Evaluation and Body Areas Satisfaction subscales, while being negatively correlated with the Overweight Preoccupation and Self-Classified Weight subscales of the MBSRQ-AS. In other words, individuals who describe themselves as highly self-motivated are more likely to be satisfied with their appearance and to evaluate their appearance more positively, while being less preoccupied with being overweight and less likely to think of themselves as being overweight.

Table 3

NEO-PI-R Conscientiousness Facets Correlated with EDI-3 Eating Disorder Subscales
(N=91)

NEO-PI-R Subscales ⁶	EDI-3 Eating Disorder Risk Subscales ⁵			
	Eating Disorder Risk Composite	Bulimia	Drive for Thinness	Body Dissatisfaction
Conscientiousness	-.217* (.039)	-.074 (.484)	-.159 (.132)	-.271** (.009)
Competence	-.340**	-.240*	-.274**	-.350**
Order	.012	.128	.039	-.065
Dutifulness	.060	.042	.103	.020
Achievement Striving	.074	.064	.144	.006
Self-Discipline	-.337** (.001)	-.190 ^a (.072)	-.317** (.002)	-.334** (.001)
Deliberation	-.128	.009	-.095	-.184 ^a

⁵ High scores indicate clinical elevations related to eating pathology.

⁶ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

* Significant at $p < .05$

** Significant at $p < .01$

^a Approached significance ($.05 > p < .10$)

Table 4

NEO-PI-R Conscientiousness Facets Correlated with MBSRQ-AS Subscales

(N=91)

NEO-PI-R Subscales ⁸	MBSRQ-AS Subscales ⁷				
	Appearance Evaluation	Appearance Orientation	Body Areas Satisfaction	Overweight Preoccupation	Self- Class. Weight
Conscientious- ness	.221*	-.034	.199 ^a	-.152	-.231*
Competence	.305**	-.112	.371**	-.291**	-.264*
Order	.073	.153	.032	.002	-.114
Dutifulness	.035	-.060	-.025	.031	-.119
Achievement Striving	.063	-.021	-.028	.074	-.130
Self- Discipline	.331**	-.110	.318**	-.243*	-.230*
Deliberation	.040	-.048	.017	.004	.017

⁷ When interpreting the scores for the subscales, higher scores on the Appearance Evaluation and Body Areas Satisfaction subscales are indicative of more positive body image, whereas higher scores on the Appearance Orientation, Overweight Preoccupation and Self-Classified Weight subscales suggest more negative body image.

⁸ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

* Significant at $p < .05$

^a Approached significance ($.05 > p < .10$)

** Significant at $p < .01$

*Agreeableness, Eating Disorder Tendencies, and Body Image Problems**Agreeableness and Eating Disorder Tendencies*

Results of this study indicate that the trust facet was found to be negatively correlated with all of the Eating Disorder Risk Subscales of the EDI-3. Otherwise stated, individuals who endorsed more items related to eating disorder tendencies also had a propensity for being more skeptical of other people than those who endorsed fewer items relating to disordered eating. In addition, the straightforwardness facet was inversely related to both the Eating Disorder Risk Composite and Drive for Thinness. Therefore, individuals in this study who admit to being motivated by the desire to be thin and/or those who endorse items relating to disordered eating tendencies also indicated that they tend to be less frank and perhaps more willing to manipulate others than those who endorsed fewer items related to disordered eating and motivation to be thin. The modesty facet was also positively correlated with the Eating Disorder Risk Composite, Bulimia, and Body Dissatisfaction subscales on the EDI-3 (Table 5). In other words, individuals who endorsed more items related to being displeased with their appearance, and/or those who admit to having bulimic and/or general eating disorder tendencies also indicated higher levels of humility than those who have less of a tendency toward disordered eating.

Agreeableness and Body Image

The data in Tables 5 and 6 indicate that the only facet related to body image problems is modesty. Specifically, modesty was positively correlated with Body Dissatisfaction on the EDI-3 (Table 5), while it was positively correlated with Self-Classified Weight and inversely related to both the Appearance Evaluation and Body

Areas Satisfaction subscales of the MBSRQ-AS (Table 6). In other words, individuals who describe themselves as being humble tended to evaluate their appearance more negatively; be less pleased with their physical appearance; and perceive themselves as weighing more than those who scored lower on the modesty facet.

Table 5

NEO-PI-R Agreeableness Facets Correlated with EDI-3 Eating Disorder Subscales

(N=91)

	EDI-3 Eating Disorder Risk Subscales ⁹			
	Eating Disorder Risk Composite	Bulimia	Drive for Thinness	Body Dissatisfaction
NEO-PI-R Subscales ¹⁰				
Agreeableness	-.179 ^a	-.080	-.198 ^a	-.164
Trust	-.424 ^{**}	-.370 ^{**}	-.380 ^{**}	-.374 ^{**}
Straightforwardness	-.225 [*]	-.096	-.282 ^{**}	-.184 ^a
Altruism	-.168	-.085	-.199 ^a	-.140
Compliance	-.181 ^a	-.159	-.194 ^a	-.135
Modesty	.215 [*]	.243 [*]	.105	.231 [*]
Tender-Mindedness	-.005	.198 ^a	.021	-.116

⁹ High scores indicate clinical elevations related to eating pathology.

¹⁰ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

^a Approached significance ($.05 > p < .10$)

^{**} Significance at $p < .01$
^{*} Significance at $p < .05$

Table 6

NEO-PI-R Agreeableness Facets Correlated with MBSRQ-AS Subscales

(N=91)

NEO-PI-R Subscales ¹²	MBSRQ-AS Subscales ¹¹				
	Appearance Evaluation	Appearance Orientation	Body Areas Satisfaction	Overweight Preoccupation	Self- Class. Weight
Agreeableness	-.035	-.179 ^a	.130	-.264 [*]	-.013
Trust	.342 ^{**}	-.168	.513 ^{**}	-.381 ^{**}	-.238 [*]
Straight- forwardness	.005	-.257 [*]	.143	-.312 ^{**}	-.057
Altruism	.042	.062	.127	-.252 [*]	-.063
Compliance	.023	-.072	.138	-.161	.071
Modesty	-.481 ^{**}	-.137	-.382 ^{**}	.026	.271 ^{**}
Tender- Mindedness	-.059	-.050	-.024	-.011	.051

¹¹ When interpreting the scores for the subscales, higher scores on the Appearance Evaluation and Body Areas Satisfaction subscales are indicative of more positive body image, whereas higher scores on the Appearance Orientation, Overweight Preoccupation and Self-Classified Weight subscales suggest more negative body image.

¹² When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

^a Approached significance ($.05 > p < .10$)

^{*} Significant at $p < .05$

^{**} Significant at $p < .01$

*Extroversion, Eating Disorder Tendencies, and Body Image Problems**Extroversion and Eating Disorder Tendencies*

As indicated by the data in Table 7, the total extroversion score, as well as the assertiveness facet were significantly negatively correlated with all the EDI-3 subscales. Therefore, participants who indicated higher levels of extroversion and assertiveness endorsed fewer items relating to eating disorder tendencies. Additionally, the positive emotions facet was also significantly negatively related to all of the EDI-3 subscales, except Body Dissatisfaction, which only approached statistical significance. In other words, individuals who displayed more positive emotions indicated fewer tendencies toward disordered eating, although they might have indicated some dissatisfaction with their physical appearance. In addition, bulimia was found to be significantly negatively correlated with the warmth facet. Therefore, individuals who endorsed items related to bulimic behaviors tended to describe themselves as more reserved and less affectionate and friendly than others with fewer bulimic tendencies.

Extroversion and Body Image

The data outlined in Table 8 indicate the presence of a statistically significant positive correlation between the Body Areas Satisfaction subscale of the MBSRQ-AS and the total extroversion score, as well as with all of the facets except activity and excitement-seeking (Table 8). In other words, individuals with higher levels of extroversion tended to be more satisfied with their physical appearance than those with lower levels of extroversion. However, there did not appear to be a statistically significant relationship between activity and body image. In addition, excitement-seeking was not significantly correlated with any of the subscales of the MBSRQ-AS, except

there was a positive relationship between excitement-seeking and the Body Areas Satisfaction subscale that approached, but did not reach, statistical significance.

Table 7

NEO-PI-R Extroversion Facets Correlated with EDI-3 Eating Disorder Subscales

(N=91)

NEO-PI-R Subscales ¹⁴	EDI-3 Eating Disorder Risk Subscales ¹³			
	Eating Disorder Risk Composite	Bulimia	Drive for Thinness	Body Dissatisfaction
Extroversion	-.247*	-.315**	-.181 ^a	-.203 ^a
Warmth	-.151	-.222*	-.133	-.094
Gregariousness	-.080	-.189 ^a	-.052	-.031
Assertiveness	-.308**	-.305**	-.234*	-.287**
Activity	.068	.029	.127	.024
Excitement-Seeking	-.081	-.109	-.051	-.070
Positive Emotions	-.232*	-.272**	-.207*	-.175 ^a

¹³ High scores indicate clinical elevations related to eating pathology.

¹⁴ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

* Significant at $p < .05$

** Significant at $p < .01$
^a Approached significance ($.05 > p < .10$)

Table 8

NEO-PI-R Extroversion Facets Correlated with MBSRQ-AS Subscales

(N=91)

NEO-PI-R Subscales ¹⁶	MBSRQ-AS Subscales ¹⁵				
	Appearance Evaluation	Appearance Orientation	Body Areas Satisfaction	Overweight Preoccupation	Self- Class. Weight
Extroversion	.413**	.111	.474**	-.243*	-.362**
Warmth	.303**	.094	.360**	-.140	-.183 ^a
Gregariousness.195 ^a		.251*	.236*	-.089	-.222*
Assertiveness	.488**	-.024	.500**	-.316**	-.426**
Activity	.078	-.014	-.003	.048	-.126
Excitement- Seeking	.109	.147	.196 ^a	-.110	-.145
Positive Emotions	.307 (.003)	-.141 (.184)	.400 (.01)	-.240 (.022)	-.239 (.023)

¹⁵ When interpreting the scores for the subscales, higher scores on the Appearance Evaluation and Body Areas Satisfaction subscales are indicative of more positive body image, whereas higher scores on the Appearance Orientation, Overweight Preoccupation and Self-Classified Weight subscales suggest more negative body image.

¹⁶ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

** Significant at $p < .01$

* Significant at $p < .05$

^a Approached significance ($.05 > p < .10$)

Openness, Eating Disorder Tendencies, and Body Image Problems

Openness and Eating Disorder Tendencies

Results of the present study indicated no significant correlations between the openness factor or any of its facets and eating disorder tendencies (Table 9).

Openness and Body Image

Regarding the relationship between the openness factor and body image, results of the present study indicated that there were two significant negative correlations concerning the facet of values and both the Appearance Orientation and the Overweight Preoccupation subscales of the MBSRQ-AS (Table 10).

Table 9

NEO-PI-R Openness Facets Correlated with EDI-3 Eating Disorder Subscales

(N=91)

	EDI-3 Eating Disorder Risk Subscales ¹⁷			
	Eating Disorder Risk Composite	Bulimia	Drive for Thinness	Body Dissatisfaction
NEO-PI-R Subscales ¹⁸				
Openness	-.024	-.040	-.074	.027
Fantasy	-.043	-.085	-.099	.030
Aesthetics	.127	.072	.082	.153
Feelings	.113	.138	.107	.079
Actions	-.114	-.168	-.197 ^a	.003
Ideas	.064	.032	.109	.029
Values	-.078	.044	-.117	-.085

¹⁷ High scores indicate clinical elevations related to eating pathology.

¹⁸ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

^a Approached significance (.05 > *p* < .10)

Table 10

NEO-PI-R Openness Facets Correlated with MBSRQ-AS Subscales

(N=91)

NEO-PI-R Subscales ²⁰	MBSRQ-AS Subscales ¹⁹				
	Appearance Evaluation	Appearance Orientation	Body Areas Satisfaction	Overweight Preoccupation	Self- Class. Weight
Openness	.075	-.101	-.012	-.099	-.036
Fantasy	.108	-.085	.069	-.077	-.030
Aesthetics	-.038	.043	-.177 ^a	.093	.042
Feelings	-.003	.153	-.009	.005	-.054
Actions	-.022	-.184 ^a	.001	-.126	.137
Ideas	.065	-.061	-.033	.032	-.116
Values	.065	-.220 [*]	.023	-.217 ^a	-.076

¹⁹ When interpreting the scores for the subscales, higher scores on the Appearance Evaluation and Body Areas Satisfaction subscales are indicative of more positive body image, whereas higher scores on the Appearance Orientation, Overweight Preoccupation and Self-Classified Weight subscales suggest more negative body image.

²⁰ When interpreting scores of the NEO-PI-R, higher scores indicate elevations in facets or factors of the Big Five Model of personality.

^a Approached significance ($.05 > p < .10$)

^{*} Significant at $p < .05$

Discussion

Because the primary purpose of this study was to investigate the a priori hypothesis concerning a possible positive correlations between neuroticism and all of its facets with both eating disorder tendencies and body image problems, the results of this statistical analysis are detailed and discussed in terms of their relation to previous and possible future research in this area. Also discussed in this section are results of exploratory analyses concerning the other four Big Five personality factors (i.e., conscientiousness, agreeableness, extroversion and openness to experience) and eating pathology and body image issues. Limitations of this study and recommendations for future research will also be outlined.

Neuroticism, Eating Disorder Tendencies, and Body Image Problems

Neuroticism and Eating Disorder Tendencies

The empirical literature to date has fairly consistently indicated the presence of a positive correlation between eating disorder tendencies and elevations in the personality factor of neuroticism and traits related to its facets (e.g., Bollen & Wojciechowski, 2004; Claes, et al, 2006; Ghaderi & Scott, 2000; Heaven, et al, 2001; Klump, et al, 2004; Tylka & Subich, 1999). In other words, women with higher levels of neuroticism have indicated higher levels of eating disorder tendencies than other women. This relationship also seems to generalize to traits that represent constructs similar to the facets of neuroticism (e.g., anxiety, depression, self-consciousness and impulsivity). However,

since past research has used the abbreviated NEO-FFI, the extent to which this finding is consistent across the facets of neuroticism (i.e., anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability to stress) was previously unclear, though the present study suggests that this may be the case.

The results of the present study indicated that the overall neuroticism score, as well as the facets of anxiety, depression, angry hostility, self-consciousness and impulsivity were found to be significantly positively correlated with constructs related to eating disorder tendencies on the EDI-3 (i.e., Eating Disorder Risk Composite (EDRC), Bulimia (B), Drive for Thinness (DT), and Body Dissatisfaction (BD)), as indicated in Table 1. In other words, individuals who tend to be more anxious, depressed, angry, self-conscious and/or impulsive tended to endorse a greater number of items relating to eating disorder tendencies than individuals who scored lower on the above facet subscales. The only facet that did not significantly correlate positively with eating disorder tendencies was vulnerability to stress, although it did display a tendency toward a positive correlation that did not reach statistical significance. Therefore, some individuals in this study who describe themselves as highly vulnerable to stress may have had a slight tendency to endorse more items relating to eating disorder tendencies, but this does not seem to hold true for a significant majority of individuals who are more vulnerable to stress.

It may be speculated that persons who simply tend to describe themselves as being more vulnerable to stress may or may not also endorse items relating to other neuroticism facets. Therefore, such individuals who score higher in the facet of vulnerability to stress may endorse items such as "I often feel helpless and want someone

to solve my problems;” may be more likely to defer to others in response to stress. Unlike other facets of Neuroticism, this tendency may or may not be characteristic of individuals with eating disorders.

Because some research has indicated that there may be differences in neuroticism scores between individuals with bulimic versus restrictive/anorexic tendencies, most notably in the facet of impulsivity (Claes, et al, 2006), future research in this area should focus on differentiating between the subtypes of disordered eating behavior. The present study was unable to make this distinction between restricting and bulimic tendencies because the eating disorder measure used (EDI-3) does not contain items specifically related to restrictive eating practices. Therefore, it may be of interest to future studies to incorporate a measure that specifically addresses restrictive eating, as well as bulimic behaviors.

Neuroticism and Body Image

Available research in the area of neuroticism and body image has fairly consistently demonstrated a positive relationship between body image problems and elevations in the personality factor of neuroticism and traits related to its facets (e.g., Claes, et al, 2006). In other words, women with higher levels of neuroticism tend to show higher levels of eating disorder tendencies than other women. Because body image issues are characteristic of eating disorders, it might be presumed that body image problems would also correlate with each of the facets of neuroticism (anxiety, angry hostility, depression, self-consciousness, impulsivity, and vulnerability to stress). However, because past research involving the Five Factor Model of Personality and disordered eating has only used the abbreviated version of the NEO (i.e., NEO-FFI), it

has been unclear whether the relationship between neuroticism and body image would hold true across all of the neuroticism facets. Therefore, the present study represents an effort to clarify the nature of the relationship between neuroticism and its facets with disordered eating and body image.

The data of this study indicate that the overall neuroticism score, as well as all of the facets, except vulnerability, were significantly correlated with each of the subscales of the MBSRQ-AS (e.g., Appearance Evaluation, Appearance Orientation, Body Areas Satisfaction, and Overweight Preoccupation), except Self-Classified Weight, which was only significantly correlated with the overall neuroticism score and the facet of depression.

It may be speculated that because individuals with high scores on the depression facet tend to endorse statements such as "I have a low opinion of myself," and "Sometimes I feel completely worthless," these individuals may be more likely to estimate their body weight as being higher or less desirable than others who indicated low scores in the depression facet. Similarly, it may be posited that individuals who indicate overall higher levels of neuroticism may tend to take a more negative view of themselves, thus may be more likely to estimate their weight as being higher and more undesirable than those with lower levels of neuroticism.

In addition, there was a significant positive correlation between Appearance Orientation, Overweight Preoccupation, and both the overall neuroticism score and each of its facets, with the exception of vulnerability to stress. Otherwise stated, individuals who described themselves as being more anxious, depressed, angry, self-conscious and/or impulsive also had a tendency to endorse items that indicate that they tend to focus more

attention on their appearance and that they are more preoccupied with being or becoming overweight than individuals who scored lower in each of the aforementioned facets.

Additionally, there was a significant negative correlation between Appearance Evaluation, Body Areas Satisfaction, and both the overall neuroticism score and each facet, except vulnerability to stress. In other words, individuals who displayed higher levels of anxiety, depression, anger, self-consciousness and/or impulsivity tended to evaluate their physical appearance more negatively and were less satisfied with their physical appearance than those who scored lower on each of the facets of neuroticism. In addition, a significant positive correlation was found between overall neuroticism, depression and Self-Classified Weight. Therefore, individuals who indicated higher levels of neuroticism and depression also evaluated themselves as having a higher weight than those who were lower in neuroticism and depression.

However, it may be surmised that individuals who are more vulnerable to stress, but do not necessarily display higher levels of other neuroticism facets (e.g., anxiety, depression, angry aggression, self-consciousness and impulsiveness) may focus their attention more heavily on current stressors, rather than on their appearance, per se. Therefore, these individuals may be less likely to report being preoccupied by or dissatisfied by their appearance than others who may be less vulnerable to stress.

The results of this study seem to be consistent with other studies in the area of neuroticism and body image, which have found that individuals who score higher on measures of neuroticism tend to focus more time on evaluating their appearance, while indicating a more negative evaluation of their appearance (Lundin, et al, 2006; Miner-Rubino, et al, 2002). However, due to the differences seen in the vulnerability to stress

facet concerning both eating disorder tendencies and body image, future research may do well to focus on differences between individuals with high scores in the neuroticism factor and its facets, and those who score particularly high in the vulnerability to stress facet.

Conscientiousness, Eating Disorder Tendencies, and Body Image Problems

Conscientiousness and Eating Disorder Tendencies

Overall, the results indicate that high scores in the conscientiousness factor, especially in the facets of competence and self-discipline, may be protective factors against developing eating disorders. In other words, those who endorsed statements relating to possessing higher levels of competence and self-discipline tended to exhibit fewer eating disorder symptoms than those with lower levels of competence and self-discipline.

Data from this study indicate that the overall conscientiousness score seems to be negatively related to both the Eating Disorder Risk Composite and the Body Dissatisfaction subscales. In other words, individuals who described themselves as being generally more conscientious tended to have a lower risk of disordered eating and reported being more satisfied with their physical appearance than individuals who described themselves as less conscientious.

It may be surmised that individuals who are more concerned with adhering to externally imposed norms and measures of success may be at a lower risk for developing eating disorders because their attention may be more heavily focused on conforming to social norms and expectations than others. Therefore, they may be less focused on their

own physical appearance and may also be less likely to utilize unhealthy, socially less-acceptable means of weight control than individuals who are less conscientious.

Individuals who report being more competent seem to indicate that they are more satisfied with their physical appearance, while being less driven by a desire to be thinner and having a lower risk of engaging in bulimic or other disordered eating behaviors than others with lower levels of perceived competence. Additionally, individuals who report that they are more self-motivated are less likely to also endorse items indicating that they are dissatisfied with their appearance, motivated by a desire to be thinner or at risk for developing an eating disorder.

It may be speculated that individuals who see themselves as being more competent and disciplined may tend to see themselves as being more capable of coping with life stressors and with changes in their appearance and weight than others who perceive themselves as less disciplined and competent. Such individuals may then tend to focus their energies on constructive solutions to problems, rather than engaging in unhealthy behaviors related to food.

Past research in the area of conscientiousness and eating disorders has been inconclusive when comparing eating disordered individuals to the general population. For example, some findings have indicated that eating disordered individuals tend to display significantly higher degrees of conscientiousness than controls (Lilenfeld, et al, 2006; Claes, et al, 2006; Bollen & Wojciechowski, 2004), whereas, others reported that persons with a lifetime history of eating disorders have reported significantly lower degrees of conscientiousness compared to controls (Gharderi & Scott, 2000). Additionally, there has been some empirical evidence suggesting that conscientiousness levels may vary between

certain disordered eating practices. Specifically, data have suggested that individuals with restricting tendencies may be more likely to exhibit significantly higher levels of conscientiousness than those with bulimic behaviors, even after the cessation of eating disorder symptoms (Bollen & Wojciechowski, 2004; Claes, et al, 2006; Heaven, et al, 2001). However, due to the fact that the present study was unable to accurately differentiate between bulimic and restrictive eating patterns, this trend has yet to be explored at the facet level. Nonetheless, data from this study appear to specify facets that may be more closely related to a reduction in the risk of eating disorder symptoms (e.g., overall conscientiousness, competence and self-discipline), which helps to elaborate on previous studies that were unable to differentiate between the Big Five personality factors at the facet level.

Conscientiousness and Body Image

It seems that higher degrees of conscientiousness, especially in the facets of competence and self-discipline tend to be related to a more positive body image. Because past research had not presented any evidence to suggest a relationship between conscientiousness and body image (Miner-Rubino, et al, 2002), the results of this study represent an exploratory analysis of this relationship.

However, it may be speculated that individuals who are generally more conscientious may tend to direct their energy toward achieving their goals regarding outward measures of success, rather than focusing on their physical appearance. Also, individuals who endorse items associated with being more competent and self-disciplined may tend to direct their attention toward areas in their life where they feel most competent, rather than focusing on their physical appearance. Alternatively, these

individuals may be satisfied with their appearance, just as they seem to be satisfied with their performance in other areas of their life.

Because there did not seem to be any previous research indicating the presence of a relationship between conscientiousness and body image, results of this study represent an exploratory analysis of this relationship.

Agreeableness, Eating Disorder Tendencies, and Body Image Problems

Agreeableness and Eating Disorder Tendencies

Results of this study indicate that individuals who indicate lower levels of trust and straightforwardness, as well as those who endorse items related to higher degrees of modesty tend to admit to engaging in more behaviors associated with disordered eating. Therefore, individuals who tend to be more skeptical of the motives of others, those who are more likely to manipulate others, and those who are more humble may be more likely to engage in disordered eating practices.

It may be speculated that individuals who are more prone to manipulate others may in turn be more cynical and suspicious of others' motives. Because disordered eating practices tend to fall outside of the range of normal eating behaviors, individuals who engage in such practices may use deception to hide their behaviors from others. This may then lead them to be more skeptical about other people's motives, due to their own use of deception.

Regarding the relationship between modesty and disordered eating, it is plausible that individuals who tend to be more concerned with their appearance may then be more likely to report themselves as being more modest, in that they may generally have a low

opinion of themselves than others who do not concern themselves greatly with their appearance and eating practices.

These results seem to elaborate on previous research, which has shown that individuals exhibiting disordered eating tendencies display lower levels of agreeableness compared to the general population, but that persons who engage in bulimic behaviors tend to have lower levels of agreeableness than others with eating disturbances related to restricting caloric intake (Bollen & Wojciechowski, 2004; Claes, et al, 2006; Ghaderi & Scott, 2000). However, results of this study seem to indicate which facets of agreeableness in particular may be more closely tied with disordered eating behavior (e.g., trust, straightforwardness and modesty). Nonetheless, this study was limited by not using a measure of disordered eating that could accurately differentiate between bulimic and restrictive eating tendencies.

Agreeableness and Body Image

Results regarding agreeableness and body image indicate that individuals who indicate higher levels of modesty tend to be less satisfied with their physical appearance and estimate their weight as being higher than those who scores lower on the modesty facet. It may be reasoned that individuals who are generally more humble and self-effacing may genuinely perceive themselves as being less physically attractive than others who have lower degrees of modesty.

At the onset of this study, there did not appear to be any research that indicated the presence of a significant relationship between agreeableness and body image. Therefore, the results of this study represent a purely exploratory analysis of this relationship.

*Extroversion, Eating Disorder Tendencies, and Body Image Problems**Extroversion and Eating Disorder Tendencies*

Results of this study indicated extroversion may be a protective factor against the development of eating disorders because individuals with higher total extroversion scores, and specifically those who indicated higher levels of assertiveness were less likely to report engaging in disordered eating practices than those with lower extroversion and assertiveness scores. One may speculate that individuals who are generally more extroverted may be less prone to engage in disordered eating behaviors because they may tend to experience higher levels of excitement and positivity, which seem to be counter to negative, unhealthy practices seen in eating disorders.

It may further be reasoned that individuals with higher levels of assertiveness may feel better able to communicate their thoughts and emotions to others, and may thus feel that they are better able to solve problems in their lives more successfully, including those relating to eating and physical appearance. These individuals may possess more effective coping skills than individuals with lower levels of assertiveness.

Additionally, individuals who displayed more positive emotions indicated fewer tendencies toward disordered eating, even if they may have indicated some dissatisfaction with their physical appearance. It may be posited that individuals who experience higher levels of positive emotions in general may be less inclined to engage in negative, unhealthy behaviors associated with eating disorders than those who may not experience positive emotions as frequently, even if they are in some way dissatisfied with their appearance.

In addition, individuals who indicated engaging in bulimic behaviors tended to describe themselves as more reserved and less affectionate and friendly than others with fewer bulimic tendencies. It may be speculated that individuals who engage in bulimic behaviors may be more distant with others in part due to their own shame associated with engaging in socially unacceptable, abnormal eating behaviors (e.g., self-induced vomiting).

Although previous research has not indicated a relationship between extroversion and eating disorder tendencies, there have been studies that have outlined a possible relationship between novelty seeking and disordered eating or lifetime history of eating disorders, notably in the area of bulimic tendencies (Claes, et al, 2006; Klump, et al, 2004). Based on the data collected in the present study, there did not appear to be a statistically significant relationship between the excitement-seeking facet of extroversion, which may be similar to the construct of novelty seeking, and eating disorder tendencies.

Extroversion and Body Image

Data from the current study indicate that individuals with higher levels of extroversion may tend to be more satisfied with their physical appearance than those with lower levels of extroversion. However, there did not appear to be a statistically significant relationship between activity and body image. In this case, it may be surmised that some individuals who are more active may have a positive body image, while others may not. It may be plausible that individuals who are more likely to engage in certain activities that involve increased levels of physical conditioning may be more concerned with their overall physical health and weight than others who may prefer activities that are less related to physical conditioning.

In addition, excitement-seeking seemed to be unrelated to the body image subscales, except that there appeared to be a trend toward excitement-seeking being positively related to Body Areas Satisfaction. It may be speculated that individuals who describe themselves as being more excitement-seeking may have a slight tendency to be more satisfied with their physical appearance, but this level of satisfaction may differ between individuals, based on what types of excitement they typically enjoy. In other words, those who may consider performing arts as an appropriate medium for their excitement-seeking may be more concerned with their appearance than others who may enjoy other activities that may be less focused on appearance.

These results seem to be consistent with the previous research that has suggested that extroversion may be inversely related to body image problems (Heilbrun & Friedberg, 1990; Strober, 1981). In other words, both in this study and in previous studies on the topic, individuals with higher levels of extroversion seem to have fewer body image problems than those with lower levels of extroversion. However, it remains unclear how the facets of activity and excitement-seeking in particular may relate to body image.

Openness, Eating Disorder Tendencies, and Body Image Problems

Openness and Eating Disorder Tendencies

Results of the present study did not indicate the presence of any significant correlations between the openness factor or any of its facets and eating disorder tendencies. Because the relationship between the personality variable of openness to experience and eating disorders has been unclear, the results of the present study represent a purely exploratory analysis. Previously, some studies had indicated that there

may be a positive correlation between openness and eating disorder tendencies (Gherderi & Scott, 2000; Heaven, et al, 2001). Other studies reported that individuals with anorexic symptoms indicated significantly lower scores on openness to experience (Claes, et al, 2006). Therefore, data regarding eating disorders and openness to experience remain inconclusive.

It may be important to note, however, that there may be some differences between individuals with binge-purging behaviors versus those with restrictive eating tendencies with regard to openness to experience, notably at the facet level. However, the present study was limited in being unable to differentiate between restricting and bulimic behaviors.

Openness and Body Image

Results of the present study indicated that there were two significant negative correlations with the facet of values and both the Appearance Orientation and the Overweight Preoccupation subscales of the MBSRQ-AS. Therefore, from this data it may be surmised that individuals who are more open to various values may be less concerned with superficial qualities, such as appearance weight than others who are less open to other values. Prior to the onset of this study, there had been no available previous studies found involving the relationship between openness to experience and body image.

Limitations of the Present Study

Because the present study was restricted to college-aged females, the results may not be representative of older or younger females or of males. Additionally, the results represent a compilation of responses from students at a private, Catholic university, which may differ from responses of females in other environments. In addition, the

participants in this study were predominantly Caucasian, U.S.-American women.

Therefore, the results may not generalize to females of other countries or ethnic groups and thus may not accurately represent women of the general population. Finally, present study used the EDI-3 as a measure of eating disorder tendencies, which does not contain a separate subscale to differentiate between general disordered eating and restricting tendencies, which, according to previous research, may account for some inconsistent or contradictory results in this and other related studies.

Recommendations for Future Research

Based on the limitations of this study, it is recommended that future research in the area of eating disorder tendencies, body image problems and personality factors utilize a measure of eating disorder tendencies that makes a clearer distinction between bulimic tendencies, general disordered eating and restricting tendencies. Additionally, future studies may use a more ethnically, age and gender diverse group of participants, in order to explore possible differences between ethnic groups, age groups, and males and females.

Conclusion

It has been observed that individuals with eating disorders tend to exhibit certain personality traits, which may contribute to the development and maintenance of such disorders. Past studies have documented the relationship between the Big Five personality factors, disordered eating habits and body image. However, research to date has only consistently noted a positive correlation between the neuroticism factor and eating and body image problems. This relationship corresponds with the clinical findings

that individuals who present with eating disorders tend to also have a higher incidence of anxiety and affective disorders compared to the general population.

Research involving the remaining Big Five factors of conscientiousness, agreeableness, extroversion and openness to experience has yielded contradictory or inconclusive results concerning these factors' relationships with problematic eating behaviors and body image. However, past studies had not used Big Five personality measures that allowed for examination of personality factors at the facet level, which may help to detail possible reasons for contradictory results at the factor level. Therefore, the present study represents an effort to confirm past research concerning the positive correlation between neuroticism, eating problems and body image issues, as well as to explore possible relationships between the other factors and eating and body image at both the factor and facet levels.

Results of the present study generally supported the a priori hypotheses that neuroticism and each of its facets (except vulnerability to stress) would be positively correlated with both eating disorder risk and negative body image. Specifically, the facets of anxiety, depression, angry hostility, impulsivity and self-consciousness, as well as the overall neuroticism score were found to be positively related to increased risk of developing an eating disorder, as well as bulimic behaviors, heightened motivation to be thin and a general dissatisfaction with one's body. In other words, individuals who displayed elevated levels of these facets of neuroticism were more prone to disordered eating practices than others who did not report such elevations. Correspondingly, these individuals with elevated scores in these facets and overall neuroticism reported having a more negative perception of their own weight and appearance than those with lower

scores. Therefore, the results of this study seem to support the previous findings that link increases in various traits related to neuroticism and eating pathology, including negative body image. These results may be applied clinically for a more integrative approach to treating eating disorders and anxiety and affective disorders simultaneously

Past research had indicated highly contradictory results pertaining to conscientiousness and eating disorders; however, past studies had not explored the relationship beyond the factor level. The results of this study indicate that individuals who report higher degrees of conscientiousness, specifically in competence and self-discipline, tended to report more positive perceptions of their bodies and seem to have a lower risk of developing an eating disorder than others without elevations in these areas related to conscientiousness. Therefore, this may have clinical implications for the treatment of eating disorders because it may be particularly important to increase patients' self-efficacy and belief in their own competence in the course of therapy.

Previous studies had also indicated somewhat contradictory results regarding agreeableness and disordered eating. However, the overall trend of results indicated that eating disordered individuals tend to score lower on agreeableness scales than the general population. The results of the present study show that the overall agreeableness scores were not indicative of eating pathology, but that individuals with greater risk of developing an eating disorder tended to indicate having lower levels of trust and straightforwardness and higher levels of modesty than those with a lower risk. This seems to support the general notion that eating disorder patients tend to be guarded and manipulative in treatment, while reporting having low opinions of themselves.

Regarding the relationship between extroversion, eating disorders and body image, past research had indicated that individuals with higher levels of extroversion tend to have more positive body image; however, there did not seem to be any conclusive results regarding the relationships between eating disorders and extroversion. Results of the present study support the trend that past research found between positive body image and high levels of extroversion. In addition, this study found that individuals who had higher extroversion scores, particularly in the areas of assertiveness and positive emotion, were less likely to endorse items that are indicative of eating disorder symptoms. Additionally, individuals with bulimic tendencies reported being less warm and friendly than others without elevations in the bulimia subscale. These results may also have clinical implications relating to increasing self-efficacy, assertiveness, and the experience of positive emotions in the treatment of eating disorders.

The openness factor had not been found to have any definite relationship to eating pathology or body image in previous research. This trend was also found in the present study with regard to eating pathology. However, results of this study show that individuals who are less open to various values may place a higher emphasis on appearance and the preoccupation about being overweight than other individuals. This may have implications for future research or in the clinical realm because established sociocultural values emphasizing a thin-ideal may influence individuals who are less open to alternative conceptualizations of beauty and may increase their risk of developing a negative body image.

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Appendix A

Demographic Information

Date of Birth : _____

Year in School: _____

Ethnicity (check all that apply):

African American/Black

Caucasian/White

Native American

Hispanic/Latina

Asian/Pacific Islander

Other: _____

Appendix B

Eating Disorder Inventory – 3
EDI-3 (Garner, 2005)



Item Booklet

David M. Garner, PhD

DIRECTIONS

Enter your name, the date, your age, gender, marital status, and occupation. Complete the questions on the rest of this page. Then, turn to the inside of this booklet and carefully follow the instructions.

Name _____ Date ____/____/____

*Age _____ Gender _____ Marital Status _____ Occupation _____

- A. *Current weight: _____ pounds
- B. *Height: _____ feet _____ inches
- C. Highest past weight (excluding pregnancy): _____ pounds
How long ago did you first reach this weight? _____ months
How long did you weigh this weight? _____ months
- D. *Lowest weight as an adult (or lowest weight as an adolescent if not yet age 18): _____ pounds
How long ago did you first reach this weight? _____ months
How long did you weigh this weight? _____ months
- E. What weight have you been at for the longest period of time? _____ pounds
At what age did you first reach this weight? _____ years old
- F. If your weight has changed a lot over the years, is there a weight that you keep coming back to when you are not dieting? _____ Yes _____ No
If yes, what is this weight? _____ pounds
At what age did you first reach this weight? _____ years old
- G. What is the most weight you have ever lost? _____ pounds
Did you lose this weight on purpose? _____ Yes _____ No
What weight did you lose to? _____ pounds
At what age did you reach this weight? _____ years old
- H. What do you think your weight would be if you did not consciously try to control your weight?
_____ pounds
- I. How much would you like to weigh? _____ pounds
- J. Age at which weight problems began (if any): _____ years old
- K. Father's occupation: _____
- L. Mother's occupation: _____

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INSTRUCTIONS

First, write your name and the date on the EDI-3 Answer Sheet. Your ratings on the items below should be circled on the Answer Sheet. The items ask about your attitudes, feelings, and behaviors. Some of the items relate to food or eating; other items ask about your feelings about yourself.

For each item, decide if the item is true about you **ALWAYS (A)**, **USUALLY (U)**, **OFTEN (O)**, **SOMETIMES (S)**, **RARELY (R)**, or **NEVER (N)**. Circle the letter that corresponds to your rating on the Answer Sheet. For example, if your rating for an item is **OFTEN**, you would circle the "**O**" for that item on the Answer Sheet.

Respond to *all* of the items, making sure that you circle the letter for the rating that is true about you. **DO NOT ERASE!** If you need to change an answer, mark an "X" through the incorrect letter, and then circle the correct one.

1. I eat sweets and carbohydrates without feeling nervous.
2. I think that my stomach is too big.
3. I wish that I could return to the security of childhood.
4. I eat when I am upset.
5. I stuff myself with food.
6. I wish that I could be younger.
7. I think about dieting.
8. I get frightened when my feelings are too strong.
9. I think that my thighs are too large.
10. I feel ineffective as a person.
11. I feel extremely guilty after overeating.
12. I think that my stomach is just the right size.
13. Only outstanding performance is good enough in my family.
14. The happiest time in life is when you are a child.
15. I am open about my feelings.
16. I am terrified of gaining weight.
17. I trust others.
18. I feel alone in the world.
19. I feel satisfied with the shape of my body.
20. I feel generally in control of things in my life.
21. I get confused about what emotion I am feeling.
22. I would rather be an adult than a child.
23. I can communicate with others easily.
24. I wish I were someone else.
25. I exaggerate or magnify the importance of weight.
26. I can clearly identify what emotion I am feeling.

(continued)

27. I feel inadequate.
28. I have gone on eating binges where I felt that I could not stop.
29. As a child, I tried very hard to avoid disappointing my parents and teachers.
30. I have close relationships.
31. I like the shape of my buttocks.
32. I am preoccupied with the desire to be thinner.
33. I don't know what's going on inside me.
34. I have trouble expressing my emotions to others.
35. The demands of adulthood are too great.
36. I hate being less than best at things.
37. I feel secure about myself.
38. I think about bingeing (overeating).
39. I feel happy that I am not a child anymore.
40. I get confused as to whether or not I am hungry.
41. I have a low opinion of myself.
42. I feel that I can achieve my standards.
43. My parents have expected excellence of me.
44. I worry that my feelings will get out of control.
45. I think my hips are too big.
46. I eat moderately in front of others and stuff myself when they're gone.
47. I feel bloated after eating a normal meal.
48. I feel that people are happiest when they are children.
49. If I gain a pound, I worry that I will keep gaining.
50. I feel that I am a worthwhile person.
51. When I am upset, I don't know if I am sad, frightened, or angry.
52. I feel that I must do things perfectly or not do them at all.
53. I have the thought of trying to vomit in order to lose weight.
54. I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close).
55. I think that my thighs are just the right size.
56. I feel empty inside (emotionally).
57. I can talk about personal thoughts or feelings.
58. The best years of your life are when you become an adult.
59. I think my buttocks are too large.
60. I have feelings I can't quite identify.

(continued)

61. I eat or drink in secrecy.
62. I think that my hips are just the right size.
63. I have extremely high goals.
64. When I am upset, I worry that I will start eating.
65. People I really like end up disappointing me.
66. I am ashamed of my human weaknesses.
67. Other people would say that I am emotionally unstable.
68. I would like to be in total control of my bodily urges.
69. I feel relaxed in most group situations.
70. I say things impulsively that I regret having said.
71. I go out of my way to experience pleasure.
72. I have to be careful of my tendency to abuse drugs.
73. I am outgoing with most people.
74. I feel trapped in relationships.
75. Self-denial makes me feel stronger spiritually.
76. People understand my real problems.
77. I can't get strange thoughts out of my head.
78. Eating for pleasure is a sign of moral weakness.
79. I am prone to outbursts of anger or rage.
80. I feel that people give me the credit I deserve.
81. I have to be careful of my tendency to abuse alcohol.
82. I believe that relaxing is simply a waste of time.
83. Others would say that I get irritated easily.
84. I feel like I am losing out everywhere.
85. I experience marked mood shifts.
86. I am embarrassed by my bodily urges.
87. I would rather spend time by myself than with others.
88. Suffering makes you a better person.
89. I know that people love me.
90. I feel like I must hurt myself or others.
91. I feel that I really know who I am.

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Appendix C

Neuroticism, Extroversion, Openness to Experience Personality Inventory Revised
NEO-PI-R (Costa & McCrae, 1985)

NEO PI-R™

Revised NEO Personality Inventory (NEO PI-R)

Item Booklet—Form S

Paul T. Costa, Jr., PhD, and Robert R. McCrae, PhD

Instructions for use with the Hand-Scoring Answer Sheet

For use with the Machine-Scoring Answer Sheet, turn to page 2.

Please read all these instructions carefully before beginning. Mark all your answers on the answer sheet and write only where indicated. **DO NOT** write in this test booklet.

On the accompanying answer sheet, please write your name in the space provided. Indicate your sex by placing a check in the appropriate box under "Sex." Enter the date and your identification number, if you have been given one, in the spaces provided. Check "Yourself" in the space labeled "Person being rated" since you are describing yourself. Write in your age and check the box next to "S" in the space labeled "NEO Form."

This questionnaire contains 240 statements. Please read each item carefully and circle the one answer that best corresponds to your agreement or disagreement.

Circle "SD" if the statement is definitely false or if you **strongly disagree**. ☒SD D N A SA

Circle "D" if the statement is mostly false or if you **disagree**. SD ☒D N A SA

Circle "N" if the statement is about equally true or false, if you cannot decide, or if you are **neutral** on the statement. SD D ☒N A SA

Circle "A" if the statement is mostly true or if you **agree**. SD D N ☒A SA

Circle "SA" if the statement is definitely true or if you **strongly agree**. SD D N A ☒SA

There are no right or wrong answers, and you need not be an "expert" to complete this questionnaire. Describe yourself honestly and state your opinions as accurately as possible.

Answer every item. Note that the answers are numbered down the columns on the answer sheet. Please make sure that your answer is marked in the correctly numbered space. If you make a mistake or change your mind, **DO NOT ERASE!** Make an "X" through the incorrect response and then draw a circle around the correct response. After you have answered the 240 items, answer the three questions labeled A, B, and C on the answer sheet. Turn to page 3 in this booklet and begin with item 1.

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

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Instructions for use with the Machine-Scoring Answer Sheet






Please read all these instructions carefully before beginning. Use a No. 2 pencil to complete your responses on the accompanying answer sheet. Please mark all your answers on the answer sheet. **DO NOT** write in this test booklet.






On the answer sheet, fill in the circle next to "Self" in the box labeled "Person Rated" since you are describing yourself. Enter your name and/or identification number, if you have been given one, in the spaces provided and then fill in the corresponding circles below each box. In the box labeled "Test Form" fill in the circle next to the letter "S." In the spaces provided, fill in your sex, age, and today's date. Turn the answer sheet over.






This questionnaire contains 240 statements. Please read each item carefully and fill in the one answer that best corresponds to your agreement or disagreement.

Fill in "SD" if the statement is definitely false or if you **strongly disagree**.     

Fill in "D" if the statement is mostly false or if you **disagree**.     

Fill in "N" if the statement is about equally true or false, if you cannot decide, or if you are **neutral** on the statement.     

Fill in "A" if the statement is mostly true or if you **agree**.     

Fill in "SA" if the statement is definitely true or if you **strongly agree**.     

There are no right or wrong answers, and you need not be an "expert" to complete this questionnaire. Describe yourself honestly and state your opinions as accurately as possible.

Answer every item and be sure to fill in the circles completely. Note that the answers are numbered down the columns on the answer sheet. Please make sure that your answer is marked in the correctly numbered space. If you make a mistake or change your mind, erase your first answer completely. Then fill in the circle that corresponds to your correct answer. After you have answered the 240 items, please answer the three questions labeled A, B, and C on the answer sheet. Turn to page 3 in this booklet and begin with item 1.

1. I am not a worrier.
2. I really like most people I meet.
3. I have a very active imagination.
4. I tend to be cynical and skeptical of others' intentions.
5. I'm known for my prudence and common sense.
6. I often get angry at the way people treat me.
7. I shy away from crowds of people.
8. Aesthetic and artistic concerns aren't very important to me.
9. I'm not crafty or sly.
10. I would rather keep my options open than plan everything in advance.
11. I rarely feel lonely or blue.
12. I am dominant, forceful, and assertive.
13. Without strong emotions, life would be uninteresting to me.
14. Some people think I'm selfish and egotistical.
15. I try to perform all the tasks assigned to me conscientiously.
16. In dealing with other people, I always dread making a social blunder.
17. I have a leisurely style in work and play.
18. I'm pretty set in my ways.
19. I would rather cooperate with others than compete with them.
20. I am easy-going and lackadaisical.
21. I rarely overindulge in anything.
22. I often crave excitement.
23. I often enjoy playing with theories or abstract ideas.
24. I don't mind bragging about my talents and accomplishments.
25. I'm pretty good about pacing myself so as to get things done on time.
26. I often feel helpless and want someone else to solve my problems.
27. I have never literally jumped for joy.
28. I believe letting students hear controversial speakers can only confuse and mislead them.
29. Political leaders need to be more aware of the human side of their policies.
30. Over the years I've done some pretty stupid things.
31. I am easily frightened.
32. I don't get much pleasure from chatting with people.
33. I try to keep all my thoughts directed along realistic lines and avoid flights of fancy.
34. I believe that most people are basically well-intentioned.
35. I don't take civic duties like voting very seriously.
36. I'm an even-tempered person.
37. I like to have a lot of people around me.
38. I am sometimes completely absorbed in music I am listening to.
39. If necessary, I am willing to manipulate people to get what I want.
40. I keep my belongings neat and clean.
41. Sometimes I feel completely worthless.
42. I sometimes fail to assert myself as much as I should.
43. I rarely experience strong emotions.
44. I try to be courteous to everyone I meet.
45. Sometimes I'm not as dependable or reliable as I should be.

46. I seldom feel self-conscious when I'm around people.
47. When I do things, I do them vigorously.
48. I think it's interesting to learn and develop new hobbies.
49. I can be sarcastic and cutting when I need to be.
50. I have a clear set of goals and work toward them in an orderly fashion.
51. I have trouble resisting my cravings.
52. I wouldn't enjoy vacationing in Las Vegas.
53. I find philosophical arguments boring.
54. I'd rather not talk about myself and my achievements.
55. I waste a lot of time before settling down to work.
56. I feel I am capable of coping with most of my problems.
57. I have sometimes experienced intense joy or ecstasy.
58. I believe that laws and social policies should change to reflect the needs of a changing world.
59. I'm hard-headed and tough-minded in my attitudes.
60. I think things through before coming to a decision.
61. I rarely feel fearful or anxious.
62. I'm known as a warm and friendly person.
63. I have an active fantasy life.
64. I believe that most people will take advantage of you if you let them.
65. I keep myself informed and usually make intelligent decisions.
66. I am known as hot-blooded and quick-tempered.
67. I usually prefer to do things alone.
68. Watching ballet or modern dance bores me.
69. I couldn't deceive anyone even if I wanted to.
70. I am not a very methodical person.
71. I am seldom sad or depressed.
72. I have often been a leader of groups I have belonged to.
73. How I feel about things is important to me.
74. Some people think of me as cold and calculating.
75. I pay my debts promptly and in full.
76. At times I have been so ashamed I just wanted to hide.
77. My work is likely to be slow but steady.
78. Once I find the right way to do something, I stick to it.
79. I hesitate to express my anger even when it's justified.
80. When I start a self-improvement program, I usually let it slide after a few days.
81. I have little difficulty resisting temptation.
82. I have sometimes done things just for "kicks" or "thrills."
83. I enjoy solving problems or puzzles.
84. I'm better than most people, and I know it.
85. I am a productive person who always gets the job done.
86. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
87. I am not a cheerful optimist.
88. I believe we should look to our religious authorities for decisions on moral issues.
89. We can never do too much for the poor and elderly.
90. Occasionally I act first and think later.

91. I often feel tense and jittery.
92. Many people think of me as somewhat cold and distant.
93. I don't like to waste my time daydreaming.
94. I think most of the people I deal with are honest and trustworthy.
95. I often come into situations without being fully prepared.
96. I am not considered a touchy or temperamental person.
97. I really feel the need for other people if I am by myself for long.
98. I am intrigued by the patterns I find in art and nature.
99. Being perfectly honest is a bad way to do business.
100. I like to keep everything in its place so I know just where it is.
101. I have sometimes experienced a deep sense of guilt or sinfulness.
102. In meetings, I usually let others do the talking.
103. I seldom pay much attention to my feelings of the moment.
104. I generally try to be thoughtful and considerate.
105. Sometimes I cheat when I play solitaire.
106. It doesn't embarrass me too much if people ridicule and tease me.
107. I often feel as if I'm bursting with energy.
108. I often try new and foreign foods.
109. If I don't like people, I let them know it.
110. I work hard to accomplish my goals.
111. When I am having my favorite foods, I tend to eat too much.
112. I tend to avoid movies that are shocking or scary.
113. I sometimes lose interest when people talk about very abstract, theoretical matters.
114. I try to be humble.
115. I have trouble making myself do what I should.
116. I keep a cool head in emergencies.
117. Sometimes I bubble with happiness.
118. I believe that the different ideas of right and wrong that people in other societies have may be valid for them.
119. I have no sympathy for panhandlers.
120. I always consider the consequences before I take action.
121. I'm seldom apprehensive about the future.
122. I really enjoy talking to people.
123. I enjoy concentrating on a fantasy or daydream and exploring all its possibilities, letting it grow and develop.
124. I'm suspicious when someone does something nice for me.
125. I pride myself on my sound judgment.
126. I often get disgusted with people I have to deal with.
127. I prefer jobs that let me work alone without being bothered by other people.
128. Poetry has little or no effect on me.
129. I would hate to be thought of as a hypocrite.
130. I never seem to be able to get organized.
131. I tend to blame myself when anything goes wrong.
132. Other people often look to me to make decisions.
133. I experience a wide range of emotions or feelings.
134. I'm not known for my generosity.
135. When I make a commitment, I can always be counted on to follow through.

136. I often feel inferior to others.
137. I'm not as quick and lively as other people.
138. I prefer to spend my time in familiar surroundings.
139. When I've been insulted, I just try to forgive and forget.
140. I don't feel like I'm driven to get ahead.
141. I seldom give in to my impulses.
142. I like to be where the action is.
143. I enjoy working on "mind-twister"-type puzzles.
144. I have a very high opinion of myself.
145. Once I start a project, I almost always finish it.
146. It's often hard for me to make up my mind.
147. I don't consider myself especially "light-hearted."
148. I believe that loyalty to one's ideals and principles is more important than "open-mindedness."
149. Human need should always take priority over economic considerations.
150. I often do things on the spur of the moment.
151. I often worry about things that might go wrong.
152. I find it easy to smile and be outgoing with strangers.
153. If I feel my mind starting to drift off into daydreams, I usually get busy and start concentrating on some work or activity instead.
154. My first reaction is to trust people.
155. I don't seem to be completely successful at anything.
156. It takes a lot to get me mad.
157. I'd rather vacation at a popular beach than an isolated cabin in the woods.
158. Certain kinds of music have an endless fascination for me.
159. Sometimes I trick people into doing what I want.
160. I tend to be somewhat fastidious or exacting.
161. I have a low opinion of myself.
162. I would rather go my own way than be a leader of others.
163. I seldom notice the moods or feelings that different environments produce.
164. Most people I know like me.
165. I adhere strictly to my ethical principles.
166. I feel comfortable in the presence of my bosses or other authorities.
167. I usually seem to be in a hurry.
168. Sometimes I make changes around the house just to try something different.
169. If someone starts a fight, I'm ready to fight back.
170. I strive to achieve all I can.
171. I sometimes eat myself sick.
172. I love the excitement of roller coasters.
173. I have little interest in speculating on the nature of the universe or the human condition.
174. I feel that I am no better than others, no matter what their condition.
175. When a project gets too difficult, I'm inclined to start a new one.
176. I can handle myself pretty well in a crisis.
177. I am a cheerful, high-spirited person.
178. I consider myself broad-minded and tolerant of other people's lifestyles.
179. I believe all human beings are worthy of respect.
180. I rarely make hasty decisions.



181. I have fewer fears than most people.
182. I have strong emotional attachments to my friends.
183. As a child I rarely enjoyed games of make believe.
184. I tend to assume the best about people.
185. I'm a very competent person.
186. At times I have felt bitter and resentful.
187. Social gatherings are usually boring to me.
188. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.
189. At times I bully or flatter people into doing what I want them to.
190. I'm not compulsive about cleaning.
191. Sometimes things look pretty bleak and hopeless to me.
192. In conversations, I tend to do most of the talking.
193. I find it easy to empathize—to feel myself what others are feeling.
194. I think of myself as a charitable person.
195. I try to do jobs carefully, so they won't have to be done again.
196. If I have said or done the wrong thing to someone, I can hardly bear to face them again.
197. My life is fast-paced.
198. On a vacation, I prefer going back to a tried and true spot.
199. I'm hard-headed and stubborn.
200. I strive for excellence in everything I do.
201. Sometimes I do things on impulse that I later regret.
202. I'm attracted to bright colors and flashy styles.
203. I have a lot of intellectual curiosity.
204. I would rather praise others than be praised myself.
205. There are so many little jobs that need to be done that I sometimes just ignore them all.
206. When everything seems to be going wrong, I can still make good decisions.
207. I rarely use words like "fantastic!" or "sensational!" to describe my experiences.
208. I think that if people don't know what they believe in by the time they're 25, there's something wrong with them.
209. I have sympathy for others less fortunate than me.
210. I plan ahead carefully when I go on a trip.
211. Frightening thoughts sometimes come into my head.
212. I take a personal interest in the people I work with.
213. I would have difficulty just letting my mind wander without control or guidance.
214. I have a good deal of faith in human nature.
215. I am efficient and effective at my work.
216. Even minor annoyances can be frustrating to me.
217. I enjoy parties with lots of people.
218. I enjoy reading poetry that emphasizes feelings and images more than story lines.
219. I pride myself on my shrewdness in handling people.
220. I spend a lot of time looking for things I've misplaced.
221. Too often, when things go wrong, I get discouraged and feel like giving up.
222. I don't find it easy to take charge of a situation.
223. Odd things—like certain scents or the names of distant places—can evoke strong moods in me.
224. I go out of my way to help others if I can.
225. I'd really have to be sick before I'd miss a day of work.

- 226. When people I know do foolish things, I get embarrassed for them.
- 227. I am a very active person.
- 228. I follow the same route when I go someplace.
- 229. I often get into arguments with my family and co-workers.
- 230. I'm something of a "workaholic."
- 231. I am always able to keep my feelings under control.
- 232. I like being part of the crowd at sporting events.
- 233. I have a wide range of intellectual interests.
- 234. I'm a superior person.
- 235. I have a lot of self-discipline.
- 236. I'm pretty stable emotionally.
- 237. I laugh easily.
- 238. I believe that the "new morality" of permissiveness is no morality at all.
- 239. I would rather be known as "merciful" than as "just."
- 240. I think twice before I answer a question.

Appendix D

The Multidimensional Body Self Relations Questionnaire – Appearance Scales
MBSRQ-AS (Cash, 1990)

The following pages contain a series of statements about how people might think, feel or behave. You are asked to indicate the extent to which each statement pertains to you personally. There are no right or wrong answers. Just give the answer that is most accurate for you. Remember, your responses are confidential, so please be completely honest and answer all items.

1. Definitely Disagree
2. Mostly Disagree
3. Neither Agree nor Disagree
4. Mostly Agree
5. Definitely Agree

- _____ 1. Before going out in public, I always notice how I look.
- _____ 2. I am careful to buy clothes that will make me look my best.
- _____ 3. My body is sexually appealing
- _____ 4. I constantly worry about being or becoming fat.
- _____ 5. I like my looks just the way they are.
- _____ 6. I check my appearance in a mirror whenever I can.
- _____ 7. Before going out, I usually spend a lot of time getting ready.
- _____ 8. I am very conscious of even small changes in my weight.
- _____ 9. Most people would consider me good-looking.
- _____ 10. It is important that I always look good.
- _____ 11. I use very few grooming products.
- _____ 12. I like the way I look without my clothes on.
- _____ 13. I am self-conscious if my grooming isn't right.
- _____ 14. I usually wear whatever is handy without caring how it looks.
- _____ 15. I like the way my clothes fit me.
- _____ 16. I don't care what people think about my appearance.
- _____ 17. I take special care with my hair grooming.
- _____ 18. I dislike my physique.
- _____ 19. I am physically unattractive.
- _____ 20. I never think about my appearance.
- _____ 21. I am always trying to improve my physical appearance.
- _____ 22. I am on a weight-loss diet.

For the remainder of the items use the response scale given with the item, and enter your answer in the space beside the item.

_____ 23. I have tried to lose weight by fasting or going on crash diets.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very Often

_____ 24. I think I am:

1. Very Underweight
2. Somewhat Underweight
3. Normal Weight
4. Somewhat Overweight
5. Very Overweight

_____ 25. From looking at me, most other people would think I am:

1. Very Underweight
2. Somewhat Underweight
3. Normal Weight
4. Somewhat Overweight
5. Very Overweight

26-34. Use this 1 to 5 scale to indicate how dissatisfied or satisfied you are with each of the following areas or aspects of your body:

- 1. Very Dissatisfied**
- 2. Mostly Dissatisfied**
- 3. Neither Satisfied Nor Dissatisfied**
- 4. Mostly Satisfied**
- 5. Very Satisfied**

_____ 26. Face (facial features, complexion)

_____ 27. Hair (color, thickness, texture)

_____ 28. Lower torso (buttocks, hips, thighs, legs)

_____ 29. Mid torso (waist, stomach)

_____ 30. Upper torso (chest or breasts, shoulders, arms)

_____ 31. Muscle tone

_____ 32. Weight

_____ 33. Height

_____ 34. Overall appearance

Appendix E

Informed Consent to Participate in a Research Project

Project Title:	Eating Behavior, Body Image, and Big Five Personality Factors
Investigator(s):	Jessica T. Mueller and Roger N. Reeb, Ph.D. (faculty sponsor)
Description of Study:	In a group setting participants will complete questionnaires about their eating behaviors, body image, and personality.
Adverse Effects and Risks:	<p>I am aware that I may potentially experience some degree of distress when responding to questions contained in the surveys I am being asked to complete.</p> <p>However, I am aware that I may choose to decline to answer any questions that cause me distress. Additionally, in the event that I experience a significant amount of distress following the assessment, I am aware that I may contact the University of Dayton Counseling Center (229-3141). I am also aware that services provided at the Counseling Center are free of charge to all University of Dayton undergraduate students.</p>
Duration of Study:	The study will take approximately one hour to complete. You will complete 4 questionnaires in a group setting, which will take approximately one hour.
Assurance of Privacy:	Your name will only appear on your consent form, which will be filed separately from all other surveys that you complete. The only identifying information that will appear on these forms will be a number that your surveys will be assigned; therefore, your responses will be anonymous. Only investigators associated with this study will have access to the forms you have filled out. Your name will not be revealed in any document resulting from this study.
Contact Persons:	Participants may contact the primary investigator (Jessica T. Mueller) at (440) 371-3575 or by e-mail at muellejt@notes.udayton.edu , or the faculty sponsor (Roger N. Reeb, Ph.D.) by e-mail at roger.reeb@notes.udayton.edu , by phone at (937) 229-2395, or in St. Joseph's Hall room 306 if they have questions or problems after the study. Participants may also contact the chair of the Research Review and Ethics Committee, Greg C. Elvers, Ph.D. by e-mail at greg.elvers@notes.udayton.edu , by phone at (937) 229-2171, or in St. Joseph's Hall room 312.
Consent to	I have decided to voluntarily take part in this study. The primary

Participate:

investigator named above has adequately answered any and all questions that I have about this study, the procedures involved, and my participation. I understand that the investigator named above will be available to answer any questions about research procedures throughout this study. I also understand that I may voluntarily terminate my participation in this study at any time and still receive full credit. I also understand that the investigator named above may terminate my participation in this study if s/he feels this is in my best interest. In addition, I certify that I am 18 (eighteen) years of age or older.

Signature of Participant	Participant's Printed Name	Date
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Signature of Witness	Witness' Printed Name	Date
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Appendix F Debriefing Form

Information about the Study

The primary purpose of this study is to examine the ways in which personality factors relate to an individual's body image and eating behaviors. Preliminary research suggests that individuals with certain personality characteristics may be at an increased risk of developing a negative body image or harmful eating practices. However, another purpose of this study is to further specify which personality characteristics relate to specific eating behaviors.

Some questionnaires that you completed involve personal and demographic information (e.g., age and ethnicity). Another questionnaire that you completed measures a number of personality variables. In addition, one questionnaire asked about eating behaviors that may be associated with clinical problems. Finally, another questionnaire asked questions regarding body image.

References

For further information about this area of psychological research, the following articles are recommended:

- Bollen, E. & Wojciechowski, F.L. (2004). Anorexia nervosa subtypes and the big five personality factors. *European Eating Disorder Review*, 12, 117-121.
- Claes, L., Vandereycken, W., Luyten, P., Soenens, B., Pieters, G., & Vertommen, H. (2006). Personality prototypes in eating disorders based on the big five model. *Journal of Personality Disorders*, 20, 401-416.
- Heaven, P.C., Mulligan, K., Merrilees, R., Woods, T., & Fairouz, Y. (2001). Neuroticism and conscientiousness as predictors of emotional, external, and restrained eating behaviors. *International Journal of Eating Disorders*, 30, 161-166.
- Heilbrun, A.B. & Friedberg, L. (1990). Distorted body image in normal college women: possible implications for the development of anorexia nervosa. *Journal of Clinical Psychology*, 46, 398-401.

Assurance of Privacy

We are seeking information regarding general principles of the relationships between personality factors, body image, and eating behaviors—we are not evaluating you personally in any way. Your consent form will be separated from your data, and a number system will be used. Therefore, your responses will remain anonymous. The consent forms and data will only be accessible by investigators involved in this study. Your name will not be revealed in any document resulting from this study.

UD Counseling Center

Due to the fact that responses are anonymous, researchers cannot contact individuals who might show signs of psychological problems. Individuals who endorse certain items that indicate a possible lack of control over eating (e.g., *"I have gone on eating binges where I felt that I could not stop"* or *"I have thought of trying to vomit in order to lose weight"*) have often found counseling services to be beneficial. In addition, people who endorse items that indicate an excessive concern for weight or body image (e.g., *"I am preoccupied with the desire to be thinner"* or *"If I gain a pound, I worry that I will keep gaining"*) have also found counseling services to be beneficial. Furthermore, those who endorse items that may be indicative of emotional issues (e.g., *"I have a low opinion of myself," "I feel like I must hurt myself or others,"* or *"I often feel tense and jittery"*) have also reported benefiting from counseling services. If you endorsed these items (or items similar to these), we encourage you to consider contacting the UD Counseling Center at (937) 229-3341. The services provided by the Counseling Center are free to all undergraduate students at the University of Dayton.

Contact Information

Participants may contact the primary investigator (Jessica T. Mueller) at (440) 371-3575 or by e-mail at muellejt@notes.udayton.edu, or the faculty sponsor (Roger N. Reeb, Ph.D.) by e-mail at roger.reeb@notes.udayton.edu, by phone at (937) 229-2395, or in St. Joseph's Hall room 306 if they have questions or problems after the study. Participants may also contact the chair of the Research Review and Ethics Committee, Greg C. Elvers, Ph.D. by e-mail at greg.elvers@notes.udayton.edu, by phone at (937) 229-2171, or in St. Joseph's Hall room 312.

Thank you very much for your participation in this study! Without volunteers, such as yourself, this type of psychological research would not be possible. If you would like to be updated on the results of this study, please feel free to contact us.

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