PERSONALITY DIFFERENCES IN TREATMENT SEEKING AND NON-TREATMENT SEEKING INDIVIDUALS WITH SELF-REPORTED ANOREXIA

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ABSTRACT

PERSONALITY DIFFERENCES IN TREATMENT SEEKING AND NON-TREATMENT SEEKING INDIVIDUALS WITH SELF-REPORTED ANOREXIA

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Most research on anorexia nervosa has focused on individuals who are currently seeking treatment and leads to many of the treatment models being based on individuals who are already receiving help. Therefore, this study explored personality differences in 33 females with self-reported anorexia who were not seeking treatment, 32 individuals with self-reported anorexia who were seeking treatment, and 83 females who were in a control group. Personality was assessed using a measure derived from the five factor model and eating behaviors were assessed using the Eating Attitudes Test-26.

Results indicated that individuals with self-reported anorexia who are not seeking treatment are less agreeable and less conscientious than both individuals with anorexia who are seeking treatment and a control group without disordered eating behaviors. Also, individuals with anorexia, whether seeking treatment or not, tended to be less extraverted and more neurotic than individuals from a control group without disordered eating behaviors. Lastly, the results revealed that the 5 factors in the five factor model can be used to predict whether individuals with anorexia are seeking treatment or not better than chance. These results can be used to improve on current therapy models to reduce drop-out rates and to create a program that encourages more individuals to come in for treatment. Future research could focus on the facets of the five domains and this would give more information about the participants' personality.

CHAPTER ONE

Introduction

Eating disorders have been present in the field of psychology for decades. Anorexia and bulimia were even noted in the first *Diagnostic and Statistical Manual of Mental Disorders* (DSM). In the initial DSM, anorexia was considered a loss of appetite and was categorized under a psychophysiologic gastrointestinal reaction and bulimia was noted as simply a symptom meaning excessive appetite (American Psychiatric Association [APA], 1952). Research on anorexia and bulimia has moved the area forward greatly and has led to them being differentiated disorders.

Currently, within the DSM-IV-TR, eating disorders are categorized into three main groups: anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified (NOS) (APA, 2000). Anorexia nervosa is characterized as a refusal to not maintain a healthy normal weight and bulimia nervosa is characterized as binge eating episodes with accompanying compensatory behaviors (APA, 2000). Anorexia nervosa affects approximately 0.5% of females and bulimia nervosa affects about 1% to 3% of females; however, mortality rates are higher among individuals suffering from anorexia nervosa (APA, 2000). Given this information and previous research direction, anorexia nervosa will be the focus of this study.

Over the last couple of decades researchers have started to incorporate personality into their studies on anorexia. One focus is on how personality can help define the disorder. Some believe these traits can be used to help create more of a dimensional approach to diagnosing instead of strict categories. However, the research on categories

versus dimensions continues to find mixed results when investigating how to define eating disorders (e.g., Lowe et al., 1996; Ruderman & Besbeas, 1992). Another focus is on how personality can help identify individuals who have a higher likelihood of dropping out of treatment or a poorer prognosis. Some personality traits that researchers are looking at include, but are not limited to Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness.

Although all of this research has been conducted to help improve the outcome of treatment, all of these studies have focused on individuals who are coming in for treatment of anorexia nervosa. This is a common limitation within all clinical research. It is more convenient to conduct research with clients that are already coming into a facility. Therefore, the information researchers and clinicians have on personality and eating disorders is one-sided with an overrepresentation of individuals seeking treatment.

There are only two studies that could be identified that have investigated this gap in literature (Goodwin & Fitzgibbon, 2002; Perkins, Klump, Iancono, & McGue, 2005). Both of these studies have methods that can be improved upon. Therefore, the purpose of this study is to compare females who report having anorexia and are seeking treatment to females who report having anorexia and are not seeking treatment on the basis of personality traits as defined by the five factor model of personality. The expectation is that these findings can be used to identify clients who may not want to seek treatment or used to develop a better treatment model for anorexia nervosa not solely based on individuals who are seeking treatment.

CHAPTER TWO

Review of the Literature

Eating Disorders

The *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (DSM-IV-TR) defines eating disorders as severe disturbances in eating behavior and categorizes eating disorders into three main groups: Anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified (APA, 2000). Anorexia nervosa is distinguished by the refusal of an individual to maintain a minimally normal body weight and bulimia nervosa is distinguished by repeated episodes of binge eating with inappropriate compensatory behaviors following the episode (APA, 2000). These compensatory behaviors include, but are not limited to excessive exercise, self-induced vomiting, fasting, and misuse of laxatives. If an individual does not meet specific criteria for anorexia nervosa or bulimia nervosa he or she may be placed into the eating disorder not otherwise specified category for coding.

Eating disorders seem to be more commonly found among females, individuals who identify as Caucasian, and individuals in Western societies where resources such as food are plentiful (APA, 2000). According to the DSM-IV-TR, anorexia affects approximately 0.5% of females; however, over 10% of individuals that are admitted into a facility for help die, most commonly from starvation, suicide, or an electrolyte imbalance (APA, 2000). Bulimia nervosa has a greater prevalence and affects approximately 1% to 3% of women; however, mortality rates are not as high as anorexia (APA, 2000).

Due to the severity of anorexia and because previous studies have noted significant differences between the two main eating disorder types, anorexia nervosa will be the focus of this study (Forbush & Watson, 2006; Godart et al. 2006). The differences found in earlier research could make results convoluted if the focus was on eating disorders as a whole. The specific DSM-IV-TR criteria for anorexia nervosa are presented in Table 1.

Table 1

Diagnostic Criteria for Anorexia Nervosa

Anorexia Nervosa DSM-IV-TR Criteria
A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g ., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected).
B. Intense fear of gaining weight or becoming fat, even though underweight.
C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.
D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)
Specify type:
Restricting Type: during the current episode of anorexia nervosa, the person has not regularly engaged in binge-eating or purging behavior (i .e., self-induced vomiting or the misuse of laxatives, diuretic;, or enemas)
Binge-Eating/Purging Type: during the current episode of anorexia nervosa, the person has regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

Note. Adapted from the *Diagnostic and Statistical Manual of Mental Disorders,* Fourth Edition, Text Revision by the American Psychiatric Association, p. 589.

Measuring Anorexia Nervosa and Other Eating Disorders

Over the years there have been many instruments developed to measure eating disorders. Some of these include the Eating Attitudes Test (EAT), the Eating Disorders Inventory (EDI), and the Eating Disorder Diagnostic Scale (EDDS).

The Eating Attitudes Test was developed as a tool to distinguish an individual with an eating disorder from an individual with normal eating habits based on eating disorder symptoms (Garner, Olmsted, Yvonne, & Garfinkel, 1982). The EAT can be divided into three factors or subscales: Dieting, Oral Control, and Food Preoccupation. The three factors can also be combined for an overall score. There has been some debate about the number of factors present (Doninger, Enders, & Burnett, 2005). Rutt and Coleman (2001) concluded that there were five factors: Fear of Fat, Diet, Other's Opinions, Preoccupation With Food, and Food Enjoyment. The EAT-26 was derived from the original 40 items on the EAT-40 (Garner & Garfinkel, 1979). Research has shown that the EAT-26 is a reliable instrument for the use of screening individuals with undifferentiated DSM-IV eating disorders (Mintz & O'Halloran, 2000). Research also suggests that the EAT-26 has good reliability and criterion validity in a nonclinical population (Koslowsky et al., 1992). Mintz and O'Halloran (2000) found that the EAT was at least 90% accurate in differentiating between individuals with an eating disorder and those without an eating disorder. The public has free access to this measure.

The EAT-26 was used in the present study and was used to support the participant's claim that she has anorexia nervosa and to select controls on Facebook. If participants scored at or above a 20 on the EAT-26 they were no longer eligible for the

control group. The measure was not used to find a distinct diagnosis. Body Mass Index (BMI) was used with the EAT-26 score and the participants' responses to categorize individuals for the purpose of this study.

The Eating Disorders Inventory (Garner, Olmstead, & Polivy, 1983) was developed to measure psychological and behavioral traits that distinguish normal eating behaviors from anorexia nervosa, bulimia nervosa, and eating disorder NOS. Research suggests that the EDI has high test-retest reliability and good validity (Cumella, 2006; Wear & Pratz, 1987). The EDI has changed over the years to become easier to administer and score. There are updated clinical adult norms in the United States and internationally and profiles were created to help in treatment plans (Cumella, 2006). The most current version is the Eating Disorders Inventory-3. This is one of the most popular measures for eating disorders; however, this measure is not free to the public.

The Eating Disorder Diagnostic Scale is open to the public and has research supporting good criterion and convergent validity and good reliability (Stice, Fisher, & Martinez, 2004; Stice, Rizvi, & Telch, 2000). The instrument was created using information from validated structured interviews and the criteria for anorexia, bulimia, and eating disorder NOS found in the DSM-IV-TR (Stice et al., 2000). This measure includes questions that coincide directly with the DSM, but could be seen as too invasive by participants of a study. The next section will discuss ways in which personality is defined; specifically the FFM will be reviewed.

The Five Factor Model of Personality

Theories of personality have varied throughout the years. It has been a strong research area that has sought to define or explain the differences among people. Popular theories include type theories where individuals are classified into categories that define a type of person (e.g. Type A and Type B Personalities), psychoanalytic theories (e.g. Freud), behavioral theories (e.g. operant conditioning), and humanistic theories (e.g. self-actualization). However, over the last 15 to 20 years trait theories have become the primary focus of personality theory. Furthermore, the five factor model (FFM) has been the leading model of personality.

Louis Thurstone (1934) was one of the first to acknowledge five distinct personality factors while he was president of the American Psychological Association in 1933. Thurstone included over 1000 participants and used 60 adjectives to rate well-known acquaintances. Using factor analysis, five distinct categories were identified that could account for the variation among the adjectives; however, these are not the five that are common today. Replications of Thurstone's work continued to support five distinct personality factors (Tupes & Christal, 1992; Borgatta, 1964; Norman, 1963). Another great influence on personality was Raymond Cattell, Spearman's protégé. Spearman had been conducting research on an overall intelligence (g) and had evidence within his data to support three separate factors which Garnett and Webb analyzed in 1915 and 1919, respectively (as cited in Digman, 1996). Finally, Cattell concluded that there were four distinct factors that traits could be grouped into since he did not include the g factor of intelligence. When comparing Thurstone and Cattell's factors, Cattell's factors resemble the current Big Five more so than Thrustone's five factors (Digman, 1996).

In addition to research on five factor models of personality during this time, other research was being conducted on two, three, and four dimensional models. A two-dimensional model was proposed by Eysenck in 1947. This model was composed of Extraversion and Nueroticism. Using the two previously identified personality factors, Eysenck (1955, 1960) later added Psychoticism and Intellect as a third and fourth factor of personality. After the proposal of the three and four dimensional models by Eysenck, research on personality slowed with the emergence of behaviorists and social learning theorists. Behaviorists steered from studying personality traits and focused on behaviors alone.

Research on the factors of personality reemerged later with a great force. Wiggins identified Eysenck's Extraversion and Neuroticism as the Big Two in 1968 and from this Costa and McCrae added Openness to Experience as a major factor of personality (Digman, 1996). Goldberg concluded that only five factors were stable across studies while more complex models were not stable across studies (Digman, 1996). Persuaded by Goldberg's findings, Costa and McCrae (1985) added Agreeableness and Conscientiousness to their established three factor model that included Neuroticism, Extraversion, and Openness to Experience.

Current research continues to support the five factors of personality and is known as the five factor model (FFM) of personality (Goldberg, 1990; McCrae & Costa, 1987; Saucier & Goldberg, 1996). Costa and McCrae's terminology for the five factors of personality are among the most cited in current literature today. The five factors are broad domains that include six independent facets that provide a more narrow description of each domain which are presented in Table 2 (Costa & McCrae, 1995).

Table 2

Costa and McCrae's 5 Domains and 30 Facets of the Five Factor Model of Personality

Five Factor Model of Personality

1) Extraversion
   - Warmth
   - Gregariousness
   - Assertiveness
   - Activity
   - Excitement-Seeking
   - Positive Emotions

2) Agreeableness
   - Trust
   - Straightforwardness
   - Altruism
   - Compliance
   - Modesty
   - Tender-Mindedness

3) Conscientiousness
   - Competence
   - Order
   - Dutifulness
   - Achievement Striving
   - Self-Discipline
   - Deliberation

4) Neuroticism
   - Anxiety
   - Angry Hostility
   - Depression
   - Self-Consciousness
   - Impulsiveness
   - Vulnerability

5) Openness to Experience
   - Fantasy
   - Aesthetics
   - Feelings
   - Actions
   - Ideas
   - Values

Measuring the Five Factor Model

The five factor model of personality is empirically supported and is the most prominent personality theory used today. One of the leading and most popular measures is the NEO Personality Inventory –Revised (NEO-PI-R; Costa & McCrae, 1995). This instrument reaches beyond the majority of FFM measures from the past and is not only able to provide a domain score, but incorporates descriptions of the 6 facets under each domain. Results from a thorough statistical analysis indicated that the 30 facets had strong correlations to their respective domains and at the same time showed discriminate validity between each facet (Costa & McCrae, 1995; Costa, McCrae, & Dye, 1991).

Although the NEO-PI-R is a valid and reliable measure for the FFM, it is can be costly to administer. With limits in funding, especially in the academic area, it becomes difficult to find resources to purchase copies of the measure from the publisher. This limits the selection of instruments and leads to a decrease in quality. This in turn causes a decrease in further validation of the measure and revisions to the measure.

For this reason the International Personality Item Pool (IPIP; Goldberg et al., 2006) was created to provide free scales measuring constructs that are similar to the constructs measured by the NEO-PI-R (among other measures/scales). The IPIP also allows the development of measures from the item pool to compare different measures and increases reliability of measures. It is easier for researchers to replicate studies and to reanalyze data. Currently there are over 2,000 items and there have been over 350 publications using IPIP scales that are listed.

The M5-50 Questionnaire (McCord, 2002) is an instrument that was developed using 50 IPIP items to measure the FFM as described by Costa and McCrae (1995). It

was developed with the intent of being used in the public domain and is the proxy of the NEO-PI-R. The IPIP Scientific Collaboratory website (Goldberg, 1999) is able to report internal reliability coefficients and correlations by comparing a proxy instrument to its parent. M5-50 shows high levels of internal consistency and high correlations with the NEO-PI-R (Goldberg, 1999). In addition, studies have also demonstrated strong construct and concurrent validity (Cooper, Golden, & Socha, in press; Socha, Cooper, & McCord, 2010).

Anorexia Nervosa and Personality

There are two main topics that can be found within research on anorexia nervosa and personality. The first are studies that explore how personality traits could be used to define the disorder and the second is how it affects the prognosis and treatment of the disorder.

Defining Anorexia. Using personality to define anorexia nervosa can be researched from a variety of directions. Studies explore how individuals with anorexia nervosa differ from control groups. Researchers investigate how anorexia can be distinguished from bulimia nervosa. Lastly, studies can identify differences that may exist between the subtypes of anorexia, restricting and binge-eating/purging.

Overall, individuals with anorexia have decreased levels of social interaction (Arkell & Robinson, 2008). In addition, results show an increase in social avoidance, interpersonal deficits, and an increase in interpersonal stress (Hartmann, Zeeck, & Barrett, 2010; Holliday, Uher, Landau, Collier, & Treasure, 2006). A study utilizing a five factor model of personality measure had results suggesting that Extraversion was

significantly lower for participants who had anorexia compared to a group of controls (Podar, Jaanisk, Allik, & Harro, 2007).

Individuals suffering from anorexia also score significantly higher on neuroticism measures compared to those without the disorder (Bollen & Wojciechowski, 2004; Holliday et al., 2006; Podar et al., 2007). This means that those with anorexia have increased anxiety, a tendency to experience more anger and frustration, increased depression symptoms, feel more self-conscious, have increased impulsiveness, and feel more vulnerable. Also, individuals with anorexia are more compulsive and perfectionistic (Holliday et al., 2006). One study has shown that it is the combination of high Neuroticism and low Extraversion that differentiates individuals suffering from anorexia with a normal control group, not Neuroticism itself (Miller, Schmidt, Vaillancourt, McDougall, & Laliberte, 2006).

Some studies have found the overall Conscientiousness factor to be significantly lower for individuals with anorexia, but this is not consistent across studies (Bollen & Wojciechowski, 2004; Podar et al., 2007). Hartmann and colleagues (2010) found that individuals with anorexia scored higher on a scale measuring interpersonal submissiveness. This could be comparable to the Agreeableness factor in the five factor model and supported by findings that suggest that these individuals have significantly decreased behavioral disturbances. Most studies do not seem to find a significant difference on factors similar to Openness, but Podar et al. (2007) found a significantly lower score on openness for individuals with anorexia than a control group.

There have also been some clear differences found between anorexia nervosa and bulimia. Research suggests that females with anorexia have decreased emotional

inhibition, Neuroticism, hostility, and have increased levels of public self-consciousness compared to females with bulimia (Forbush & Watson, 2006). Godart et al. (2006) found that individuals with anorexia-restricting were more likely to report obsessive-compulsive disorder than individuals with bulimia nervosa and those individuals with the restricting type of anorexia had social phobia appear more frequently than those suffering from bulimia. Furthermore, people suffering from anorexia tend to have lower levels of Extraversion which could be the main reason more individuals that are anorexia suffer from social phobia than people with bulimia (Furbush & Watson, 2006).

As for differences between the subtypes, several studies have found that patients with anorexia restricting type have higher scores on the Conscientiousness scale than patients with anorexia binge eating/purging type (Bollen & Wojciechowski, 2004; DaCosta & Halmi, 1992; Vitousek & Manke, 1994). This supports that restrictors are more constricting, conforming, and obsessive, while binge/purgers are more impulsive when it comes to stealing, drug and alcohol abuse, and mood states. Some researchers continue to argue that there is no significant difference in the personalities of individuals suffering from different subtypes of Anorexia Nervosa, specifically when using DSM criteria (Eddy et al., 2007; Pryor & Wiederman, 1996).

Prognosis and Treatment. Anorexia nervosa is widely studied, but is one of the most difficult disorders to treat. One of the largest studies on in-patient drop-out rates for anorexia nervosa reported that 31.6% of the clients prematurely left treatment (Zeeck, Hartmann, Buchholz, & Herzog, 2005). Furthermore, only about 50% of individuals that seek treatment for anorexia make a full recovery (Kahn & Pike, 2001). Therefore, many clinicians and researchers want to discover how to identify clients who may be at a higher

risk of dropping out of treatment or have a poorer prognosis. One way this is being done is using personality measures.

Research results from Zeeck et al. (2005) suggested that increased levels of depression, which is measured by the Neuroticism factor in the Big Five model, leads to more help seeking behaviors and these individuals are more likely to continue in therapy, but no other types of comorbidity could distinguish whether an individual would stay in therapy. However, another study found not relationship between depression or anxiety and the drop-out rates. (Franzen, Backmund, & Gerlinghoff, 2004).

Individuals who had more maturity fears were more likely to drop-out of treatment (Zeeck et al., 2005). This was defined as a fear of taking on more social roles which can be paralleled with parts of Extraversion. Having a part of the treatment focus on these anxiety provoking social roles may reduce drop-out and help the client have a better recovery. Crane, Roberts, and Treasure (2007) conducted a study that showed that obsessive-compulsive personality traits were a strong moderator for the outcome of therapy. A treatment format that is personalized for obsessive-compulsive traits may increase recovery rates and decrease drop-out rates.

Also, individuals with anorexia who are more impulsive and have excessive or over the top behaviors tend to prematurely terminate therapy more than other individuals (Franzen et al., 2004). These can be related to Neuroticism or Extraversion. Being able to pinpoint these traits in individuals and work on them immediately can lessen the chance of the clients making rash decisions.

This research suggests that teaching social skills to help alleviate anxiety during group therapy and to help decrease interpersonal deficits during other interactions would

help clients continue in therapy and may increase the number of individuals coming in for therapy. Also, helping individuals understand the process of therapy to give them a sense of control until obsessive-compulsive personality traits can be a focus of therapy.

Statement of the Problem

Research has shown that there are personality differences between individuals with anorexia and those without the disorder and differences among the disorder itself when looking at subtypes (e.g. Bollen & Wajciechowski, 2004; Cassin & von Ranson, 2005; Hartmann et al., 2010; Holliday et al., 2006). Researchers and clinicians use this information to help diagnose and treat the disorder. However, within these studies there is a common limitation or gap that has been brought into focus, whether or not there is a difference between individuals seeking and those not seeking treatment. This is a common limitation within all clinical research. It is more convenient to conduct research with clients that are already coming into a facility. Therefore, the information researchers and clinicians have on personality and eating disorders is one-sided with an overrepresentation of individuals seeking treatment.

There are only a couple of studies that have attempted to investigate this gap, where research has been conducted on this issue, there are several method shortcomings. Goodwin and Fitzgibbon (2002) found increased social anxiety in eating disorder patients who did not engage in treatment at an outpatient facility after intake. Intake results did not reveal any differences in demographic information, diagnoses, or seriousness of the eating disorder. However, this study recruited patients from an outpatient psychiatric

clinic and categorized those individuals suffering from an eating disorder who did not return as non-treatment seeking. These individuals may have sought treatment elsewhere.

Another study showed that women suffering from anorexia nervosa who did not seek treatment showed decreased negative emotion, reaction to stress, and alienation compared to those who did seek treatment (Perkins et al., 2005). This study recruited participants from an ongoing study on twins and substance abuse and considered seeking treatment as receiving therapy for drug or alcohol related issues. In addition, neither of the studies presented compared personality using the FFM. Therefore, the purpose of this study was to compare individuals who reported having anorexia and were seeking treatment to individuals who reported having anorexia and were not seeking treatment. Specifically, to examine personality differences using the FFM and to recruit participants accurately for the non-treatment seeking and treatment seeking groups for an eating disorder. Hopefully the results can be used to identify clients who may not want to seek treatment and develop a better treatment model for anorexia nervosa not solely based on individuals who are seeking treatment

The following research hypotheses and questions were considered:

1. Since Goodwin and Fitzgibbon (2002) found increased social anxiety among eating disorder patients who did not return after an initial intake, it was hypothesized that individuals with anorexia nervosa who were seeking treatment would score higher on the extraversion scale compared to individuals with anorexia nervosa who were not seeking treatment.
2. Research conducted by Perkins et al. (2005) found that people with anorexia that were seeking treatment had higher levels of personality disturbances which may

have caused increased distress and lead to them seeking treatment. Therefore, it was hypothesized that individuals with anorexia who were seeking treatment would score higher on the neuroticism scale compared to those with anorexia who were not seeking treatment.

3. The 5 factors in the FFM will do a significantly better job than chance itself at predicting which study group, seeking treatment or not seeking treatment, the participants fall into.
4. How do Agreeableness, Conscientiousness, and Openness differ among individuals with anorexia who are seeking treatment and individuals with anorexia who are not seeking treatment?

CHAPTER THREE

Method

Participants

There were 148 female participants from three online sources: a pro-anorexia site, an anorexia support group site, and Facebook. Instant feedback on the participants' personality traits were used as an incentive for them to participate in the study. The ages ranged from 18 years old to 55 years old with an average age of 23.43 (SD=7.34). The majority of the participants were Caucasian (80.4%) and heterosexual (72.3%). Participants could fall within four Body Mass Index (BMI) groups. An individual with a BMI below 18.5 is underweight, between 18.5 and 24.9 is normal, between 25.0 and 29.9 is overweight, and equal to or above 30.0 is obese (Centers for Disease Control and Prevention [CDC], 2011). There were 43 participants in the underweight range, 73 in the normal range, 16 in the overweight range, and 16 in the obese range.

The study divided participants into three groups. One group included individuals who self-reported suffering from anorexia nervosa, had a BMI below 18.5, scored greater than or equal to a 20 on the EAT-26, and endorsed that they have never sought treatment for anorexia nervosa. This group was called the non-treatment seeking anorexia group (n=33). The second group included individuals who self-reported having anorexia nervosa and were currently seeking treatment by choice. This group was called the treatment seeking anorexia group (n=32). The last group included individuals who did not report an eating disorder diagnosis, had a BMI greater than or equal to 18.5, and had never sought treatment for an eating disorder. This group was called the control group

(n=83). Within these groups there were some notable differences among the demographic variables discussed below. All of the demographic information broken down by groups can be found in Appendix A and are discussed further in directions for future research.

Measures

Demographics. The demographics included sex, age, height, weight, ethnicity, and sexual orientation. Additional diagnoses such as depression, anxiety, and alcohol and substance abuse or dependence were assessed using a simple self-report question asking whether the participant believed they were suffering from the disorders. Lastly, there were questions to assess if a clinical diagnosis of anorexia by a health professional had been made, if treatment has ever been sought out and if it was by choice or force, and if the individual believes they are in the recovering stages of anorexia.

Eating Attitudes Test 26 (EAT-26). The EAT-26 (Garner et al., 1982) is a 26-item scale that is used to assess for symptoms of eating disorders. The measure uses a 5-point Likert-type scale ranging from "Always" to "Never." Research has shown that the EAT is an effective tool to screen for individuals with undifferentiated DSM-IV eating disorders (Mintz & O'Halloran, 2000). Participants respond to statements that have been divided into three subscales: Bulimia (B), Dieting (D), and Oral Control (O). The D subscale is correlated with a distorted body image, the B subscale is associated to bulimic behavior, and the O subscale is related to self-control (Orbitello et al., 2006). The overall score is computed by adding all items with "Always" = 3, "Usually" = 2, "Often" = 1, "Sometimes" = 0, "Rarely" = 0, and "Never" = 0 with the exception of item 25 which is reverse scored. Scores above 20 indicate an increased probability of an individual having

an eating disorder. This measure was used to support participant's claims of suffering from anorexia and to eliminate controls on Facebook.

M5-50. The M5-50 Questionnaire (McCord, 2002) is a 50-item scale that is used to assess personality characteristics defined by Costa and McCrae's (1995) FFM. The FFM has 5 domains which include Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Participants rate the accuracy of statements on a 5-point Likert-type scale that ranges from "Very Inaccurate" to "Very Accurate". There are 10 statements for each domain. A raw score is obtained by adding all items and then a score is obtained by comparing T scores to a group of norms. Past research has shown that the M5-50 Questionnaire has good internal reliability for assessing the five major domains of the FFM (Socha et al., 2010).

Procedure

Participants were voluntarily recruited through three online sites: a pro-anorexia site, an anorexia support group, and Facebook. Participants began the study by clicking on a link that directed them to Qualtrics, an online survey creator that allows data to be directly uploaded into SPSS, which displayed the consent form. After reading the informed consent, participants had the option to continue in the study by selecting the next arrow at the bottom of the consent form or to discontinue the study. Next, a group of questionnaires were presented. The questionnaires included demographics, the Eating Attitudes Test-26 (Garner et al., 1982), and the M5-50 Personality Measure (McCord, 2002). After completing all the questionnaires, participants were presented with a brief overview of their personality as an incentive to complete the study. Finally, they were

debriefed about the study and given contact information in case they desired to learn more about the study.

CHAPTER FOUR

Results

Multivariate Analysis of Variance

Prior to performing a one-way between-groups multivariate analysis of variance (MANOVA), assumptions were tested for the MANOVA. The sample size, normality, outliers, linearity, and homogeneity of variance-covariance assumptions were all satisfied. Multicollinearity and singularity assumptions were tested by running correlations to check for dependent variables that may have been correlated too high or not at all, see Table 3. None of the dependent variables (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness) were correlated highly enough to need to exclude them from the analyses. All of the dependent variables were correlated with each other with the exception of Extraversion with Conscientiousness, Agreeableness with Openness, and Openness with Neuroticism. Because there was not a whole factor that was not correlated with the remaining factors, a MANOVA was still conducted instead of multiple independent analyses of variance (ANOVA).

Table 3

Correlations Between Dependent Variables to Rule-Out Multicollinearity and Singularity for the MANOVA

	Extraversion	Agreeableness	Conscientiousness	Neuroticism
Agreeableness	.276**	--	--	--
Conscientiousness	.149	.276**	--	--
Neuroticism	-.495**	-.545**	-.299**	--
Openness	.238**	.107	-.205**	.037

**Significant at the 0.01 level (2-tailed)

* Significant at the 0.05 level (2-tailed)

A MANOVA was performed to investigate group differences in the five domains of personality: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. The three groups were the non-treatment seeking anorexia group, the treatment seeking anorexia group, and the control group. Overall, there was a statistically significant difference between groups on the combined factors, F (10, 282) = 6.51, p < .001; Wilks' Lambda = .66; η^2 = .19. Looking at individual personality factors, there were significant differences between groups on the Extraversion factor, F (2, 145) = 8.67, p < .001, η^2 = .11, Agreeableness, F (2, 145) = 11.66, p < .001, η^2 = .14, Conscientiousness, F (2, 145) = 6.03, p = .003, η^2 = .08, and Neuroticism, F (2, 145) = 23.93, p < .001, η^2 = .25. The groups were not significantly different on the Openness factor.

Further analysis indicated that the control group (M = 33.88, SD = 8.14) was more extraverted than the non-treatment seeking anorexia group (M = 28.21, SD = 8.37), p = .004, and the treatment seeking anorexia group (M = 27.87, SD = 9.35), p = .002. There was no significant difference between the non-treatment seeking anorexia and treatment seeking anorexia groups on the Extraversion scale.

The non-treatment seeking anorexia group (M = 31.55, SD = 7.35) was less agreeable than the treatment seeking anorexia group (M = 36.81, SD = 6.39), p = .002, and the control group (M = 37.60, SD = 5.55), p < .001. There was no significant difference between the control group and the anorexia seeking treatment group on the Agreeableness scale.

The non-treatment seeking anorexia group (M = 30.70, SD = 7.84) was less conscientious than the treatment seeking anorexia group (M = 36.34, SD = 8.29), p = .007, and the control group (M = 35.41, SD = 6.77), p = .006. There was no significant difference between the control group and the anorexia seeking treatment group on the Conscientiousness scale.

The control group (M = 27.41, SD = 6.74) was less neurotic than the non-treatment seeking anorexia group (M = 35.61, SD = 5.40), $p < .001$, and the treatment seeking anorexia group (M = 33.75, SD = 6.65), $p < .001$. There was no significant difference between the non-treatment seeking anorexia and treatment seeking anorexia groups on the Neuroticism scale. See Table 4 for the means and standard deviations found in this study for each factor and study group. Since the M5-50 does not have a set of scores that are norms, Table 5 displays means that were found in a large study and can be used as a comparison group (Cooper et al., in press). The control group means on all the factors in the present study did not differ greatly from the comparison group means in the earlier study.

Table 4

Means of the Five Factors Broken Down By Study Group

Factor	Non-treatment Seeking (n = 33) M (SD)	Treatment Seeking (n = 32) M (SD)	Control (n = 83) M (SD)
Extraversion	28.21[a] (8.37)	27.88[a] (9.35)	33.88[b] (8.14)
Agreeableness	31.55[a] (7.35)	36.81[b] (6.39)	37.60[b] (5.55)
Conscientiousness	30.70[a] (7.84)	36.34[b] (8.29)	35.41[b] (6.77)
Neuroticism	35.61[a] (5.40)	33.75[a] (6.65)	27.41[b] (6.74)
Openness	40.27[a] (6.02)	38.63[a] (6.95)	39.40[a] (6.36)

Note. Means sharing the same superscript on each row do not significantly differ from one another.

Table 5

Comparison Data Collected from a Large M5-50 Study

Factor	N	M (SD)	Min	Max
Extraversion	760	34.86 (7.55)	11	50
Agreeableness	760	39.03 (5.27)	16	50
Conscientiousness	760	38.77 (6.67)	16	50
Neuroticism	760	23.61 (7.56)	10	50
Openness	760	39.63 (6.31)	19	50

Logistic Regression

In addition to the MANOVA, a logistic regression was used to determine if the five personality factors could predict if participants were seeking treatment or not. The control group was excluded from this analysis. Again, assumptions were tested for the statistical procedure. The sample size and outlier assumptions were satisfied. Similarly to the MANOVA, multicollinearity and singularity assumptions were tested for by running

correlations. It is important for the independent variables to not be highly correlated and independent variables to be correlated with the dependent variable. None of the dependent variables (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness) were correlated highly enough to exclude them from the analyses. Agreeableness and Conscientiousness were significantly correlated with the dependent variable; however, Extraversion, Neuroticism, and Openness were not. Although Extraversion, Neuroticism, and Openness were not correlated with the dependent variable, all five of the independent variables were included in the regression for the hypotheses and thesis requirements. See Table 5 for the correlation data.

Table 5

Correlations Between Variables to Rule-Out Multicollinearity and Singularity for the Logistic Regression

	Groups	Extraversion	Agreeableness	Conscientiousness	Neuroticism
Extraversion	-.059	--	--	--	--
Agreeableness	.313**	.276**	--	--	--
Conscientiousness	.336**	.149	.276**	--	--
Neuroticism	-.153	-.495**	-.545**	-.299**	--
Openness	-.119	.238**	.107	-.205**	.037

**Significant at the 0.01 level (2-tailed)

* Significant at the 0.05 level (2-tailed)

The logistic regression revealed that the full model with all five factors was statistically significant, chi squared χ^2 (5, n= 65) = 16.99, p = .005, indicating that the model was able to distinguish between participants who were seeking treatment and those who were not. The model explained between 23.0% and 30.7% of the variance in whether or not an individual was seeking treatment. With the model 70.8% of the cases

were correctly classified, whereas without the model only 50.8% of the cases were correctly classified.

Further examination indicated that only Agreeableness out of the five personality factors made a unique, statistically significant influence on the model, $p = .02$. For every unit increase in agreeableness a participant was a little more than 1 time more likely to seek treatment when controlling for the other 4 factors. Even though Agreeableness was the only significant contributor, it is important to note that Conscientiousness was approaching significance as a unique contributor to the model, $p = .054$. The logistic regression supports the findings of the MANOVA.

CHAPTER FIVE

Discussion

Discussion of Results

The goal of this study was to identify personality differences in individuals with self-reported anorexia who were seeking treatment, individuals with self-reported anorexia who were not seeking treatment, and a control group who did not exhibit disordered eating behaviors. The expectation is that these findings can be used to identify clients who may not want to seek treatment and develop a better treatment model for anorexia nervosa not solely based on individuals who are seeking treatment. Currently, research is very limited in the areas of therapy treatment options for individuals with anorexia and most research is conducted with individuals who are already seeking treatment (Keel & Haedt, 2008).

It was hypothesized that individuals with anorexia nervosa who were seeking treatment would score higher on the Extraversion scale compared to individuals with anorexia nervosa who were not seeking treatment. The Extraversion factor measures warmth, gregariousness, assertiveness, activity, excitement-seeking, and positive emotions. The results suggested that there was no significant difference between individuals seeking treatment and those who were not on the Extraversion factor. This contrasted from what other researchers found, but it could be the difference in the measures used or how study groups were divided (Goodwin & Fitzgibbon, 2002; Perkins et al., 2005).

The study by Perkins et al. (2005) used the Multidimensional Personality Questionnaire (Tellegen, 1978) that breaks down personality into many parts that do not correspond directly with the Big Five. To develop a hypothesis for Extraversion, Alienation was used as an equivalent to Extraversion. It was predicted that Extraversion would differ among treatment seekers and those not seeking treatment because Alienation differed between the groups in the Perkins et al study; however, the Extraversion factor encompasses more than alienation. Other areas on the MPQ that can be compared to Extraversion are Positive Emotionality and Aggression which may correspond closely to cheerfulness and assertiveness. These factors on the MPQ were not significant and cheerfulness and assertiveness on the M5-50 may have been the factors that kept the Extraversion factor from being significantly different. Goodwin and Fitzgibbon (2002) divided participants based on whether they returned to a specific clinic even though those individuals could have gone elsewhere for services whereas the present study assessed if the participants were seeking treatment or if they have ever sought treatment.

There was a significant difference between the control group and both self-reported anorexia groups on this factor, whether they were seeking treatment or not. Previous studies support this finding (Arkell & Robinson, 2008; Bollen & Wojciechowski, 2004; Hartmann at al., 2010; Holliday et al., 2006). This may be a result of the nature of the disorder. As discussed earlier, individuals with anorexia often times avoid social situations, have greater interpersonal stress, and more interpersonal deficits (Arkell & Robinson, 2008; Hartmann et al., 2010; Holliday et al., 2006). This could be for a variety of reasons such as fear of eating in front of others or avoidance of situations because they do not feel comfortable with the way their bodies look. Also, research

suggests that individuals with undifferentiated eating disorder diagnoses have been found to have higher scores for internalized shame than other clinical groups which mediates social anxiety (Grabborn, Stenner, Stangier, & Kaufhold, 2006).

Secondly, it was hypothesized that individuals with anorexia who were seeking treatment would score higher on the Neuroticism scale compared to those with anorexia who were not seeking treatment. The Neuroticism factor measures anxiety, anger, depression, self-consciousness, impulsiveness, and vulnerability so this is a logical finding. The results suggested that there was no significant difference between individuals seeking treatment and those who were not on this factor. This goes against an earlier study which found that individuals who did not continue treatment had lower levels of negative emotions, reaction to stress, and isolation, but this study included individuals seeking treatment for alcohol and drug abuse, not just for an eating disorder (Perkin et al., 2005). The findings from the current study suggest that factors other than the severity of the disorder are behind why individuals seek treatment for anorexia.

Even though no differences were found between those seeking and not seeking treatment for anorexia, higher levels of neuroticism were reported by individuals with anorexia than those without disordered eating. This has been indicated in earlier research, which has shown a clear difference in neuroticism when comparing individuals with anorexia nervosa and controls (Bollen & Wojciechowski, 2004; Holliday et al., 2006; Podar et al., 2007). Individuals with eating disorders are usually not able to control emotional reactions as well as normative samples and are more likely to suffer from an increased amount of psychological distress (Bollen & Wojciechowski, 2004; Podar et al., 2007).

There were no studies that could be found addressing the differences in individuals with anorexia nervosa who were seeking treatment and those who were not seeking treatment on the following factors: Agreeableness, Conscientiousness, and Openness. The results from this study suggest that individuals with self-reported anorexia who are not seeking treatment are less agreeable than those with self-reported anorexia who are seeking treatment. Also, agreeableness was a significant predictor in whether or not the individual was seeking treatment or not. Therefore, individuals who are not seeking treatment are more likely to be skeptical, deceptive, self-centered, aggressive, arrogant, and less sympathetic. These finding suggest that it may be important to be upfront and honest when discussing possible treatment options with these individuals. Treatment programs may want to focus on these traits and how they could be fueling the maladaptive behaviors. Interestingly, individuals in the anorexia group who were seeking treatment did not differ from the control group on agreeableness. This could be a factor in why earlier studies have found mixed results when looking at personality differences in individuals with anorexia and those without the disorder (Bollen & Wojciechowski, 2004; Holliday et al., 2006; Podar et al., 2007).

In addition, the results from this study suggest that individuals with self-reported anorexia who are not seeking treatment are less conscientious than those with self-reported anorexia who are seeking treatment. Also, conscientiousness was almost a significant predictor in whether or not the individual was seeking treatment or not. Thus, individuals who are not seeking treatment tend to have a lower opinion of themselves, are unable to get organized, are less reliable, lack ambition, more likely to procrastinate and quit, and often speak out without thinking about the consequences. Therefore, it would be

understandable that they would be less likely to seek treatment. These individuals do not have as much motivation or drive to seek treatment. The fact that there is a significant difference between those who are and are not seeking treatment could be a factor in why there is mixed results on whether or not there is a difference in Conscientiousness between individuals with anorexia and those without the disorder. When treating anorexia it may be important to address the severe health concerns of the disorder in the initial session to increase the client's awareness of the seriousness of continuing to seek help and to help the client have many successes in the beginning of treatment to ensure they do not feel helpless.

Lastly, there were no significant differences on the Openness factor. This has been consistent across all studies with the exception of Podar et al. (2007). They found that Openness scores were significantly lower for individuals with anorexia. Meaning individuals with anorexia would be more conventional, down-to-earth, have narrower interests, be less artistic, and less analytical than those without the disorder. There has not been any research that has found significant score differences on this factor between individuals seeking treatment and those not seeking treatment for anorexia.

Limitations and Future Research

There are several limitations of this study. Those who volunteered to participate in this study could differ from those who chose not to participate. For example, individuals who are more open and extraverted could be more willing to become a part of a research project. Other factors that play into a person's willingness to participate would be their knowledge of eating disorders. Therefore, the participants may be more aware of

the subject which could affect the answers given on the disordered eating questionnaire. In addition, there was a difference between the average age within the study groups as seen in the table in Appendix A. Age could have been a significant factor in why some individuals were or were not seeking treatment for anorexia.

As with all self-report questionnaires, there is no way to guarantee that participants are answering questions honestly and social desirability could have altered responses to questions about weight and eating habits. This is especially important since the study groups were constructed largely from BMI. Validity questions were included that asked participants to mark a certain answer. If this was not done correctly the participants scores were discarded. Another limitation was the use of broad personality traits. Future research studies could explore the facets under each personality factor.

Lastly, it would have been helpful to have face-to-face interviews with participants instead of all the questionnaires being online. This would have allowed for a more definite diagnosis of anorexia nervosa. Also, it would have helped get a better idea of each individual's personality and other personality measures could have been used.

Based on the demographic information collected in this study, research looking at sexual orientation and alcohol abuse or dependence among individuals with anorexia could reveal significant differences between those seeking treatment and not seeking treatment for anorexia. This study found that only 48.5% of individuals with self-reported anorexia who were not seeking treatment identified as heterosexual as opposed to 81.3% of the individuals in the seeking treatment group. Results also showed that only 6.1% of the individuals in the anorexia group that were not seeking treatment believed they were

abusing or were dependent on alcohol, whereas 15.6% of the individuals in the seeking treatment group endorsed alcohol abuse or dependence.

Conclusions

Overall, this study suggests that individuals with self-reported anorexia who are not seeking treatment are less agreeable and less conscientious than individuals with anorexia who are seeking treatment and a control group without disordered eating behaviors. Also, individuals with anorexia, whether seeking treatment or not, tend to be less extraverted and more neurotic than individuals from a control group without disordered eating behaviors.

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Appendices

APPENDIX A

Demographics Tables

Table 7

Distribution of Age Among Study Groups

	Age		
	M (SD)	Minimum	Maximum
Anorexia Nontreatment Seeking (n=33)	19.82 (3.09)	18	33
Anorexia Seeking Treatment (n=32)	23.41 (7.13)	18	53
Control (n=83)	24.88 (8.15)	18	55

Table 8

Distribution of Ethnicity Among Study Groups

	Caucasian	Asian	Native American	Hispanic/ Latino	African	Middle Eastern	Other	Prefer Not to Answer
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Anorexia Nontreatment Seeking	27 (81.8%)	1 (3.0%)	0 (0%)	0 (0%)	0 (0%)	1 (3.0%)	1 (3.0%)	3 (9.1%)
Anorexia Seeking Treatment	25 (78.1%)	0 (3.1%)	1 (3.1%)	1 (3.1%)	0 (0%)	0 (0%)	2 (6.3%)	1 (3.1%)
Control	67 (80.7%)	4 (4.8%)	1 (1.2%)	3 (3.6%)	2 (2.4%)	0 (0%)	5 (6.0%)	1 (1.2%)

Table 9

Distribution of Sexual Orientation Among Study Groups

	Heterosexual	Homosexual	Bisexual	Questioning	Other	Prefer Not to Answer
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Anorexia Nontreatment Seeking (n=33)	16 (48.5%)	1 (3.0%)	9 (27.3%)	2 (6.1%)	2 (6.1%)	3 (9.1%)
Anorexia Seeking Treatment (n=32)	26 (81.3%)	2 (6.3%)	2 (6.3%)	1 (3.1%)	0 (0%)	0 (0%)
Control (n=83)	65 (78.3%)	2 (2.4%)	7 (8.4%)	4 (4.8%)	2 (2.4%)	1 (1.2%)

Table 10

Distribution of Self-Reported Disorders Among Study Groups

	Depression	Anxiety	Alcohol Abuse/ Dependence	Substance Abuse/ Dependence
	n (%)	n (%)	n (%)	n (%)
Anorexia Nontreatment Seeking (n=33)	22 (66.7%)	22 (66.7%)	2 (6.1%)	6 (18.2%)
Anorexia Seeking Treatment (n=32)	22 (68.8%)	24 (75.0%)	5 (15.6%)	6 (18.8%)
Control (n=83)	26 (31.3%)	23 (27.7%)	2 (2.4%)	1 (1.2%)

APPENDIX B

Informed Consent for Personality and Eating Habits Study

What is the purpose of this research?

The purpose of this research is to investigate differences in personality factors among individuals with different eating habits.

What will be expected of me?

If you are a female who is 18 years of age or older, you are eligible to participate in this study. This study is limited to females since the majority of individuals with varying eating habits are females. Participation is completely voluntary and you can decide to discontinue filling out the questionnaires at any time without penalty. If you consent to participate, you will be asked to fill out 3 online questionnaires. At the end of the study you will be given a brief description of your personality traits.

How long will the research take?

Completing the survey will take approximately 20 minutes. Some people need more or less time, but we ask you to please read each question carefully.

Will my answers be anonymous?

Your answers will remain confidential. Specifically, you will not be asked to provide your name or identifying information on the questionnaires. All information collected will be kept on a password protected computer.

Can I withdraw from the study if I decide to?

You can discontinue the study at any time without penalty; however, after your answers are submitted there is no way to connect you to your answers so there is no way to withdraw your submission.

Is there any harm that I might experience from taking part in the study?

There may be some emotional discomfort that you may experience as a result of reflecting on the questions that are being asked. Every effort will be made to ensure your safety and well-being. Appropriate resources will be provided at the end of the study.

How will I benefit from taking part in the research?

In addition to the direct benefit of learning more about your personality traits, the potential benefits include; the opportunity to experience first-hand how researchers conduct surveys and gather information in this type of psychological research. Also, your participation may ultimately inform clinicians, researchers, consumers, and the community at large regarding personality and eating behaviors.

What are some additional resources?

If you want to contact a psychologist in your area for additional help please go to the following link: http://locator.apa.org/

You can get additional information at http://www.apa.org/topics/eating/index.aspx

Who should I contact if I have questions or concerns about the research?

Contact me (Ashley Bridges) at anbridges1@catamount.wcu.edu. You can also contact Dr. McCord, faculty director of the project, at 828-227-3363 (or mccord@email.wcu.edu). If you have concerns about your treatment as a participant in this study, contact the chair of WCU's Institutional Review Board through the office of Research Administration at WCU (828-227-7212).

APPENDIX C

Personality Report

The personality test you completed as a part of this study is based on the leading theory of human personality, known as the Five Factor Theory, or the "Big Five." We measured your score on each of the five broad personality factors and compared it our sample of 763 individuals. The interpretive statements provided below are based on statistical probabilities and should be generally accurate about you. Naturally, there may be some statements that do not fit you exactly.

Extraversion

The first factor we measure is Extraversion. People with high scores on this scale are typically described as gregarious, talkative, energetic, and assertive. Low scorers are described as introverted, socially avoidant, and relatively passive interpersonally.

(Low) Your score on this factor fell in the lower quarter of our sample. This suggests that you are fairly reserved and quiet and enjoy being by yourself. Others with scores in this range usually prefer to remain in the background and let others do the talking.

(Medium) Your score on this factor fell in the middle half of our sample. This suggests that you are not the most outgoing person in the room, but neither can you be described as a wall-flower. It is likely that you exhibit a mid-range physical pace and energy level, and a generally balanced approach to social activity.

(High) Your score on this factor fell in the upper quarter of our sample. This suggests that you are outgoing and gregarious, and that you enjoy being around other people. Others with scores in this range are described as warm, affectionate, and friendly.

Agreeableness

The next factor is named Agreeableness. People with high scores on this factor are described as warm, empathic, compassionate, and kind. Low scorers are irritable, argumentative, competitive, and antagonistic.

(Low) Your score on this factor fell in the lower quarter of our sample. Others with similar scores are often described as cynical, untrusting, and suspicious. They usually assume that others may not be telling the truth, and in most situations they take a competitive, rather than a cooperative, approach.

(Medium) Your score on this scale fell in the middle half of our sample. This suggests that you are neither uniformly trusting, nor do you distrust most people. You may not seek out ways to help others, but nor do you shy away from such opportunities. Similarly, you may be

cooperative and team-oriented in some situations, but in other situations you take a more competitive approach.

(High) Your score on this factor fell in the upper quarter of our sample. People with similar scores are often described as good-natured, trusting and helpful. In approaching group situations, they usually take a cooperative rather than a competitive stance. They tend to be warm, soft-hearted, and compassionate toward others.

Conscientiousness

This is in some ways a measure of self-control and self-discipline, though achievement motivation is also involved. People with high scores on the Conscientiousness factor tend to be good planners and organizers, and they may be described as purposeful, strong-willed, and determined. Low scorers tend to be disorganized, careless, and less focused in working toward goals.

(Low) Your score on this factor fell in the lower quarter of our sample. Others with similar scores are often described as careless and unreliable. Often these people have a low opinion of their own abilities and report that they have a lot of trouble getting organized.

(Medium) Your score on this scale fell in the middle half of our sample. It is likely that you are not obsessively neat and organized, nor overly rigid in your time management, but neither are you a total slacker. Others with mid-range C scores are generally reliable and punctual, reasonably organized in terms of managing their tasks and lives, and they usually know where to find things even if their possessions are not in meticulously neat order.

(High) Your score on this factor fell in the upper quarter of our sample. People with similar scores are often described as highly reliable, punctual, careful, neat and organized. Employers love to hire people with high C scores. This is a great characteristic to have, as long as you don't over-do it.

Neuroticism

This factor has to do with emotional factors such as moodiness, worry, tension, anxiety, and general emotional distress. A better name for the overall factor is "dysfunctional negative emotionality." People with high scores tend to worry excessively, they may be nervous and insecure, and they may be prone to conditions such as depression. Low scorers are calm, self-secure, easy-going, relaxed, and laid-back. This is a dimension of **normal** personality, reflecting traits that all of us have to some degree. The N scale is not a formal measure of clinical or abnormal characteristics.

(Low) Your score on this factor fell in the lower quarter of our sample. Others with similar scores are often described as calm, relaxed and satisfied. They are easy-going and slow to anger, and they rarely express negative or depressed feelings. They perceive themselves as capable of solving problems and successfully facing the challenges of their daily lives.

(Medium) Your score on this scale fell in the middle half of our sample. This is by definition the normal range where most people fall. Thus, it is likely that you can experience some feelings of anxiety or even depression at times, but these things pass, and you don't get stuck in them. While you likely to experience a range of emotions, from sadness to happiness, from tense to relaxed, these are all within normal limits. Your friends probably do not describe you as particularly "moody" and would more likely see you as emotionally stable.

(High) Your score on this factor fell in the upper quarter of our sample. People with similar scores are often described as nervous, insecure and on-edge. They often struggle with feelings of tension, and they may worry excessively. Indeed, friends and family members may often describe them as "worriers."

Openness to Experience

This factor covers many characteristics that may be roughly grouped under the label of "open-mindedness." These include imagination and creativity, sensitivity, aesthetic and artistic interests, intellectual curiosity, and preference for variety and change. High scorers tend to be politically liberal and unconventional. They are curious and tend to seek out new experiences. Low scorers are more conventional and prefer routine and sameness. They are usually more politically and socially conservative, and they often have a narrower scope of interests.

(Low) Your score on this factor fell in the lower quarter of our sample. Others with similar scores are often described as unartistic, down-to-earth and conventional. They prefer the familiar to the novel, and they may show a more restrained range of emotional expressiveness.

(Medium) Your score on this scale fell in the middle half of our sample. You are not among the most imaginative people around, nor are you devoid of imagination. You may not seek out new experiences with relish, but you do not avoid them either. You may be open to the ideas of other people but are not the first to endorse new fads and fashions.

(High) Your score on this factor fell in the upper quarter of our sample. People with similar scores are often described as curious, creative and imaginative. Open people question authority and tend to be very open to new political and social ideas. They also tend to be sensitive people who are in touch with their own emotions.

Summary

Thank you for participating in this research project. We hope that you have found this brief personality summary to be useful and thought-provoking. It is important to remember that our innate personality traits certainly have some influence on us, but they do not by themselves determine our choices and our actions. We can choose to override our traits in situations where that is warranted. Indeed, a greater awareness of our personality trait structure can actually help us make better choices in attaining our life goals.

Resources

If you want to contact a psychologist in your area for additional help please go to the following link: http://locator.apa.org/

You can get additional information on eating disorders at http://www.apa.org/topics/eating/index.aspx

If you have questions or concerns about the research please contact me (Ashley Bridges) at anbridges1@catamount.wcu.edu. You can also contact Dr. McCord, faculty director of the project, at 828-227-3363 (or mccord@email.wcu.edu). If you have concerns about your treatment as a participant in this study, contact the chair of WCU's Institutional Review Board through the office of Research Administration at WCU (828-227-7212).

APPENDIX D

Eating Attitudes Test – 26

Answer the following questions as honestly as possible.

1. Am terrified about being overweight

   Always Usually Often Sometimes Rarely Never

2. Avoid eating when I am hungry

   Always Usually Often Sometimes Rarely Never

3. Find myself preoccupied with food

   Always Usually Often Sometimes Rarely Never

4. Have gone on eating binges where I feel that I may not be able to stop

   Always Usually Often Sometimes Rarely Never

5. Cut my food into small pieces

   Always Usually Often Sometimes Rarely Never

6. Aware of the calorie content of foods that I eat

   Always Usually Often Sometimes Rarely Never

7. Particularly avoid foods with high carbohydrate content (i.e. Bread, rice, potatoes, etc.)

   Always Usually Often Sometimes Rarely Never

8. Feel that others would prefer if I ate more

   Always Usually Often Sometimes Rarely Never

9. Vomit after I have eaten

   Always Usually Often Sometimes Rarely Never

10. Feel extremely guilty after eating

    Always Usually Often Sometimes Rarely Never

11. Am preoccupied with a desire to be thinner

    Always Usually Often Sometimes Rarely Never

12. Think about burning up calories when I exercise

    Always Usually Often Sometimes Rarely Never

13. Other people think that I am too thin

    Always Usually Often Sometimes Rarely Never

14. Am preoccupied with the thought of having fat on my body

    Always Usually Often Sometimes Rarely Never

15. Take longer than others to eat my meals

    Always Usually Often Sometimes Rarely Never

16. Avoid foods with sugar in them

    Always Usually Often Sometimes Rarely Never

17. Eat diet foods

    Always Usually Often Sometimes Rarely Never

18. Feel that food controls my life

    Always Usually Often Sometimes Rarely Never

19. Display self-control around food

    Always Usually Often Sometimes Rarely Never

20. Feel that others pressure me to eat

    Always Usually Often Sometimes Rarely Never

21. Give too much time and thought to food

    Always Usually Often Sometimes Rarely Never

22. Feel uncomfortable after eating sweets

Always Usually Often Sometimes Rarely Never

23. Engage in dieting behavior

Always Usually Often Sometimes Rarely Never

24. Like my stomach to be empty

Always Usually Often Sometimes Rarely Never

25. Enjoy trying new rich foods

Always Usually Often Sometimes Rarely Never

26. Have the impulse to vomit after meals

Always Usually Often Sometimes Rarely Never

APPENDIX E

M5-50 Personality Measure

Without spending too much time dwelling on any one item, just give the first reaction that comes to mind.

In order to score this test accurately, it is very important that you answer *every* item, without skipping any. You may change an answer if you wish.

It is ultimately in your best interest to respond as honestly as possible. Mark the response that best shows how you really feel or see yourself, not responses that you think might be desirable or ideal.

1 = Inaccurate
2 = Moderately Inaccurate
3 = Neutral
4 = Moderately Accurate
5 = Accurate

1. Have a vivid imagination	1	2	3	4	5
2. Believe in the importance of art	1	2	3	4	5
3. Seldom feel blue	1	2	3	4	5
4. Have a sharp tongue	1	2	3	4	5
5. Am not interested in abstract ideas	1	2	3	4	5
6. Find it difficult to get down to work	1	2	3	4	5
7. Panic easily	1	2	3	4	5
8. Tend to vote for liberal political candidates	1	2	3	4	5
9. Am not easily bothered by things	1	2	3	4	5
10. Make friends easily	1	2	3	4	5
11. Often feel blue	1	2	3	4	5
12. Get chores done right away	1	2	3	4	5

13. Suspect hidden motives in others	1	2	3	4	5
14. Rarely get irritated	1	2	3	4	5
15. Do not like art	1	2	3	4	5
16. Dislike myself	1	2	3	4	5
17. Keep in the background	1	2	3	4	5
18. Do just enough work to get by	1	2	3	4	5
19. Am always prepared	1	2	3	4	5
20. Tend to vote for conservative political candidates	1	2	3	4	5
21. Feel comfortable with myself	1	2	3	4	5
22. Avoid philosophical discussions	1	2	3	4	5
23. Waste my time	1	2	3	4	5
24. Believe that others have good Intentions	1	2	3	4	5
25. Am very pleased with myself	1	2	3	4	5
26. Have little to say	1	2	3	4	5
27. Feel comfortable around other people	1	2	3	4	5
28. Am often down in the dumps	1	2	3	4	5
29. Do not enjoy going to art museums	1	2	3	4	5
30. Have frequent mood swings	1	2	3	4	5
31. Don’t like to draw attention to myself	1	2	3	4	5
32. Insult people	1	2	3	4	5
33. Have a good word for everyone	1	2	3	4	5
34. Get back at others	1	2	3	4	5

35. Carry out my plans	1	2	3	4	5
36. Would describe my experiences as somewhat dull	1	2	3	4	5
37. Carry the conversation to a higher level	1	2	3	4	5
38. Don’t see things through	1	2	3	4	5
39. Am skilled in handling social situations	1	2	3	4	5
40. Respect others	1	2	3	4	5
41. Pay attention to details	1	2	3	4	5
42. Am the life of the party	1	2	3	4	5
43. Enjoy hearing new ideas	1	2	3	4	5
44. Accept people as they are	1	2	3	4	5
45. Don’t talk a lot	1	2	3	4	5
46. Cut others to pieces	1	2	3	4	5
47. Make plans and stick to them	1	2	3	4	5
48. Know how to captivate people	1	2	3	4	5
49. Make people feel at ease	1	2	3	4	5
50. Shirk my duties	1	2	3	4	5

APPENDIX F

Demographics Questionnaire

Before you receive your test results, please read and answer the following questions.

Sex:

___ Male
___ Female
___ Transgendered

Age: ___

Height (inches or meters): ___

Weight (pounds or kilograms): ___

Ethnicity:

___ Caucasian
___ African
___ Native American
___ Hispanic/Latino
___ Asian
___ Middle Eastern
___ Other: _____
___ Prefer not to answer

Sexual Orientation:

___ Heterosexual
___ Homosexual
___ Bisexual
___ Questioning
___ Other: _____
___ Prefer not to answer

Do you believe you have an Eating Disorder? If so, what disorder?

___ Yes, I have been diagnosed by a healthcare professional: _____
___ Yes: _____
___ No

Please mark any of the following disorders that you believe you are suffering from:

___ Depression
___ Anxiety
___ Alcohol Abuse/Dependence
___ Substance Abuse/Dependence
___ Other: _____
___ Other: _____

Are you seeking or have you sought treatment for an Eating Disorder or eating behaviors?

___ Yes, by choice
___ Yes, by force
___ No

Do you believe that you are currently in the recovering stage of an Eating Disorder?

___ Yes
___ No