PURGING DISORDER: AN EXPLORATORY INVESTIGATION OF PHENOMENOLOGY, PSYCHOLOGICAL CORRELATES, AND DISTINCTIVENESS AS A DIAGNOSTIC CATEGORY

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by

Kathryn Smith

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Thesis written by
Kathryn Smith
B.A. Macalester College, 2008
M.A., Kent State University, 2011

Approved by

___________________________, Advisor
Janis H. Crowther
___________________________, Chair, Department of Psychology
Maria Zaragoza
___________________________, Dean, College of Arts and Sciences
John R. Stalvey
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CHAPTER 1

INTRODUCTION

Throughout the past three decades a vast amount of literature has emerged in the field of eating pathology research. Much of this study has addressed the categorization of eating disorders and diagnostic criteria in the Diagnostic and Statistical Manual of Mental Health Disorders (DSM-IV-TR; American Psychiatric Association, 2000). Although there is a general consensus among psychologists that Anorexia Nervosa (AN) and Bulimia Nervosa (BN) are clinically significant and distinct categories of eating disorders, most individuals who have clinically significant symptoms of eating pathology do not meet the current diagnostic criteria for either diagnosis (e.g., Keel, Haedt, & Edler, 2005; Machado, Machado, Goncalves, & Hoek, 2007; Wade, 2007). Thus, such individuals most often receive a diagnosis of an Eating Disorder Not Otherwise Specified (EDNOS), in which the frequency and/or severity of symptoms are, according to the DSM-IV-TR, at “subthreshold” levels. However, many experts have recognized the problematic nature of such broad categorization of subthreshold eating disorders, as this is a group of highly heterogeneous patterns of behaviors that are believed to have clinical significance (Crow, 2007; Fairburn & Cooper, 2007; Fairburn, Cooper, Bohn, Conner, Doll, & Palmer, 2007; Machado et al., 2007).
Defining PD

Purging Disorder (PD) is one such EDNOS category that has been the focus of increasing study. Currently PD is classified as “EDNOS” or “EDNOS-P” in the DSM-IV-TR, yet recent literature suggests it may be a distinct and clinically significant disorder (Keel et al., 2005). In general, PD is characterized by recurrent purging behavior in the absence of objective binge episodes, an undue influence of weight and shape on self-evaluation, and maintenance of a normal weight, as indicated by a Body Mass Index (BMI) of 19 to 25 (e.g., Binford & leGrange, 2005; Keel, 2007; Mond, Hay, Rodgers, Owen, Crosby, & Mitchell, 2006). Although currently there is no consensus on the definition of PD, there has been recent discussion of its inclusion in the upcoming DSM-V.

In a review of the published literature on PD, Keel and Striegel-Moore (2009) investigated the clinical utility of PD. Based on the various PD definitions that have been used across studies, they proposed five diagnostic criteria for PD: (1) recurrent purging in order to influence weight or shape (e.g., self-induced vomiting, laxative abuse, enemas, diuretics), (2) purging occurs, on average, at least once a week for three months, (3) self-evaluation is unduly influenced by body shape or weight or there is an intense fear of gaining weight or becoming fat, (4) the purging is not associated with objectively large binge episodes, and (5) the purging does not occur exclusively during the course of anorexia nervosa or bulimia nervosa. Additionally, Haedt and Keel (2010) investigated the syndrome validity of PD by varying the diagnostic criteria by type of compensatory behavior (purging vs. non-purging) and frequency (once vs. twice per week) among a sample of 1736 women and 755 men. The authors found that distinguishing between
purging and non-purging behavior maximized the difference between PD and normality (i.e., excluding non-purging behavior from the PD definition), yet reducing the minimum frequency of purging behavior to once per week did not significantly impact the levels of external validators (i.e., perfectionism, substance use, satisfaction with school and relationships) associated with PD. Therefore, setting the minimum purging frequency to once per week was recommended for PD diagnostic criteria. Nevertheless, the behaviors associated with PD fail to meet current DSM-IV-TR diagnostic criteria. Thus, PD has been relegated to the EDNOS category, although evidence suggests that this syndrome is comparable to BN, BED, and AN in frequency of occurrence and symptom severity (Binford & leGrange; Keel et al., 2005). In sum, PD is currently an understudied disorder within the EDNOS category of eating pathology. The present investigation sought to explore the prevalence, phenomenology, and psychological correlates of PD. How PD compares to other categories of eating disorders (e.g., BN) will help to determine whether PD is in fact a disorder worthy of separate categorization, or if it is better conceptualized as a precursor or variant of existing eating disorder categories. Specifically, the present study addresses these questions by comparing eating pathology symptoms, body image disturbance, and psychological correlates of individuals with PD to healthy controls, individuals with BN, and individuals who exhibit highly restrained eating behavior, which is thought to be a precursor to full-syndrome bulimic symptomatology (e.g., Fairburn, 2008).

Though relatively few studies have examined the prevalence of PD, research has suggested that PD may occur at similar, if not greater, rates as other eating disorders.
Wade, Bergin, Tiggemann, Bulik, and Fairburn (2006) examined lifetime prevalence rates of eating disorders among 1002 female twins in Australia. The authors found that 5.3% of the sample had met criteria for PD. The same study found that lifetime prevalence rates for AN, BN, and BED were 1.9%, 2.9%, and 2.9%, respectively (Wade et al., 2006). Favaro, Ferrara, and Santonastaso (2003) reported a 1.1% lifetime prevalence rate of PD among a community sample of 934 females in Italy; prevalence rates for AN, BN, and BED in the same sample were 2.0%, 4.6%, and .6%, respectively.

Based on such findings, the prevalence of PD may be comparable to prevalence estimates of eating disorders in the United States. From a national comorbidity survey replication, Hudson, Hiripi, Pope, and Kessler (2007) determined that lifetime prevalence estimates of AN, BN, BED, and subthreshold BED were .6%, 1.0%, 2.8%, and 1.2%, respectively. Crowther, Armey, Luce, Dalton, and Leahey (2008) examined the point prevalence of BN, EDNOS, and related eating disorder symptomatology among 6,844 female undergraduates across five 3-year time periods from 1990 to 2004; during this 15-year period, the percentage of PD ranged from 0.3 to 1.0%. More recently, Haedt and Keel (2010) reported a point prevalence of PD among a sample of 1736 women that ranged from 0.6% (using a PD definition requiring purging at least twice per week) to 5.5% (using a definition requiring purging and/or nonpurging behavior at least once per week). However, to date, no large-scale epidemiological studies in the United States have reported lifetime prevalence rates for PD, which is likely due to its current classification as EDNOS, as well as the “skip rules” employed in many structured interviews that assess eating pathology (Keel, Wolfe, Gravener, & Jimerson, 2008). That is, purging
behaviors are often not queried if participants (1) deny any history of abnormally low weight, or (2) do not report objectively large binge episodes. Thus, there may be a systematic bias in interview techniques that results in an underreporting of PD symptoms.

The results of several recent studies provide evidence for the clinical significance of PD, in that individuals with PD show increased level of impairment compared to individuals without eating disorders. Keel et al. (2005) found that participants with PD ($n=37$) reported significantly higher levels of general psychopathology, eating pathology, and personality disorders than controls ($n=35$). A more recent study by Keel et al. (2008) concluded that PD ($n=24$) was associated with elevated levels of distress and impairment compared to controls ($n=38$) after controlling for co-morbid disorders; such data further support the clinical significance of PD symptoms.

With respect to comparisons of individuals with PD to individuals with other eating disorders, research has yielded mixed findings regarding the severity of PD symptomatology as compared to the severity of symptomatology associated with other eating disorder diagnoses (e.g., BN). For example, two studies demonstrated that women with PD did not significantly differ from those with BN on measures of symptom severity, body dissatisfaction, or dietary restraint (Keel, Mayer, & Harden-Fischer, 2001; Keel et al., 2005). Keel et al. (2005) found that the PD and BN groups did not significantly differ on levels of impairment, yet the BN group ($n=57$) reported more distress than the PD group. Based on this finding, Keel et al. (2008) suggested that PD may be more ego-syntonic than BN, albeit still clinically significant. Keel et al. (2005) also found that lifetime diagnoses of mood, substance use, and anxiety disorders were not significantly different
between BN (n=39) and PD participants. Similarly, Binford and LeGrange (2005) reported similar levels of depression, anxiety, dietary restraint, and substance use between groups of adolescents with BN (n=36) and PD (EDNOS-P; n=20).

In contrast, a growing body of literature suggests that individuals with BN generally report greater levels of psychopathology compared to individuals with PD. For instance, Fink, Smith, Gordon, Holm-Denoma, and Joiner (2009) and Keel et al. (2001) found that BN participants reported significantly more impulsive behaviors compared to PD participants; however, this difference was not replicated in two related studies (Keel et al., 2005; Keel et al., 2008). Also, the existing research on differences in comorbid mood disorders, namely depression and anxiety, between BN and PD has yielded inconsistent findings. Although Keel et al. (2005) found that BN and PD participants had similar lifetime rates of mood disorders (i.e., anxiety and depression), BN participants reported greater levels of current mood disorders compared to PD participants. In another comparative study of PD and BN, Keel et al. (2008) found that BN was associated with higher lifetime and current mood disorders than PD. Fink et al. (2009) also reported a significantly higher anxiety levels among individuals with BN than those with PD. In addition to mood disturbances, levels of self-esteem and cognitive preoccupations/distortions may differ between BN and PD. Binford and LeGrange (2005) found that EDNOS-P (i.e., PD) participants reported higher levels of self-esteem and relatively lower shape/weight/eating concerns compared to BN participants. However, other studies (e.g., Fink et al., 2009) have failed to replicate these findings. Given the
variability of the aforementioned findings, it is also important to consider the possibility of diagnostic crossover between individuals with PD and BN.

Although most studies of PD have been cross-sectional in nature, longitudinal research has supported the distinctiveness of PD. Keel et al. (2005) found little cross-over between groups of participants with BN and PD over a six-month follow-up period, and none of the PD participants in a study by Binford and LeGrange (2005) met criteria for BN during the six months prior to the study. Thus, the existing research findings support the longitudinal stability of PD diagnoses and its validity as a diagnostic category.

Conceptualizing PD

Although some literature suggests that individuals with PD may differ from those with BN on measures of eating pathology and psychosocial correlates, PD also may share characteristics with other eating pathologies. In a comparison of individuals with BN, AN, PD, BED, and no eating disorder, Fink et al. (2009) found that all eating disorder groups reported lower levels of self-esteem than the non-eating disordered group, yet the eating disorder groups did not differ significantly from each other on levels of self-esteem. Similarly, the eating disorder groups did not differ significantly from each other on levels of body dissatisfaction, but all reported significantly greater dissatisfaction than the non-eating disordered group. In the same study, the PD group did not differ significantly from the BN on a drive for thinness measure (EDI-DT), yet both the PD and BN groups scored higher on this measure than the non-eating disordered group. The BN and PD groups also endorsed purging ideation (as indicated by item 53 on the EDI: “I have thought about
trying to vomit to lose weight") at higher frequencies (50% and 42.9%, respectively) than the AN, BED, and non-eating disordered groups (27.3%, 10%, and 1.6%, respectively).

Taken together, the existing literature suggests that PD shares some characteristics with other eating pathologies (e.g., body dissatisfaction, purging ideation), yet PD also appears to be distinctive in other respects (e.g., levels of impulsivity, rates of mood disorders). However, these findings are far from conclusive, and many of the published studies on PD have yielded contradicting evidence regarding the diagnostic validity of the syndrome. In part, this may be due to the fact that the criteria used to define PD have varied widely, and some studies may have lacked the statistical power necessary to find significant differences between PD and other eating pathologies. Therefore, it is necessary to both conceptualize the syndrome within a framework of empirically supported theories of eating pathology and further explore the phenomenology of PD. Doing so will inform current and future diagnostic, research, and treatment approaches.

Restraint Theory

Thus far, no studies have conceptualized PD within restraint theory, which provides a unifying conceptualization of eating pathologies and has been supported by experimental and clinical research (e.g., Engelberg, Gauvin, & Steiger, 2005; Polivy & Herman, 1985; Wilson, 2002). Based on Herman and Polivy’s (1980; 1984; 1985) explanation of the relationship between dieting and binge episodes, restraint theory postulates that both the physiological and psychological aspects of restrained eating increase the likelihood of subsequent binge eating. In an effort to lose weight and limit caloric intake for appearance-related reasons, restrained eaters restrict their food intake by adhering to unrealistic, rigid
dietary rules (Polivy & Herman, 1985). Such individuals tend to dichotomously discriminate between “good” (diet) foods and “bad” (diet-breaking) foods, and restrained eaters rely heavily on these inhibitory cognitive controls in order to suppress normal hunger and satiety signals (Polivy & Herman, 1985). Rigid dietary restraint, when coupled with biological, cognitive, and affective factors related to dieting, may lead dieters to feel a loss of control after any lapse in their diet. Such feelings, combined with “all-or-nothing” dietary rules, increase the likelihood that the person will temporarily abandon all dietary rules and engage in disinhibited overeating or binge episodes after a perceived transgression in their diet (Wilson, 2002). Although a causal relationship between dieting and overeating has not been well established (Stice, 2002), studies have consistently found that dietary restraint potentiates binge eating and contributes to the development of eating disorders (e.g., Lowe et al., 1996; Wilson, 2002). In a recent meta-analysis of risk and maintenance factors for eating pathology, Stice (2002) reported that prospective studies indicate that dieting is a risk factor for bulimic pathology. As Wilson (2002) notes, dieting may be a “necessary but not sufficient cause of eating disorders” (pp. 96).

This phenomenon was recently illustrated by a study by Engelberg, Gauvin, and Steiger (2005), who examined the relationship between dietary restraint and binge eating using ecological momentary assessment (EMA). Thirty-nine women with bulimia-spectrum disorders monitored dietary restraint, binge cravings, and binge episodes using electronic self-monitoring diaries for up to 29 days. The authors found that restraint was elevated before binge cravings, but not the binge episodes; such findings support Restraint Theory, in that dietary restraint potentiates, but does not directly cause, binge eating.
Rather, other factors, such as emotional distress, may trigger binge episodes. Thus, in PD it is possible that restraint is associated with binge cravings, but not necessarily objectively large binge episodes unless other factors are present.

Additionally, two models have been proposed to explain the relationship between dieting and the development of BN, which provides insight into the possible relationship between dietary restraint, purging behavior, and BN. The continuity model of BN posits that bulimia represents the most extreme manifestations of normative dieting among women that pervades American society (Lowe et al., 1996). Alternatively, the discontinuity model suggests that dieting only leads to bulimia in the presence of additional predisposing factors, such as depression and impulse control problems (Lowe et al., 1996). In comparison of these two models, Lowe et al. (1996) found partial support for both conceptualizations; that is, restrained eaters reported higher levels of psychopathology and weight concerns but not binge eating (as compared to unrestrained eaters). However, bulimic individuals in the study reported the highest levels of psychopathology, weight concerns, and binge eating. The authors concluded that dieting alone cannot explain the discontinuity in binge eating between the bulimic and non-bulimic groups. Rather, the authors suggest that the bulimic group may have exceeded the threshold of reasonable weight control methods by engaging in purging behavior (e.g., laxative abuse, self-induced vomiting) in addition to extreme dieting in order to maximize caloric restriction. Purging behavior, in turn, may have fueled future binge episodes by increasing energy deficits and reducing the individuals’ perceived caloric “penalty” for binge eating (Lowe et al., 1996). In sum, while the continuity model was partially supported by the increased levels of
psychopathology and weight concerns among both the restrained eater and bulimic groups, the differing levels of binge eating between these two groups supports the discontinuity model, in that other factors (e.g., extreme weight control behavior) seem to trigger the onset and maintenance of binge eating (Lowe et al., 1996). Additionally, this study suggests purging behavior may play a role in the progression from restrained eating behavior to BN symptomatology, as well as in the maintenance of binge-purge cycles.

The Role of Subjective Binge Episodes in PD

Moreover, restraint theory may further the understanding of the role of binge episodes in PD. Though mounting evidence suggests that PD may indeed be a clinically significant and unique pattern of behavior, it is unclear what cognitions and/or behaviors precipitate the purging behavior. In BN (purging subtype), there is a general consensus among the literature that Objective Binge Episodes (OBEs) usually precede purging behavior; thus, purging behaviors are generally studied in conjunction with binge episodes. Various theories have hypothesized that purging may serve to reduce anxiety, tension, and guilt after binge episodes, provide temporary escape from negative feelings after a binge, compensate for the caloric intake of a binge, and/or restore one’s sense of control (Stein, Kenardy, Wiseman, Zoler Douchis, Arnow, & Wilfley, 2007). However, individuals with PD do not report OBEs, which potentially challenges the existing theories that conceptualize purging behavior as a reaction to OBEs.

Restraint Theory may provide an understanding of the purging antecedents in PD. Kerzhnerman and Lowe (2002) examined dieting intensity and the frequency of objective and subjective binge episodes among 40 women diagnosed with BN, AN (binge-purge
type), and EDNOS. The study found that higher levels of dieting intensity (as defined by scores on a dieting factor comprised of the Eating Attitudes Test Diet and Oral Control subscales and the Eating Disorders Inventory Drive for Thinness subscale) were related to more frequent subjective, yet not objective, binge episodes; the authors suggest that this finding may indicate the relationship between dieting and binge eating results from cognitive aspects of dietary restriction and “overeating” rather than the quantity of caloric restriction and consumption. Thus, it is possible that individuals with PD experience subjective binge episodes (SBEs) before they engage in purging behavior. However, Binford and leGrange (2005) found that only half of PD participants reported SBEs, which suggests that a substantial number of individuals with PD may not experience any subjective sense of loss of control over eating.

Nevertheless, the distinction between SBEs and OBEs may not be clinically significant. Mond et al. (2006) found that individuals who reported SBEs (in absence of any OBEs) had similar levels of functional impairment (as defined by scores on the Mental Component Summary scale, designed to measure health-related quality of living and impairment associated with mental health problems) as individuals who reported OBEs. Such evidence suggests that the psychological experience of loss of control, regardless of objective caloric intake, is what causes distress for individuals with eating pathology. Because studies have yielded inconclusive findings regarding the presence of SBEs in PD (e.g., Binford & leGrange, 2005), further research must investigate the frequency and phenomenology of such episodes in PD.
In sum, restraint theory offers a theoretical framework from which to conceptualize the development of purging disorder. Given both the similarities and differences between PD and other eating disorders characterized by binge-purge behavior, it is reasonable to suggest that PD falls along a spectrum of eating pathology. It is well-established that restrained eating precedes objective binge episodes and subsequent purging behavior. Individuals with PD engage in clinically significant purging behavior, but it is unclear to what degree they experience dietary restraint, or if subjective, rather than objective binge episodes may precede their purging behavior. If this is the case, PD may represent a phase in the progression from highly restrained eating behavior to full-syndrome BN. That is, individuals with PD may exhibit restrained eating, experience subjective binge episodes, and subsequently engage in compensatory behavior.

The Present Study

Taken together, it appears that current DSM-IV-TR diagnostic categories may lack clinical utility, and the validity of PD as a distinct category remains unclear. In theory, the clinical significance of PD would be evidenced by differences between individuals and healthy controls on various measures of eating pathology and psychosocial variables, while the distinctiveness of PD would be evidenced by the relative differences between individuals with PD and other eating disorders. Given the inconclusive and limited results of previous studies, it appears that two possibilities exist regarding the significance and categorization of PD. First, PD may be a clinically significant, distinctive diagnostic category. Second, PD may not be a distinct disorder, but rather a subtype or precursor of a full-syndrome disorder (e.g., BN). Thus, the present study sought to compare the core
eating disorder symptomatology, body image disturbance, and psychological correlates of individuals with PD to those of healthy controls, restrained eaters, and individuals with BN. This design allows for the evaluation of the conceptualization of PD within restraint theory by including participants with a range of bulimic spectrum eating pathology. The following research questions were investigated in order to assess the differences and similarities between PD, healthy controls, restrained eaters, and individuals with BN; the pattern of results may lend support to either of the proposed conceptualizations of PD.

**Question 1: Eating pathology in PD.** Do individuals with PD differ from individuals with BN, restrained eater, and control groups on core eating disorder symptoms (e.g., eating concerns, dietary restraint, disinhibition)?

**Question 2: Body image disturbance in PD.** Do individuals with PD differ from BN, restrained eater, and control groups on the level of body image disturbance (e.g., shape and weight concerns, internalization of sociocultural ideals regarding appearances)?

**Question 3: Psychological correlates of PD.** Do individuals with PD differ from BN, restrained eater, and control groups on psychological correlates (e.g., impulsivity, perfectionism, obsessive-compulsiveness, self-esteem, and emotion regulation)?

**Question 4: Subjective binge episodes in PD.** Will the PD group report clinically significant subjective binge episodes? If so, does the frequency of such episodes significantly differ from that reported by the control, restrained, and BN groups?

To date, PD has not been investigated in the context of restraint theory, nor have studies of PD differentiated between the eating pathology, subjective binge episodes, body image disturbance and psychological correlates associated with PD. Evaluating the
aforementioned questions will provide important, new evidence to inform the conceptualization, categorization, and treatment of PD.
CHAPTER 2

METHODS

Participants

The present sample consisted of 91 undergraduate female students at a large Midwestern university who were recruited following their participation in a large mass testing session associated with their undergraduate psychology course. During this session, participants completed the Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000), a brief diagnostic measure of eating pathology. The EDDS was used as a screener measure to identify potential participants who met criteria for Bulimia Nervosa (BN, both purging and non-purging), Binge Eating Disorder (BED), Eating Disorder Not Otherwise Specified (EDNOS), or Purging Disorder (PD). Participants who met diagnostic criteria for an eating disorder (identified by Stice et al., 2000) or criteria for PD (determined by the researcher using the EDDS items) were contacted by phone or e-mail and invited to participate in the present study. Additionally, a random sample of individuals who did not report any symptoms of eating pathology on the EDDS was recruited from the same mass testing sample to serve as a healthy control group. Participants received research credits for participation.

Participants were classified into four diagnostic groups (i.e., BN, PD, Restrained Eater, Control) based on the diagnosis generated by the EDDS algorithm (Stice, Fisher, &
Martinez, 2004) and the Revised Restraint Scale (RRS; Herman & Polivy, 1985). Participants were assigned to the BN group if their responses on the EDDS (completed during mass testing) met criteria for a diagnosis of BN according to Stice et al.’s (2004) algorithm, which identifies individuals who report at least two objectively large binge episodes per week and at least two instances of compensatory behavior per week over the past three months, and place an undue influence of weight and/or shape on self-evaluation. There were two participants recruited from mass testing who did not meet criteria for BN based on their mass testing EDDS responses, yet they later met criteria for BN for on the EDDS when they completed the measure in-session; in these cases the more severe, in-session EDDS diagnoses (i.e., BN) were used to determine their group membership.

Based on previous findings regarding the definition of PD (e.g., Keel & Striegel-Moore (2009), participants were assigned to the PD group if they (1) did not meet criteria for BN according to Stice et al.’s algorithm, (2) reported at least one episode of self-induced vomiting and/or laxative abuse over the last seven days, and (3) reported significant weight and shape concerns (as defined by Stice et al.’s algorithm). Participants were assigned to the Restrained Eater group if they (1) did not meet the aforementioned criteria for inclusion in the BN or PD groups, nor any other eating pathology groups defined by Stice et al.’s algorithm, (2) had scores of at least 14 on the RRS (a score of 14 or above has typically been used to discriminate between restrained and unrestrained eaters), and (3) had a BMI less than 24.9, so as to exclude overweight participants who may be engaging in dietary restraint for health purposes. Lastly, participants were assigned to the
Control group if they (1) were classified as asymptomatic according to Stice et al.’s algorithm, and (2) scored below a 14 on the RRS, and (3) did not meet criteria for the BN, PD, or Restrained Eater groups.

Based on the EDDS completed during mass testing sessions, 41 PD and 48 BN participants were identified and invited to participate in the study. Additional participants were recruited randomly from the mass testing pool to serve as the restrained eaters and control groups. The resulting sample consisted of 35 BN participants, 17 PD participants, 18 restrained eaters, and 21 healthy controls. Participants’ age ranged from 15 to 44 (\(M=19.79, SD=4.29\)), and the mean Body Mass Index (BMI) of the sample was 23.65 (\(SD=4.90\)). The majority (96.7%) of participants were in their first, second, third, or fourth year of their undergraduate degree. The sample consisted of participants who identified as Caucasian (90.1%), African American (5.5%), Asian/Asian American (2.2%), and Hispanic/Latina (2.2%).

Procedure

Researchers scheduled individual appointments with the selected participants to administer the study. After obtaining participants’ informed consent (see Appendix A), participants completed a packet of self-report questionnaires (see Appendix B), which included the questionnaires described below. The Institutional Review Board at the university approved this research project, and referral information to local counseling services was provided to all participants.
Measures

**Eating Disorder Diagnostic Scale** (EDDS; Stice, Telch, & Rizvi, 2000). This 22-item self-report measure was used as a screener to identify participants who reported symptoms of eating pathology during mass testing sessions. The EDDS also was administered at the time participants completed the study. The EDDS is both a diagnostic measure of eating disorders and a continuous measure of eating pathology. The symptom composite score can be used as an overall assessment of eating pathology, with higher scores indicating more severe pathology. Stice et al. (2000) also specified scoring algorithms to identify individuals who meet criteria for AN, BN, and BED diagnoses. The EDDS has demonstrated good reliability and validity. The convergent validity of the EDDS was evidenced by significant correlations between the EDDS symptom composite score and scores on other validated measures of eating disturbances (e.g., Eating Disorder Examination subscales, Three-Factor Eating Questionnaire), and criterion validity was demonstrated by the agreement between the eating disorder diagnoses from the EDDS and those from structured interviews (99% for AN, 96% for BN, and 93% for BED) (Stice et al., 2000). In regards to temporal stability, Stice et al. (2000) reported one week test-retest kappa coefficients ranging from .71 to .98 for specific diagnoses, and a one-week test-retest correlation coefficient of .87 for the symptom composite score. Stice et al. (2000) also demonstrated that the internal consistency of the EDDS symptom composite score is adequate (mean $\alpha = .89$). In the present sample the Cronbach’s alpha for the symptom composite score was .87.
Revised Restraint Scale (RRS; Herman & Polivy, 1975). The RRS contains ten multiple-choice items that assess how much an individual’s weight fluctuates, dieting behaviors, and thoughts about eating. Responses are assigned a numeric value, and items are summed to produce a composite score, with higher scores indicating higher levels of dietary restraint. Previous studies have reported adequate internal consistency of the RRS; for instance, Allison, Kalinsky, and Gorman (1992) reported a 2-week test-retest correlation coefficient of .95 for the RRS composite score. The internal consistency of the composite RRS score in the present study was .83.

Demographics Questionnaire. This measure assessed various demographic characteristics of participants. Such items assessed age, year in school, weight, height, occupation, personal and household income, ethnicity, and history of diagnosis or treatment for an eating disorder.

Eating Disorder Examination Questionnaire (EDEQ-4; Fairburn, 1994). The EDE-4 is a 32-item self-report measure based on the Eating Disorder Examination interview (EDE; Fairburn, 1994), which assesses various dimensions of eating pathology. The EDEQ-4 consists of four subscales: Weight Concern, Shape Concern, Eating Concern, and Restraint, as well as items that assess the frequency of binge/purge episodes in the preceding 28 days. Each subscale item is scored using a 7-point Likert-type scale; items are summed to create each subscale score, with higher values indicated higher levels of the symptom. LeGrange et al. (2006) reported internal consistency coefficients for EDEQ-4 subscales that ranged from .70 to .83. Additionally, the EDEQ-4 distinguishes the frequency of objective binge episodes over the past 28 days (item 15) from the relative
frequency of subjective binge episodes (item 20: “On what proportion of the times that you have eaten have you felt guilty (felt that you’ve done wrong) because of its effect on your shape or weight?”). The present study used items 15 and 20 to assess objective and subjective binge episode frequency, as well as the Weight, Shape, and Eating Concern subscales; in the present study, these scales had internal consistencies of .88, .94, and .87, respectively.

**Three-Factor Eating Questionnaire** (TFEQ; Stunkard & Mesnick, 1985). The TFEQ is a 54-item self-report measure that assesses three aspects of eating pathology: cognitive (dietary) restraint, perceived hunger, and disinhibition. Some items are rated as “true” or “false,” whereas others are scored using a Likert-type scale. The numeric values associated with responses are summed to create each subscale score, with higher scores indicating greater levels of restraint, perceived hunger, or disinhibition. Stunkard and Mesnick reported coefficient alpha reliabilities for the TFEQ subscales that ranged from .85 to .92 in the normative sample; subsequent reported internal consistency coefficients for the TFEQ have ranged from .85 to .93 in clinical and non-clinical samples, and the three subscales have been effective in discriminating dieters and non-dieters (Stice, Telch, & Rizvi, 2000). The internal consistencies of the TFEQ subscales for this sample were .85 (restraint), .80 (disinhibition), and .80 (hunger).

**Body Shape Questionnaire** (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987). The BSQ is a 34-item self-report instrument designed to measure concerns about body shape, which has been identified as an important feature of eating disorders. Items are rated on a 6-point Likert-type scale ranging from “never” (1) to “always” (6), with higher
scores indicating greater concern about one’s body image. Cooper et al. demonstrated good concurrent and discriminate validity of the BSQ among three samples of both clinical and nonclinical women. The internal consistency of the BSQ for this sample was .97.

**Sociocultural Attitudes Towards Appearance Scale-3** (SATAQ-3; Thompson, van den Berg, Roehrig, Gurada, & Heinberg, 2004). The SATAQ-3 is a revision of previous versions of the Sociocultural Attitudes Towards Appearance Scale (SATAQ), which assesses societal influences on body image and eating disturbances. The self-report measure consists of 30 items that are scored using a 5-point Likert-type scale ranging from “strongly disagree” (1) to “strongly agree” (5). The SATAQ-3 is comprised of four subscales: Internalization-General, Information, Pressures, and Internalization-Athlete. Cronbach’s alpha values ranged from .92 to .96 among the subscales (Thompson et al., 2004). The present study used the Internalization-General subscale, which had an internal consistency of .97 for this sample.

**Frost Multidimensional Perfectionism Scale** (MPS; Frost, Marten, Lahart, & Rosenblate, 1990). The MPS consists of 35 items, each of which are scored using a 5-point Likert-type scale ranging from “strongly disagree” (1) to “strongly agree” (5). The MPS assesses six dimensions of perfectionism: Concern over Mistakes, Personal Standards, Parental Expectations, Parental Criticism, Doubts about Action, and Organization. Items are summed to produce both a composite and subscale scores, with higher scores indicating greater levels of perfectionism. LeGrange et al. (2006) reported an alpha coefficient of .93 for the total MPS score. The present study used the Concern over mistakes, Personal
Standards, and Doubts about Action subscales, which had internal consistencies of .89, .83, and .77, respectively.

**Vancouver Obsessional Compulsive Inventory** (VOCI; Thordarson, Radomsky, Rachman, Shafran, Sawchuk, & Hakstian, 2004). The VOCI is based on the Maudsley Obsessional Compulsive Inventory (MOCI-R, Rachman, Thordarson, & Radomsky, 1995), which is a widely-used measure of obsessive-compulsive problems. The VOCI was developed to update the measure and assess a wider range of obsessions, compulsions, and other behaviors relevant to Obsessive-Compulsive Disorder (OCD). Six subscales comprise the VOCI: Contamination, Checking, Obsessions, Hoarding, Just Right, and Indecisiveness. Each of the 55 items on the VOCI is rated on a five-point Likert-type scale, with responses ranging from “not at all” (0) to “very much” (4). The scores are summed for each subscale, as well as the full scale; higher scores indicate greater levels of obsessive compulsive symptomatology. Thordarson et al. reported excellent internal consistency for the VOCI and its subscales (.79 to .98). Test-retest reliability coefficients (Pearson’s r) were above .90 for each subscale in an OCD sample, while test-retest reliability was only .50 to .60 among a student sample. Additionally, Thordarson et al. demonstrated good convergent and discriminate validity for the VOCI by assessing correlations between VOCI scores and other corresponding and non-corresponding measures of OCD. The present study used the full scale, which had an alpha coefficient of .96.

**Barratt Impulsivity Scale** (BIS-11; Patton, Stanford, & Barratt, 1995). The BIS is a 30-item self-report questionnaire that assesses impulsive behaviors. Items are measured on a 4-point Likert-type scale (*Rarely/Never, Occasionally, Often, Almost Always/Always*),
with higher scores indicating greater levels of impulsiveness. In addition to the composite score, the BIS consists of three subscales: Attentional Impulsiveness, Motor Impulsiveness, and Non-planning Impulsiveness. Patton et al. have reported good concurrent and criterion validity of the BIS, as well as high internal consistency for the total scale score ($\alpha>.79$). The internal consistency of the composite BIS score for this sample was .82.

**Rosenberg Self-Esteem Scale** (RSES; Rosenberg, 1965). The RSES is a self-report assessment of global self-worth. The RSES consists of 10 items that are scored on a 4-point Likert-type scale ranging from “strongly agree” (1) to “strongly disagree” (4), with higher scores indicating greater levels of self-esteem. Although originally intended for use among adolescents, the RSES has demonstrated good psychometric properties in a variety of populations. The Cronbach’s alpha value was .77 in the original standardization sample, and the reliability of the RSES has been consistently demonstrated through subsequent studies (e.g., Peck & Lightsey, 2008). The internal consistency of the RSES in this sample was .89.

**Berkley Expressivity Questionnaire** (BEQ; Gross & John, 1995). The BEQ is a 16-item self-report questionnaire that assesses the strength of emotional response tendencies and the degree of emotional expression. In addition to a composite score, the BEQ contains three subscales: Impulse Strength, Negative Expressivity, and Positive Expressivity. Items are rated on a Likert-type scale ranging from “strongly disagree” (1) to “strongly agree” (7); higher scores indicate greater levels of emotional expression and/or impulsivity. Gross and John (1995) demonstrated the concurrent validity of the BEQ by examining its strong relationship with the Neuroticism and Extraversion dimensions of the
“Big Five” personality traits. Additionally, Gross and John reported satisfactory internal consistency of the BEQ subscales, with Cronbach’s alpha values ranging from .71 to .76, and an overall alpha of .85. Test-retest reliability coefficients ranged from .71 to .86. In a later study, Dobbs, Sloan, and Karpinski (2007) reported Cronbach’s values of BEQ subscales ranging from .63 to .78, and an overall expressivity coefficient of .82. The present study used the Impulse Strength subscale, which had an internal consistency of .81.

**Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004)**. The DERS is a 36-item self-report measure designed to assess various aspects of emotion dysregulation. The DERS consists of six subscales: Nonacceptance of Emotional Responses, Difficulties Engaging in Goal-Directed Behavior, Impulse Control Difficulties, Lack of Emotional Awareness, Limited Access to Emotion Regulation Strategies, and Lack of Emotional Clarity. The DERS items are rated on a 5-point Likert-type scale ranging from “never” (1) to “almost always” (5), with higher scores indicating greater emotional dysregulation. Gratz and Roemer (2004) reported high internal consistency of the DERS composite score (α = .93), and all subscales had alpha values above .80. The internal consistency of the DERS composite score in this sample was .95.

The above measures were used to assess conceptually related variables, which were divided into three categories: core eating pathology symptomatology (as measured by the EDDS symptom composite, EDEQ Eating Concern subscale, and TFEQ Cognitive Restraint, Disinhibition, and Perceived Hunger subscales), body image disturbance (as measured by the EDEQ Shape and Weight Concern subscales, BSQ, and SATAQ General Internalization subscale) and psychological correlates (as measured by the RSE, DERS,
BEQ Impulse Strength Subscale, VOCI, MPQ Concern over Mistakes, Personal Standards, and Doubts about Actions subscales).
CHAPTER 3

RESULTS

Sample Characteristics

Table 1 displays descriptive statistics for the sample. A one-way analysis of variance (ANOVA) indicated participants’ BMI differed significantly by group \((F(3, 87)=3.39, p<.05)\); however, the post-hoc analysis (Student-Neuman-Keuls method) revealed no significant between-group differences. An additional one-way ANOVA indicated that participants’ age did not differ significantly by group \((F(3, 87)=.56, p>.05)\). Because of the very low frequency of African American, Asian/American, and Hispanic/Latina participants, ethnicity was re-coded such that there were two groups: Caucasian and non-Caucasian. A Chi-square analysis comparing the diagnostic groups by ethnicities was non-significant.

Binge Eating and Compensatory Behavior

In regards to binge episode frequency, an independent t-test compared the frequency of Objective Binge Episodes (OBEs) between the BN and Restrained Eater group (as neither the PD nor control group reported OBEs on the EDDS). Results indicated that the BN group reported significantly more OBEs \((M=6.60, SD=7.22)\) than the
Table 1

*Age and Body Mass Index (BMI) of Participants*

<table>
<thead>
<tr>
<th></th>
<th>Bulimia Nervosa(^1) n=35</th>
<th>Purging Disorder(^2) n=17</th>
<th>Restrained Eater(^3) n=18</th>
<th>Control(^4) n=21</th>
<th>Between subjects effects</th>
<th>Student-Neuman-Keuls post-hoc results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20.53 (4.78)</td>
<td>19.50 (3.65)</td>
<td>19.33 (5.19)</td>
<td>19.19 (2.98)</td>
<td>F .55</td>
<td>p .65 (\eta_p^2 .02) n.s.</td>
</tr>
<tr>
<td>Exercise</td>
<td>7.10 (7.87)</td>
<td>7.35 (9.54)</td>
<td>4.56 (4.25)</td>
<td>.46 (1.47)</td>
<td>F 5.07</td>
<td>p &lt;.05 (\eta_p^2 .15) 1,2&gt;4</td>
</tr>
<tr>
<td>Fasting</td>
<td>2.49 (2.44)</td>
<td>2.81 (2.63)</td>
<td>2.52 (4.05)</td>
<td>0.00 (0.00)</td>
<td>F 5.29</td>
<td>p &lt;.05 (\eta_p^2 .15) 12,3,&gt;4</td>
</tr>
<tr>
<td>SBEs</td>
<td>3.34 (1.48)</td>
<td>1.76 (1.71)</td>
<td>1.67 (1.68)</td>
<td>.14 (.46)</td>
<td>23.17</td>
<td>&lt;.001 (\eta_p^2 .44) 1&gt;2,3&gt;4</td>
</tr>
<tr>
<td>OBEs</td>
<td>6.60 (7.22)</td>
<td>---</td>
<td>1.94 ---</td>
<td>---</td>
<td>2.55 (51)</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Purging frequency</td>
<td>1.92 (4.19)</td>
<td>.88 (1.58)</td>
<td>---</td>
<td>---</td>
<td>.20 (48)</td>
<td>.20</td>
</tr>
</tbody>
</table>
Restrained Eater group (M=1.94, SD=3.81) over the last 28 days, t(51)=2.55, p<.05. A one-way ANOVA compared the four groups on the frequency of subjective binge episodes (SBEs), which was significant (F(3, 87)=23.17, p<.001). Post-hoc Student-Neuman-Keuls tests indicated that the BN group reported significantly more SBEs than all other groups; however, the PD and Restrained Eater groups also reported significantly more SBEs than the control group.

Because both the BN and PD groups engage in purging behaviors, the frequencies of self-induced vomiting and laxative use were assessed by summing participants’ responses to items 16 and 17 on the EDE-Q to create the dependent variable of frequency of purging behavior. See Table 1 for mean and standard deviation values for the frequencies of purging, fasting, and excessive exercise among the four groups. An independent t-test compared the BN and PD groups on the frequency of purging behavior over the last 28 days. There were no significant differences between these groups on the frequency of purging behavior, t(48)=1.29, p=.20. A one-way ANOVA comparing the four groups on the frequency of excessive exercise as a compensatory strategy (as assessed by item 18 on the EDE-Q) was significant, F(3, 87)=5.07, p<.001. Post-hoc Student-Neuman-Keuls tests indicated that both the BN and PD groups reported significantly greater use of excessive exercise than the Control group; no other group differences were significant. Additionally, a one-way analysis of variance (ANOVA) comparing the four groups on the frequency of fasting as a compensatory strategy (as assessed by item 17 on the EDDS) was significant, F(3, 87)=5.29, p<.01. Post-hoc tests
indicated that the BN, PD, and Restrained Eater groups reported significantly greater use of fasting than the Control group; no other group differences were significant.

Eating Pathology, Body Image Disturbance, and Psychosocial Variables

Three separate multivariate analyses of variance (MANOVA) compared the four groups on conceptually related dimensions (i.e., eating psychopathology, body image disturbance, and related psychosocial variables). The first MANOVA compared the groups on four measures of body image disturbance: shape concerns (EDEQ-SC), weight concerns (EDEQ-WC), body dissatisfaction (BSQ), and general internalization of sociocultural ideals about appearance (SATAQ-GI). Table 2 displays the group means, standard deviations, between-subjects effects, and results of post-hoc univariate and Student Newman Keuls analyses for the MANOVA comparing these body image variables. There was a significant multivariate effect, $F(3, 87)=10.16, p<.001$. Univariate tests yielded significant group differences on each of the body image measures (EDEQ-SC: $F(3,87)=47.56, p<.001$; EDEQ-WC: $F(3,87)=43.55, p<.001$; BSQ: $F(3,87)=43.22, p<.001$; SATAQ-GI: $F(3,87)=21.78, p<.001$). Post-hoc Student-Neuman-Keuls tests indicated that the BN group reported significantly greater levels of shape concerns, weight concerns, and body dissatisfaction than all other groups, and that both the PD and Restrained Eaters groups reported significantly greater levels of these variables compared to the Control group. For general internalization, the BN, PD, and Restrained Eaters group all reported significantly greater levels of internalization than the Control group.

The second MANOVA compared the groups on eight psychosocial variables: impulse strength (BEQ-IS), general impulsivity (BIS), obsessive compulsive symptoms
Table 2

**Body Image Variables: Group Means, Standard Deviations, Between-Subjects Effects, and Post-Hoc Analyses**

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Bulimia Nervosa(^1) n=35 M (SD)</th>
<th>Purging Disorder(^2) n=17 M (SD)</th>
<th>Restrained Eater(^3) n=18 M (SD)</th>
<th>Control(^4) n=21 M (SD)</th>
<th>Between subjects effects</th>
<th>Student-Neuman-Keuls post-hoc results</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEQ-SC</td>
<td>4.49 (1.09)</td>
<td>3.01 (1.51)</td>
<td>3.26 (1.35)</td>
<td>.72 (.55)</td>
<td>47.56 &lt;.001 .62</td>
<td>1&gt;2,3&gt;4</td>
</tr>
<tr>
<td>EDEQ-WC</td>
<td>4.17 (1.08)</td>
<td>2.74 (1.53)</td>
<td>2.73 (1.21)</td>
<td>.62 (.66)</td>
<td>43.35 &lt;.001 .60</td>
<td>1&gt;2,3&gt;4</td>
</tr>
<tr>
<td>BSQ</td>
<td>137.60 (28.57)</td>
<td>101.29 (37.72)</td>
<td>101.45 (26.44)</td>
<td>51.68 (11.92)</td>
<td>43.22 &lt;.001 .60</td>
<td>1&gt;2,3&gt;4</td>
</tr>
<tr>
<td>SATAQ-GI</td>
<td>36.49 (6.63)</td>
<td>32.59 (10.39)</td>
<td>32.44 (7.92)</td>
<td>18.48 (8.94)</td>
<td>21.79 &lt;.001 .43</td>
<td>1,2,3&gt;4</td>
</tr>
</tbody>
</table>

*Note.* EDEQ-SC=Eating Disorder Examination Questionnaire-Shape Concerns subscale; EDEQ-WC=Eating Disorder Examination Questionnaire-Weight Concerns subscale; BSQ=Body Satisfaction Questionnaire; SATAQ-GI=Sociocultural Attitudes Towards Appearance Questionnaire-General Internalization subscale.
(VOCI), three aspects of perfection (MPQ Concern over Mistakes, Personal Standards, and Doubts about Actions subscales), self-esteem (RSE), and emotion regulation (DERS).

Table 3 displays the group means, standard deviations, between-subjects effects, and post-hoc results for the MANOVA comparing these variables. There was a significant multivariate effect, $F(3, 87)=2.13, p<.01$. Univariate tests of group differences were non-significant for general impulsivity, impulse strength, and personal standards. However, there were significant group differences on all other psychosocial variables (VOCI: $F(3, 87)=4.50, p<.01$; MPQ-CM: $F(3, 87)=6.67, p<.001$; MPQ-DA: $F(3, 87)=5.18, p<.01$; RSE: $F(3, 87)=11.38, p<.001$; DERS: $F(3, 87)=7.76, p<.001$). Post-hoc tests indicated that both the BN and PD groups reported significantly higher levels concern over mistakes than the Control group. The BN group reported significantly higher levels of obsessive compulsive symptoms and doubts about actions compared to the Control group. The BN group also reported significantly more emotion regulation difficulties and lower self-esteem than all other groups.

The third MANOVA compared the groups on five measures of eating pathology: eating concerns (EDEQ-EC), overall symptom severity (EDDS-sym), dietary restraint (TFEQ-R), disinhibition (TFEQ-D), and perceived hunger (TFEQ-H). Table 4 displays the group means, standard deviations, between-subjects effects, and post-hoc results for the MANOVA comparing these variables. There was a significant multivariate effect, $F(3, 87)=11.78, p<.001$. Univariate tests yielded significant group differences on each of the eating pathology measures (EDEQ-EC: $F(3, 87)=25.02, p<.001$; EDDS-sym: $F(3, 87)=55.31, p<.001$; TFEQ-R: $F(3, 87)=7.44, p<.001$; TFEQ-D: $F(3, 87)=32.70, p<.001$;
Table 3

Psychosocial Variables: Group Means, Standard Deviations, Between-Subjects Effects, and Post-Hoc Analyses

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Bulimia Nervosa (^1) n=35 M (SD)</th>
<th>Purging Disorder (^2) n=17 M (SD)</th>
<th>Restrained Eater (^3) n=18 M (SD)</th>
<th>Control (^4) n=21 M (SD)</th>
<th>Between subjects effects</th>
<th>Student-Neuman-Keuls post-hoc results</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEQ-IS</td>
<td>2.39 (0.82)</td>
<td>2.19 (1.18)</td>
<td>2.60 (1.46)</td>
<td>2.36 (1.09)</td>
<td>2.59 (.06)</td>
<td>.08 n.s.</td>
</tr>
<tr>
<td>BIS</td>
<td>65.96 (10.50)</td>
<td>65.30 (10.61)</td>
<td>66.27 (10.41)</td>
<td>61.25 (12.24)</td>
<td>.99 (.40)</td>
<td>.03 n.s.</td>
</tr>
<tr>
<td>VOCI</td>
<td>56.00 (39.84)</td>
<td>39.47 (25.32)</td>
<td>35.77 (19.91)</td>
<td>26.33 (24.09)</td>
<td>4.50 (.01)</td>
<td>.13 1 &gt;4</td>
</tr>
<tr>
<td>MPQ-CM</td>
<td>28.11 (7.87)</td>
<td>26.94 (6.83)</td>
<td>23.11 (5.96)</td>
<td>19.67 (7.68)</td>
<td>6.66 &lt;.001</td>
<td>.19 1,2 &gt;4</td>
</tr>
<tr>
<td>MPQ-PS</td>
<td>25.14 (6.14)</td>
<td>25.35 (4.21)</td>
<td>25.00 (5.20)</td>
<td>22.83 (5.16)</td>
<td>1.01 (.39)</td>
<td>.03 n.s.</td>
</tr>
<tr>
<td>MPQ-DA</td>
<td>12.66 (3.34)</td>
<td>10.88 (3.28)</td>
<td>10.83 (2.83)</td>
<td>9.03 (3.89)</td>
<td>5.18 &lt;.01</td>
<td>.15 1 &gt;4</td>
</tr>
<tr>
<td>RSE</td>
<td>27.03 (4.97)</td>
<td>31.65 (4.46)</td>
<td>31.50 (4.96)</td>
<td>34.82 (5.48)</td>
<td>11.38 &lt;.001</td>
<td>.28 1 &lt;2,3,4</td>
</tr>
<tr>
<td>DERS</td>
<td>100.73 (25.92)</td>
<td>80.47 (18.19)</td>
<td>84.24 (27.11)</td>
<td>70.90 (19.51)</td>
<td>7.76 &lt;.001</td>
<td>.21 1 &gt;2,3,4</td>
</tr>
</tbody>
</table>

Note. BEQ-IS=Berkeley Expressivity Questionnaire-Impulse Strength subscale; BIS=Barratt Impulsivity Scale; VOCI=Vancouver Obsessive Compulsive Inventory; MPQ-CM=Multidimensional Perfectionism Questionnaire-Concern over Mistakes subscale; MPQ-PS=Multidimensional Perfectionism Questionnaire-Personal Standards subscale; MPQ-DA=Multidimensional Perfectionism Questionnaire-Doubts about Actions subscale; RSE=Rosenberg Self Esteem scale; DERS=Difficulties in Emotion Regulation scale.
Table 4

*Eating Pathology Variables: Group Means, Standard Deviations, Between-Subjects Effects, and Post-Hoc Analyses*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Bulimia Nervosa(^1) n=35 M (SD)</th>
<th>Purging Disorder(^2) n=17 M (SD)</th>
<th>Restrained Eater(^3) n=18 M (SD)</th>
<th>Control(^4) n=21 M (SD)</th>
<th>Between subjects effects</th>
<th>F</th>
<th>p</th>
<th>(\eta^2)</th>
<th>Student-Neuman-Keuls post-hoc results</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEQ-EC</td>
<td>2.51 (1.37)</td>
<td>1.39 (1.24)</td>
<td>.92 (.76)</td>
<td>.06 (.15)</td>
<td>25.02 &lt;.001 .46</td>
<td>1&gt;2,3&gt;4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDDS-sym</td>
<td>39.33 (9.46)</td>
<td>25.60 (10.57)</td>
<td>23.02 (11.92)</td>
<td>6.24 (9.46)</td>
<td>55.31 &lt;.001 .66</td>
<td>1&gt;2,3&gt;4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFEQ-R</td>
<td>12.69 (4.79)</td>
<td>13.08 (4.69)</td>
<td>11.70 (5.48)</td>
<td>7.25 (3.04)</td>
<td>7.44 &lt;.001 .20</td>
<td>1,2,3&gt;4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFEQ-D</td>
<td>11.29 (2.68)</td>
<td>6.23 (3.24)</td>
<td>6.99 (2.76)</td>
<td>4.39 (2.24)</td>
<td>32.70 &lt;.001 .53</td>
<td>1&gt;2,3&gt;4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFEQ-H</td>
<td>9.15 (3.10)</td>
<td>5.05 (3.42)</td>
<td>7.50 (3.05)</td>
<td>5.22 (2.40)</td>
<td>10.91 &lt;.001 .27</td>
<td>1,3&gt;2,4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* EDEQ-EC=Eating Disorder Examination Questionnaire-Eating Concerns subscale; EDDS-sym=Eating Disorder Diagnostic Scale symptom composite score; TFEQ-R=Three Factor Eating Questionnaire-Restrain subscale; TFEQ-D=Three Factor Eating Questionnaire-Inhibition subscale; TFEQ-H=Three Factor Eating Questionnaire-Perceived Hunger subscale.
TFEQ-H: $F(3,87)=10.91, p<.001$). Post-hoc Student-Neuman-Keuls tests indicated that the BN group reported significantly greater levels of eating concerns, disinhibition, and overall symptom severity than each of the other groups. Additionally, both the PD and Restrained Eaters group reported significantly higher levels of eating concerns, disinhibition, and symptom severity than the Control group. Both the BN and Restrained Eaters groups reported significantly higher levels of perceived hunger than the PD and Control groups. Also, the BN, PD, and Restrained Eaters groups reported significantly higher levels of dietary restraint than the Control group.
CHAPTER 4

DISCUSSION

The present study sought to investigate the core eating pathology symptoms, body image disturbance, psychological correlates, and frequency of subjective binge episodes associated with PD as compared to healthy controls, restrained eaters, and BN. All eating pathology groups reported significantly higher levels of general internalization of sociocultural ideals and dietary restraint compared to controls, yet there were no significant differences on these variables between the eating pathology groups. The BN reported significantly more obsessive compulsive symptoms and doubts about actions compared to controls, as well as significantly higher levels of emotion dysregulation, lower self-esteem, and higher frequency of OBEs compared to all other groups. The BN group also reported significantly higher levels of shape and weight concerns, body image disturbance, eating concerns, disinhibition, overall eating disorder symptom severity, and frequency of SBEs than both the PD and Restrained Eaters groups; however, the latter two groups did not differ significantly on levels of these variables (yet these groups differed significantly from the Control group). The BN and PD groups did not differ significantly on a measure of concern over mistakes, although both groups reported significantly higher levels than controls. In addition, the BN and PD groups did not differ significantly in the frequency of purging and excessive exercise as compensatory behaviors, and all three eating pathology
groups (BN, PD, and Restrained Eaters) reported significantly greater use of fasting than the Control group. The BN and Restrained Eaters groups did not differ significantly on levels of perceived hunger, yet both groups reported significantly higher levels than both the PD and Control groups. Contrary to predictions, there were no group differences on measures of impulsivity or personal standards.

These findings are consistent with empirically validated etiological theories of eating pathology and illuminate the possible role of Restraint Theory in the development of eating pathology, including PD. Consistent with Restraint Theory (Herman and Polivy, 1980; 1984; 1985), all three eating pathology groups reported significantly more dietary restraint than the Control group, which supports the theory that dietary restraint is an important factor underlying various forms of eating disorders (Polivy & Herman, 1985). The results also support the dual-pathway model of bulimic pathology (Stice, 1994, 2001), which integrates the influences of sociocultural pressures, dietary restraint, and affect regulation in the development of eating pathology. This model posits that sociocultural influences (e.g., family, friends, and media) result in women’s internalization of a thin ideal; this internalization promotes body dissatisfaction, which in turn results in dieting and negative affect, thereby increasing the risk for bulimic symptomatology (Stice, 1994, 2001). Thus far, the dual-pathway model has been well supported by empirical studies. In a prospective test of this model, Stice (2001) followed 231 of females (age 14 to 18) for 20 months; consistent with predictions, initial pressure to be thin and thin-ideal internalization predicted increased levels of dieting and negative affect, and dieting and negative affect served as mediating factors in the prediction of subsequent increases in bulimic
symptomatology. Other research (Griffiths et al., 2000; Thompson & Stice, 2001) also suggests that thin-ideal internalization is strongly associated with dietary restraint, and that thin-ideal internalization is a causal risk factor in the development of eating disturbances (Stice, 2002). Thus, the present finding that all eating disorder groups were not significantly different from each other on levels of thin-ideal internalization is consistent with the dual-pathway model’s assertion that the internalization of sociocultural pressures to be thin is a preceding factor in the development of dietary restraint and bulimic symptomatology.

In addition, the reported frequencies of SBEs, OBEs, and compensatory behaviors among the groups provide support for Restraint Theory. Not only did all three eating pathology groups report significantly higher levels of dietary restraint, they also reported significantly greater frequencies of fasting and SBEs than controls. This is consistent with Herman and Polivy’s (1980, 1984, 1985) assertion that the physiological and psychological aspects of restrained eating (i.e., fasting) increase the likelihood of subsequent binge eating. Moreover, the frequencies of SBEs and OBEs among the groups suggest that bulimic symptomatology may exist on a continuum, with dietary restraint representing a less severe syndrome and BN representing the most severe syndrome. This continuum was illustrated by the fact that the Restrained Eater group reported significantly more dietary restraint and SBEs than controls; the PD group reported significantly more dietary restraint, SBEs, and compensatory behaviors than controls; and the BN group reported significantly more dietary restraint, SBEs, compensatory behaviors, and OBEs than controls. These findings replicate those of Lowe et al. (1996), who found that restrained eaters reported higher
levels of psychopathology and weight concerns compared to unrestrained eaters, yet individuals with BN reported the highest levels of psychopathology, weight concerns, and binge eating.

In regards to the conceptualization of PD, results indicate that PD represents a clinically significant, albeit not necessarily distinct, syndrome. Individuals with PD consistently reported higher levels of eating pathology and body image disturbances when compared to controls, which is consistent with previous research (Keel, 2005, 2009, 2008). These findings support the validity and clinical utility of the inclusion of PD in the current and future editions of the DSM (APA, 2002).

However, it is not clear whether PD is a distinct syndrome from BN, although the present findings suggest that PD may be conceptualized on a continuum of bulimic symptomatology rather than as an EDNOS subtype. For instance, individuals with PD, as well as highly restrained eaters and those with BN, reported subjective losses of control over their eating behavior, even though the calories consumed did not qualify as an objective binge. Previous research has found that it is the subjective sense of loss of control over eating, not necessarily caloric quantity, which predisposes individuals to engage in compensatory behavior (e.g., Mond et al., 2006). Taken together, it appears that PD could represent a progression from dietary restraint to full-syndrome BN; that is, although both restrained eaters and individuals with PD exhibited dietary restraint and SBEs, those with PD also reported engaging in purging behavior (the frequency of which did not differ significantly from those with BN) following SBEs. However, thus far research has evidenced little crossover between PD and BD over six months (Keel et al.,
2005). Future prospective studies are needed to determine if and when PD progresses to full-syndrome BN. If PD progresses to BN, it is likely to take longer than six months; if not, PD may represent a distinct syndrome of bulimic spectrum symptomatology in which individuals never engage in OBEs. Nevertheless, it appears that PD is clinically significant, in that such individuals experience significant pathology compared to controls, and PD is both similar to and different from BN in the topography of symptoms.

It is also important to note that the BN and PD groups in the present study reported significantly higher levels of perfectionism than the Control group, which suggests that the compensatory behaviors exhibited by individuals with BN and PD may be influenced by high levels of perfectionism. Furthermore, the BN and PD groups reported significantly higher levels of perfectionism related to concern over mistakes but not personal standards; the former type of perfectionism has been demonstrated to be maladaptive, whereas the latter type is considered to be adaptive (Bardone-Cone, Weisuhn, & Boyd, 2009; Chang, Watkins, & Banks, 2004). Thus, the maladaptive perfectionism reported by the BN and PD groups may influence these individuals to engage in more extreme methods (i.e., purging behavior) of attaining the thin-ideal. In sum maladaptive perfectionism may be an important psychosocial factor that accounts for why PD and BN represent more severe syndromes along a continuum of eating pathology.

To date, several studies have evidenced the interaction of perfectionism and low self-esteem in predicting bulimic symptomatology (Calam & Waller, 1998; Vohs, Bardone, Joiner, & Abramson, 1999; Vohs, Voelz, Pettit, Bardone, Katz, Abramson et al., 2001). Another study by Fink et al. (2009) found that all eating disorder groups (which included a
PD group) in the sample reported lower levels of self-esteem than non-eating disordered group, yet the eating disorder groups did not differ significantly from each other on levels of self-esteem. These findings were partially supported in the present study; that is, the BN group reported significantly lower levels of self-esteem than all other groups. Although the BN and PD groups did not differ significantly on levels of maladaptive perfectionism, the BN group reported significantly lower self-esteem than all other groups. Thus, the current study suggests that low self-esteem, coupled with maladaptive perfectionism, may explain why BN represents a more severe syndrome than PD. That is, while individuals with BN and PD both engage in purging behaviors, only individuals with significantly lower self-esteem (i.e., individuals with BN) also engage in OBEs.

It is important to note that the BN group reported the most severe levels of pathology as compared to the other groups in several domains, which is consistent with previous research and etiological theories of eating pathology. In regards to body image disturbance, the fact that all three eating pathology groups reported significantly higher levels of dissatisfaction than the Control group supports previous findings that demonstrated body image dissatisfaction is a risk factor for both dieting and eating pathology (e.g., Stice, 2002). However, the BN group reported significantly higher levels of body image dissatisfaction in comparison to the PD and Restrained Eater groups. This may be due to the fact that body image dissatisfaction plays an especially influential role in the onset and maintenance of BN. For instance, several studies have demonstrated that body dissatisfaction predicts the onset of bulimic symptoms (Field, Camargo, Taylor, Berkey, & Colditz, 1999; Killen et al., 1994, 1996; Stice & Agras, 1998). Furthermore,
Stice and Agras (1998) found that body dissatisfaction predicted maintenance of bulimic symptoms. In sum, body dissatisfaction appears to serve as a risk factor for full-syndrome BN, and perhaps the dissatisfaction becomes more intense as individuals with BN engage in objective binge episodes and purging behavior, which directs more of their attention and energy to negative thoughts about their weight and shape. This feedback loop may account for the increased levels of body dissatisfaction reported by the BN as compared to the PD and Restrained Eater groups.

In addition, the BN group reported significantly more doubts over actions (a dimension of perfectionism) and obsessive compulsive symptoms than controls, as well as significantly more difficulties in emotion regulation and lower self-esteem than all other groups; these findings replicate previous research on BN. For instance, studies have found that Obsessive Compulsive Disorder is frequently comorbid (0-40%) with BN (e.g., Godart, Flament, Perdereau, & Jeammet, 2002). Also, it has been found that a lack of emotion recognition (Legenbauer, Vocks, & Ruddel, 2008) and emotion dysregulation (e.g., Hayaki, 2009; Smyth, Wonderlich, Heron, Sliwinski, Crosby, Mitchell, & Engel, 2007) are related to symptoms of BN. Taken together, BN appears to be associated with more severe levels of maladaptive psychological correlates as compared to PD and Restrained Eaters, which is consistent with a continuum model of bulimic symptomatology. However, it is important to note that the BN and PD groups did not differ significantly on levels of maladaptive perfectionism, which suggests that such perfectionism is associated with more extreme compensatory behavior (i.e., purging) in both PD and BN.
Although many of the findings in the present study were consistent with predictions, the results regarding impulsivity were not expected. In contrast to evidence that suggests impulse control problems are associated with eating pathology (e.g., Hawkins & Clement, 1984; Fischer, Smith, & Cyders, 2008), there were no group differences on levels of impulsivity or impulse strength. These findings are consistent with the meta-analytic review by Stice (2002), who reported that while impulsivity did not directly predict increases in bulimic symptoms across studies, in some circumstances impulse problems may interact with other factors (e.g., substance abuse) to indirectly increase vulnerability to eating pathology. Nevertheless, in the present study the BN group reported significantly more difficulties in emotion regulation than all other groups, which suggests they may lack the skills to regulate or control strong emotions or urges. Thus, it would be worthwhile to explore the possibility of interactions between emotion regulation and impulsivity in future studies of PD and BN.

Additionally, the expectation that all eating pathology groups would report higher levels perceived hunger as compared to controls was not supported. Although the BN and Restrained Eater groups did not differ significantly on levels of perceived hunger, both groups reported significantly higher levels than both the PD and Control groups. Given the significant level of dietary restraint reported by all eating pathology groups, it is unclear why the PD group reported lower levels of perceived hunger than the BN and Restrained Eater groups. One possibility is that individuals with PD consume more calories than individuals with BN or Restrained Eaters in general, or that they consume more calories
than Restrained Eaters during subjective binge episodes. Future studies of PD should more closely assess the eating behavior of individuals with PD.

Although the aforementioned findings are compelling, the present study is not without limitations. Due to the cross-sectional nature of this study, it cannot be determined if those with PD progress to full-syndrome BN. That is, it is unclear whether all restrained eaters will develop more severe eating pathology, or if individuals with PD progress to BN. In addition, this study did not assess the participants’ history of eating disturbances, and it is not known whether those with PD met criteria for BN at a previous time in their lives, even though previous research has found little diagnostic crossover in PD (Keel et al., 2005). If future research finds diagnostic migrations, it will be necessary to identify risk factors that may increase the likelihood that individuals progress from restrained eating to PD and/or full-syndrome BN. The results of the present study suggest that low self-esteem and aspects of perfectionism (the levels of which were similar in the PD and BN groups) may be examples of such risk factors that should be assessed in future prospective studies. However, based on the findings from the present study, no conclusions can be drawn regarding the natural course of PD, and if indeed it represents a progression from restrained eating behavior to full-syndrome BN. Future prospective studies are necessary to explore this conceptualization.

In addition, the relatively small sample size limits the statistical power and generalizability of the results. Although many of the present findings are consistent with previous research (e.g., Bardone-Cone, Weisuhn, & Boyd, 2009; Chang, Watkins, & Banks, 2004, Godart, Flament, Perdereau, & Jeammet, 2002; Hayaki, 2009; Herman and
Polivy, 1980, 1984, 1985; Keel, 2005, 2009, 2008; Legenbauer, Vocks, & Ruddel, 2008; Smyth, Wonderlich, Heron, Sliwinski, Crosby, Mitchell, & Engel, 2007; Stice, 2002), future studies using larger sample sizes are necessary to replicate the present findings. Also, these results are based solely on self-report measures, and there is a possibility that some participants intentionally minimized symptoms due to social desirability factors. Furthermore, the possibility of reporting biases was magnified due to the fact that study utilized a non-clinical sample. That is, participants were not seeking treatment for eating disturbances and thus may have been motivated to underreport symptoms. If this was the case, the present study was a conservative test of group differences.

Despite such limitations, the pattern of findings provides evidence that support the possibility that PD is not a distinct eating disorder worthy of a separate diagnostic category from EDNOS; however, these findings also suggest that PD may exist on a continuum of bulimic spectrum disorders. While some research has conceptualized PD as a clinically significant, distinct eating disorder diagnostic category (e.g., Keel, 2007, 2004, 2005), it is possible that PD represents a progression from dietary restraint to BN. Thus, PD may better be conceptualized as a subtype with the BN diagnostic category. To date, PD has not been conceptualized within a framework of empirically supported theories of eating pathology, such as Restraint Theory, and the results of the present study confirm this conceptualization. That is, the internalization of sociocultural ideals, coupled with dietary restraint, appears to predispose individuals to experience body image dissatisfaction and eating disturbances. Such dietary restriction may lead to subjective, if not objective, binge episodes, which were reported by all eating disorder groups in the present study. However,
continued dietary restraint and subjective binge episodes may lead to purging behavior in some individuals, who can be characterized as having PD. In turn, some of these individuals may eventually proceed to engage in objective binge episodes, which therefore alters their diagnosis to BN. Though the present findings support such a conceptualization of PD, more research is necessary to confirm the progression of restrained eating behavior to PD to BN. Furthering the understanding and conceptualization of PD will have important provide important evidence to inform the diagnosis, treatment, and prevention of bulimic spectrum disorders.
REFERENCES
REFERENCES


APPENDICES
CONSENT FORM

An investigation of psychological correlates and relationships to eating behaviors

I am studying women’s body image, well-being, and mental health. This is of particular interest to me because college-aged women are at high risk for developing negative body image and abnormal eating and/or dieting behaviors. I would like you to take part in this project. If you decide to do this, you will be asked to complete a brief interview (approximately 15 minutes), followed by a series of paper-and-pencil questionnaires. The entire process will take about 90 minutes.

Because some of the questions asked in this study address sensitive topics and behaviors, you may experience emotional distress during or after completing the study. If you would like referral information for licensed psychologists who can address such concerns with you, please contact the researchers.

The responses you give during this study will be completely confidential. Records will be kept in a locked file cabinet in my laboratory office. This office can only be accessed by me and my graduate students, and our undergraduate research assistants. Only the researchers involved in the current study will have access to these records.

If you part in this project, you may receive credit for Psychology courses, and you will be helping the researchers to better understand what contributes to unhealthy eating attitudes and behaviors among college-aged women. Taking part in this project is entirely up to you, and no one will hold it against you if you decide not to do it. If you do part, you may stop at any time.

If you want to know more about this research project, please call Dr. Janis H. Crowther (Tel. x22090; jcrowthe@kent.edu). The project has been approved by Kent State University. If you have questions about Kent State University's rules for research, please call Dr. John West, Vice President of Research, Division of Research and Graduate Studies (Tel. 330.672.2704). You will get a copy of this consent form.

Sincerely,

Kathryn E. Smith
B. CONSENT STATEMENT(S)

1. I agree to take part in this project. I know what I will have to do and that I can stop at any time.

________________________________________________________________________
Signature Date

Waiver or Alteration of Informed Consent
Informed consent assures that participants understand the nature of the research and can knowledgeably and voluntarily decide whether or not to participate. The basic elements of informed consent (e.g., explanation of the study's purpose, description of foreseeable risks and benefits, description of the extent to which confidentiality will be maintained, explanation of whom to contact with questions, statement that participation is voluntary and may be discontinued at any time, etc.) are outlined in federal guidelines (Title 45, Code of Federal Regulations, Part 46). In rare instances, the guidelines allow IRBs to approve a consent procedure that does not include, or alters, some of the elements of informed consent. To request an approval for a waiver or alteration of informed consent, the investigator must document that the proposed study meets the following criteria:

1. The research involves no more than minimal risk to participants;

2. The waiver or alteration will not adversely affect the rights and welfare of participants;

3. The research could not practicably be carried out without the waiver or alteration (e.g., some research on child abuse and neglect or on runaway teens could not be carried out without a waiver of parental consent).

4. Whenever appropriate, the participants will be provided with additional pertinent information after they have participated in the study.

Waivers cannot be granted because the investigator lacks the resources (e.g., personnel, time, money) needed to obtain informed consent. In most instances, granting a waiver of informed consent involves full board review.

Passive Consent
Passive consent is when parents are sent a letter explaining the research and are told that unless they return the letter the child will be enrolled in the study. This is different from a waiver because parents are notified about the research through a letter. The Board's concern with this type of consent is that there is no guarantee that parents see the letter. Unless justification beyond inconvenience is provided, passive consent will not be allowed.
APPENDIX B

QUESTIONNAIRE PACKET
An investigation of psychological correlates and relationships to eating behaviors

2009

Please follow the instructions for each set of questions. Some of the questions ask about personal issues and behaviors. It is important that you read each question carefully and answer honestly, as your responses will provide us with greater understanding and knowledge about these behaviors and the best way to help people.

Please record your answers directly on each questionnaire in the space provided.

Thank you for your participation!
Demographics Questionnaire

Age _____ Height _____ Weight _____

1. Current year (choose one):
   ___ 1) First-Year
   ___ 2) Sophomore
   ___ 3) Junior
   ___ 4) Senior
   ___ 5) 5th year of program
   ___ 6) Graduate student
   ___ 7) Other (please explain):
   __________________________

2. Employment status (check one):
   ___ 1) not currently employed
   ___ 2) employed part-time
   ___ 3) employed full-time
   ___ 4) other __________________

3. Occupation/job:________________

4. Your Annual Income (check one):
   ___ 1) Less than $5,000
   ___ 2) $5,000 to $9,999
   ___ 3) $10,000 to $14,999
   ___ 4) $15,000 to $24,999
   ___ 5) $25,000 to $34,999
   ___ 6) $35,000 to $49,999
   ___ 7) $50,000 to $74,999
   ___ 8) $75,000 to $99,999
   ___ 9) $100,000 to $149,999
   ___ 10) $150,000 or more

5. Your Household’s Annual Income
   (check one):
   ___ 1) Less than $5,000
   ___ 2) $5,000 to $9,999
   ___ 3) $10,000 to $14,999
   ___ 4) $15,000 to $24,999
   ___ 5) $25,000 to $34,999
   ___ 6) $35,000 to $49,999
   ___ 7) $50,000 to $74,999
   ___ 8) $75,000 to $99,999
   ___ 9) $100,000 to $149,999
   ___ 10) $150,000 or more

6. Who lives in your household?
   ______________________________

7. Your ethnic origin (check one):
   ___ 1) American Indian or Alaskan Native
   ___ 2) African American/Black
   ___ 3) Asian, Asian American, Asian Indian, or Pacific Islander:
       ___ Asian Indian
       ___ Chinese
       ___ Japanese
       ___ Korean
       ___ Filipino
       ___ Other Asian (specify group):
   ______________________________
   ___ 4) Caucasian/White
   ___ 5) Hispanic/Latina
       ___ Mexican, Mexican American, Chicana
       ___ Puerto Rican
       ___ Cuban
       ___ Other Hispanic/Latina
       (specify group):
   ______________________________
   ___ 6) Other (please specify):
       ____________________________

8. Your nation of origin (Where you were born):
   ______________________________

9. Have you ever sought or received treatment for an eating problem?
   ___ 1) Yes (please specify):
       ____________________________
   ___ 2) No
10. Have you ever been diagnosed with an eating disorder?
   ___ 1) Yes (please specify):
       ____________________________
   ___ 2) No

What is your current marital status?
___ 1) Never married
___ 2) Married
___ 3) Separated/divorced
___ 4) Widowed
___ 5) Living with partner
## Eating Disorder Diagnostic Scale (EDDS)

Use the scale below to answer items 1-4.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>Slightly</td>
<td>Moderately</td>
<td>Extremely</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OVER THE PAST THREE MONTHS:**

___ 1. Have you felt fat?
___ 2. Have you had a definite fear that you might gain weight or become fat?
___ 3. Has your weight influenced how you think about (judge) yourself as a person?
___ 4. Has your shape influenced how you think about (judge) yourself as a person?

5. During the past 6 months, have there been times when you felt you have eaten what other people would regard as an unusually large amount of food (i.e., a quart of ice cream) given the circumstances?  
   YES  NO

6. During the times when you ate an unusually large amount of food, did you experience a loss of control (feel you couldn’t stop eating or control what or how much you were eating)?  
   YES  NO

7. How many DAYS per week on average over the past 6 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?  
   0 1 2 3 4 5 6 7

8. How many TIMES per week on average over the past 3 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?  
   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

During these episodes of overeating and loss of control did you… (circle yes/no)

   YES  NO 9. Eat much more rapidly than normal?
   YES  NO 10. Eat until you felt uncomfortably full?
   YES  NO 11. Eat large amounts of food when you didn’t feel physically hungry?
   YES  NO 12. Eat alone because you were embarrassed by how much you were eating?
   YES  NO 13. Feel disgusted with yourself, depressed, or very guilty after overeating?
   YES  NO 14. Feel very upset about your uncontrollable overeating or resulting weight gain?

15. How many times per week on average over the past 3 months have you made yourself vomit to prevent weight gain or counteract the effects of eating?  
   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

16. How many times per week on average over the past 3 months have you used laxatives or diuretics to prevent weight gain or counteract the effects of eating?  
   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

17. How many times per week on average over the past 3 months have you fasted (skipped at least 2 meals in a row) to prevent weight gain or counteract the effects of eating?  
   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

18. How many times per week on average over the past 3 months have you engaged in excessive exercise specifically to counteract the effects of overeating episodes?  
   0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

20. How tall are you? _______ ft. _______ in.

21. Over the past 3 months, how many periods have you missed?
   n/a

22. Have you been taking birth control pills during the past 3 months? YES  NO
Rosenberg Self-Esteem Scale (RSE)

Below is a list of statements dealing with your general feelings about yourself. Please indicate how much each applies to you using the scale below.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
</tbody>
</table>

1. _____I feel that I'm a person of worth, at least on an equal plane with others.
2. _____I feel that I have a number of good qualities.
3. _____All in all, I am inclined to feel that I am a failure.
4. _____I am able to do things as well as most other people.
5. _____I feel I do not have much to be proud of.
6. _____I take a positive attitude toward myself.
7. _____On the whole, I am satisfied with myself.
8. _____I wish I could have more respect for myself.
9. _____I certainly feel useless at times.
10. _____At times I think I am no good at all.
**Multidimensional Perfectionism Questionnaire (MPQ)**

Please indicate how much you agree with the following statements by writing the appropriate number in the blank following the statement.

<table>
<thead>
<tr>
<th></th>
<th>1 Strongly disagree</th>
<th>2 Disagree</th>
<th>3 Neither agree nor disagree</th>
<th>4 Agree</th>
<th>5 Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My parents set very high standards for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Organization is very important to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>As a child, I was punished for doing things less than perfect.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If I do not set the highest standards for myself, I am likely to end up a second-rate person.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>My parents never tried to understand my mistakes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>It is important to me that I be thoroughly competent in everything I do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I am a neat person.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I try to be an organized person.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>If I fail at work/school, I am a failure as a person.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I should be upset if I make a mistake.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>My parents wanted me to be the best at everything.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I set higher goals than most people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>If someone does a task at work/school better than I, then I feel like I failed the whole task.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>If I fail partly, it is as bad as being a complete failure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Only outstanding performance is good enough in my family.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I am very good at focusing my efforts on attaining a goal.</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
17. Even when I do something very carefully, I often feel that it is not quite right. _____
18. I hate being less than the best at things. _____
19. I have extremely high goals. _____
20. My parents have expected excellence from me. _____
21. People will probably think less of me if I make a mistake. _____
22. I never felt like I could meet my parents’ expectations. _____
23. If I do not do as well as other people, it means I am an inferior human being. _____
24. Other people seem to accept lower standards from themselves than I do. _____
25. If I do not do well all the time, people will not respect me. _____
26. My parents have always had higher expectations for my future than I have. _____
27. I try to be a neat person. _____
28. I usually have doubts about the simple everyday things I do. _____
29. Neatness is very important to me. _____
30. I expect higher performance in my daily tasks than most people. _____
31. I am an organized person. _____
32. I tend to get behind in my work because I repeat things over and over. _____
33. It takes me a long time to do something “right”. _____
34. The fewer mistakes I make, the more people will like me. _____
35. I never felt like I could meet me parents’ standards. _____
### Berkeley Expressivity Questionnaire (BEQ)

For each statement below, please indicate your agreement or disagreement. Do so by filling in the blank after each item with the appropriate number from the following rating scale:

<table>
<thead>
<tr>
<th>1</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>strongly agree</td>
<td>neutral</td>
<td></td>
<td></td>
<td>strongly disagree</td>
<td></td>
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</tbody>
</table>

1. Whenever I feel positive emotions, people can easily see exactly what I am feeling.  
   ____
2. I sometimes cry during sad movies.  
   ____
3. People often do not know what I am feeling.  
   ____
4. I laugh out loud when someone tells me a joke that I think is funny.  
   ____
5. It is difficult for me to hide my fear.  
   ____
6. When I'm happy, my feelings show.  
   ____
7. My body reacts very strongly to emotional situations.  
   ____
8. I've learned it is better to suppress my anger than to show it.  
   ____
9. No matter how nervous or upset I am, I tend to keep a calm exterior.  
   ____
10. I am an emotionally expressive person.  
    ____
11. I have strong emotions.  
    ____
12. I am sometimes unable to hide my feelings, even though I would like to.  
    ____
13. Whenever I feel negative emotions, people can easily see exactly what I am feeling.  
    ____
14. There have been times when I have not been able to stop crying even though I tried to stop.  
    ____
15. I experience my emotions very strongly.  
    ____
16. What I'm feeling is written all over my face.  
    ____
**Barratt Impulsivity Scale (BIS-II)**

Indicate how much you agree with each statement using the values below. Write the appropriate number in the blank following each statement.

<table>
<thead>
<tr>
<th></th>
<th>Rarely/Never</th>
<th>Occasionally</th>
<th>Often</th>
<th>Almost always/Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I plan tasks carefully.</td>
<td></td>
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<tr>
<td>2</td>
<td>I do things without thinking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I make up my mind quickly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I am happy-go-lucky.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>I don’t “pay attention.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I have “racing” thoughts.”</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>I plan trips well ahead of time.</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>I am self-controlled.</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>I concentrate easily.</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>I save regularly.</td>
<td></td>
<td></td>
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<tr>
<td>11</td>
<td>I “squirm” at plays or lectures.</td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>I am a careful thinker.</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>I plan for job security.</td>
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<tr>
<td>14</td>
<td>I say things without thinking.</td>
<td></td>
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<tr>
<td>15</td>
<td>I like to think about complex problems.</td>
<td></td>
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<tr>
<td>16</td>
<td>I change jobs.</td>
<td></td>
<td></td>
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<tr>
<td>17</td>
<td>I act “on impulse.”</td>
<td></td>
<td></td>
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<tr>
<td>18</td>
<td>I get easily bored when solving thought problems.</td>
<td></td>
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<tr>
<td>19</td>
<td>I act on the spur of the moment.</td>
<td></td>
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<tr>
<td>20</td>
<td>I am a steady thinker.</td>
<td></td>
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<tr>
<td>21</td>
<td>I change residences.</td>
<td></td>
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<tr>
<td>22</td>
<td>I buy things on impulse.</td>
<td></td>
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<tr>
<td>23</td>
<td>I can only think about one problem at a time.</td>
<td></td>
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<tr>
<td>24</td>
<td>I change hobbies.</td>
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<tr>
<td>25</td>
<td>I spend or charge more than I earn.</td>
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<tr>
<td>26. I often have extraneous thoughts when thinking.</td>
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<tr>
<td>27. I am more interested in the present than the future.</td>
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<tr>
<td>28. I am restless at the theater or lectures.</td>
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<tr>
<td>29. I like puzzles.</td>
<td></td>
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<tr>
<td>30. I am future oriented.</td>
<td></td>
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</tbody>
</table>
Vancouver Obsessive Compulsive Inventory (VOCI)

Please use the following scale to respond to the items below:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>A little</td>
<td>Some</td>
<td>Much</td>
<td>Very much</td>
</tr>
</tbody>
</table>

How much is each of the following statements true of you?

1. _____I feel compelled to check letters over and over before mailing them.
2. _____I am often upset by my unwanted thoughts of using a sharp weapon.
3. _____I feel very dirty after touching money.
4. _____I find it very difficult to make even trivial decisions.
5. _____I feel compelled to be absolutely perfect.
6. _____I repeatedly experience the same unwanted thought or image about an accident.
7. _____I repeatedly check and recheck things like taps and switches after turning them off.
8. _____I use an excessive amount of disinfectants to keep my home or myself safe from germs.
9. _____I often feel compelled to memorize trivial things (e.g., license plate numbers, instructions on labels).
10. _____I have trouble carrying out normal household activities because my home is so cluttered with things I have collected.
11. _____After I have decided something, I usually worry about my decision for a long time.
12. _____I find that almost every day I am upset by unpleasant thoughts that come into mind against my will.
13. _____I spend far too much time washing my hands.
14. _____I often have trouble getting things done because I try to do everything exactly right.
15. _____Touching the bottom of my shoes makes me very anxious.
16. _____I am often upset by unwanted thoughts or images of sexual acts.
17. _____ I become very anxious when I have to make even a minor decision.
18. _____ I feel compelled to follow a very strict routine when doing ordinary things.
19. _____ I feel upset if my furniture or other possessions are not always in exactly the same position.
20. _____ I repeatedly check that my doors or windows are locked, even though I try to resist the urge to do so.
21. _____ I find it very difficult to touch garbage or garbage bins.
22. _____ I become very tense or upset when I think about throwing anything away.
23. _____ I am excessively concerned about germs and disease.
24. _____ I am often very late because I can’t get through ordinary tasks on time.
25. _____ I avoid using public telephones because of possible contamination.
26. _____ I am embarrassed to invite people to my home because it is full of piles of worthless things I have saved.
27. _____ I repeatedly experience the same upsetting thought or image about death.
28. _____ I am often upset by unwanted thoughts or images of blurring out obscenities or insults in public.
29. _____ I worry far too much that I might upset other people.
30. _____ I am often frightened by unwanted urges to drive or run into oncoming traffic.
31. _____ I almost always count when doing a routine task.
32. _____ I feel very contaminated if I touch an animal.
33. _____ One of my major problems is repeated checking.
34. _____ I often experience upsetting and unwanted thoughts about losing control.
35. _____ I find it almost impossible to decide what to keep and what to throw away.
36. _____ I am strongly compelled to count things.
37. _____ I repeatedly check that my stove is turned off, even though I resist the urge to do so.
38. _____ I get very upset if I can’t complete my bedtime routine in exactly the same way every night.

39. _____ I am very afraid of having even slight contact with bodily secretions (blood, urine, sweat, etc.).

40. _____ I am often very upset by my unwanted impulses to harm other people.

41. _____ I spend a lot of time every day checking things over and over again.

42. _____ I have great trouble throwing anything away because I am very afraid of being wasteful.

43. _____ I frequently have to check things like switches, faucets, appliances, and doors several times.

44. _____ One of my major problems is that I am excessively concerned about cleanliness.

45. _____ I feel compelled to keep far too many things like old magazines, newspapers, and receipts because I am afraid I might need them in the future.

46. _____ I repeatedly experience upsetting and unacceptable thoughts of a religious nature.

47. _____ I tend to get behind in my work because I repeat the same thing over and over again.

48. _____ I try to put off making decisions because I’m so afraid of making a mistake.

49. _____ I often experience upsetting and unwanted thoughts about illness.

50. _____ I am afraid to use even well kept public toilets because I am so concerned about germs.

51. _____ Although I try to resist, I feel compelled to collect a large quantity of things I never actually use.

52. _____ I repeatedly experience upsetting and unwanted immoral thoughts.

53. _____ One of my major problems is that I pay far too much attention to detail.

54. _____ I am often upset by unwanted urges to harm myself.

55. _____ I spend far too long getting ready to leave home each day because I have to do everything exactly right.
Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below in the blank before each statement:

1. _____ I am clear about my feelings.
2. _____ I pay attention to how I feel.
3. _____ I experience my emotions as overwhelming and out of control.
4. _____ I have no idea how I am feeling.
5. _____ I have difficulty making sense out of my feelings.
6. _____ I am attentive to my feelings.
7. _____ I know exactly how I am feeling.
8. _____ I care about what I am feeling.
9. _____ I am confused about how I feel.
10. _____ When I’m upset, I acknowledge my emotions.
11. _____ When I’m upset, I become angry with myself for feeling that way.
12. _____ When I’m upset, I become embarrassed for feeling that way.
13. _____ When I’m upset, I have difficulty getting work done
14. _____ When I’m upset, I become out of control.
15. _____ When I’m upset, I believe that I will remain that way for a long time.
16. _____ When I’m upset, I believe that I’ll end up feeling very depressed.
17. _____ When I’m upset, I believe that my feelings are valid and important.
18. _____ When I’m upset, I have difficulty focusing on other things.
19. _____ When I’m upset, I feel out of control.
20. _____ When I’m upset, I can still get things done.
21. _____ When I’m upset, I feel ashamed with myself for feeling that way.
22. _____ When I’m upset, I know that I can find a way to eventually feel better.
23. _____ When I’m upset, I feel like I am weak.
24. _____ When I’m upset, I feel like I can remain in control of my behaviors.
25. When I’m upset, I feel guilty for feeling that way.
26. When I’m upset, I have difficulty concentrating.
27. When I’m upset, I have difficulty controlling my behaviors.
28. When I’m upset, I believe that there is nothing I can do to make myself feel better.
29. When I’m upset, I become irritated with myself for feeling that way.
30. When I’m upset, I start to feel very bad about myself.
31. When I’m upset, I believe that wallowing in it is all I can do.
32. When I’m upset, I lose control over my behaviors.
33. When I’m upset, I have difficulty thinking about anything else.
34. When I’m upset, I take time to figure out what I’m really feeling.
35. When I’m upset, it takes me a long time to feel better.
36. When I’m upset, my emotions feel overwhelming.
Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ)

Indicate how much you agree with each statement using the values below. Write the appropriate number in the blank following each statement.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

1. _____ TV programs are an important source of information about fashion and “being attractive.”

2. _____ I’ve felt pressure from TV or magazines to lose weight.

3. _____ I would like my body to look like the people who are on TV.

4. _____ I compare my body to the bodies of TV and movie stars.

5. _____ TV commercials are an important source of information about fashion and “being attractive.”

6. _____ I’ve felt pressure from TV or magazines to feel pretty.

7. _____ I would like my body to look like the models who appear in magazines.

8. _____ I compare my appearance to the appearance of TV and movie stars.

9. _____ Music videos on TV are an important source of information about fashion and “being attractive.”

10. _____ I’ve felt pressure from TV and magazines to be thin.

11. _____ I would like my body to look like the people who are in the movies.

12. _____ I compare my body to the bodies of people who appear in magazines.

13. _____ Magazine articles are an important source of information about fashion and “being attractive.”

14. _____ I’ve felt pressure from TV or magazines to have a perfect body.

15. _____ I wish I looked like the models in music videos.

16. _____ I compare my appearance to the appearance of people in magazines.

17. _____ Magazine advertisements are an important source of information about fashion and being “attractive.”
18. ____I've felt pressure from TV or magazines to diet.

19. ____I wish I looked as athletic as the people in magazines.

20. ____I compare my body to that of people in “good shape.”

21. ____Pictures in magazines are an important source of information about fashion and “being attractive.”

22. ____I've felt pressure from TV or magazines to exercise.

23. ____I wish I looked as athletic as sports stars.

24. ____I compare my body to that of people who are athletic.

25. ____Movies are an important source of information about fashion and “being attractive.”

26. ____I've felt pressure from TV or magazines to change my appearance.

27. ____I try to look like the people on TV.

28. ____Movie stars are an important source of information about fashion and “being attractive.”

29. ____Famous people are an important source of information about fashion and “being attractive.”

30. ____I try to look like sports athletes.
**Revised Restraint Scale (RRS)**

Please choose the response that best describes you and write it in the blank.

1. _____ How often are you dieting?
   a. Never
   b. Rarely
   c. Sometimes
   d. Often
   e. Always

2. _____ What is the maximum amount of weight (in pounds) that you have ever lost within one month?
   a. 0-4
   b. 5-9
   c. 10-14
   d. 15-19
   e. 20+

3. _____ What is your maximum weight gain within a week (in pounds)?
   a. 0-1
   b. 1.1-2
   c. 2.1-3
   d. 3.1-4
   e. 4.1-5
   f. 5.1+

4. _____ In a typical week, how much does your weight fluctuate (in pounds)?
   a. 0-1
   b. 1.1-2
   c. 2.1-3
   d. 3.1-4
   e. 4.1-5
   f. 5.1+

5. _____ Would a weight fluctuation of 5 lbs affect the way you live your life?
   a. Not at all
   b. Slightly
   c. Moderately
   d. Very much
6. _____ Do you eat sensibly in front of others and splurge alone?
   a. Never
   b. Rarely
   c. Often
   d. Always

7. _____ Do you give too much time and thought to food?
   a. Never
   b. Rarely
   c. Often
   d. Always

8. _____ Do you have feelings of guilt after overeating?
   a. Never
   b. Rarely
   c. Often
   d. Always

9. _____ How conscious are you of what you are eating?
   a. Not at all
   b. Slightly
   c. Moderately
   d. Extremely

10. _____ How many pounds over your desired weight were you at your maximum weight?
    a. 0-1
    b. 1-5
    c. 6-10
    d. 11-20
    e. 21+
**Body Satisfaction Questionnaire (BSQ)**

Please think about how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and select the appropriate number to the right. Please answer all of the questions.

<table>
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<th>1</th>
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<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often</td>
<td>Always</td>
<td></td>
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</table>

**OVER THE PAST FOUR WEEKS:**

1. _____ Has feeling bored made you brood about your shape?
2. _____ Have you been so worried about your shape that you have been feeling that you ought to diet?
3. _____ Have you thought that your thighs, hips, or bottom are too large for the rest of you?
4. _____ Have you been afraid that you might become fat (or fatter)?
5. _____ Have you worried about your flesh not being firm enough?
6. _____ Has feeling full (e.g., after eating a large meal) made you feel fat?
7. _____ Have you felt so bad about your shape that you have cried?
8. _____ Have you avoided running because your flesh might wobble?
9. _____ Has being with thin women made you feel self-conscious about your shape?
10. _____ Have you worried about your thighs spreading out when sitting down?
11. _____ Has eating even a small amount of food made you feel fat?
12. _____ Have you noticed the shape of other women and felt that your own shape compared unfavorably?
13. _____ Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?
14. _____ Has being naked, such as when taking a bath or shower, made you feel fat?
15. _____ Have you avoided wearing clothes that make you particularly aware of the shape of your body?
16. ____ Have you imagined cutting off fleshy areas of your body?

17. ____ Has eating sweets, cakes, or other high calorie food made you feel fat?

18. ____ Have you not gone out to social occasions (e.g., parties) because you have felt bad about your shape?

19. ____ Have you felt excessively large and rounded?

20. ____ Have you felt ashamed of your body?

21. ____ Has worry about your shape made you diet?

22. ____ Have you felt happiest about your shape when your stomach has been empty (e.g., in the morning)?

23. ____ Have you thought that you are the shape you are because you lack self-control?

24. ____ Have you worried about other people seeing rolls of flesh around your waist or stomach?

25. ____ Have you felt that it is not fair that other women are thinner than you?

26. ____ Have you vomited in order to feel thinner?

27. ____ When in company, have you worried about taking up too much room (e.g., sitting on a sofa or bus seat)?

28. ____ Have you worried about your flesh being dimply?

29. ____ Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?

30. ____ Have you pinched areas of your body to see how much fat there is?

31. ____ Have you avoided situations where people could see your body (e.g., communal changing rooms or swimming pools)?

32. ____ Have you taken laxatives in order to feel thinner?

33. ____ Have you been particularly self-conscious about your shape when in the company of other people?

34. ____ Has worry about your shape made you feel you ought to exercise?
Three Factor Eating Questionnaire (TFEQ)

Please rate the following statements as either True (T) or False (F):

1. ______ When I smell a sizzling steak or see a juicy piece of meat, I find it very difficult to keep from eating, even if I have just finished a meal.

2. ______ I usually eat too much at social occasions, like parties and picnics.

3. ______ I am usually so hungry that I eat more than three times a day.

4. ______ When I have eaten my quota of calories, I am usually good about not eating anymore.

5. ______ Dieting is so hard for me because I just get too hungry.

6. ______ I deliberately take small helpings as a means of controlling my weight.

7. ______ Sometimes things just taste so good that I keep on eating even when I am no longer hungry.

8. ______ Since I am often hungry, I sometimes wish that while I am eating, an expert would tell me that I have had enough or that I can have something more to eat.

9. ______ When I feel anxious, I find myself eating.

10. ______ Life is too short to worry about dieting.

11. ______ Since my weight goes up and down, I have gone on reducing diets more than once.

12. ______ I often feel so hungry that I just have to eat something.

13. ______ When I am with someone who is overeating, I usually overeat too.

14. ______ I have a pretty good idea of the number of calories in common food.

15. ______ Sometimes when I start eating, I just can’t seem to stop.

16. ______ It is not difficult for me to leave something on my plate.

17. ______ At certain times of the day, I get hungry because I have gotten used to eating then.

18. ______ While on a diet, if I eat food that is not allowed, I consciously eat less for a period of time to make up for it.
19. _____ Being with someone who is eating often makes me hungry enough to eat also.

20. _____ When I feel blue, I often overeat.

21. _____ I enjoy eating too much to spoil it by counting calories or watching my weight.

22. _____ When I see a real delicacy, I often get so hungry that I have to eat right away.

23. _____ I often stop eating when I am not really full as a conscious means of limiting the amount that I eat.

24. _____ I get so hungry that my stomach often seems like a bottomless pit.

25. _____ My weight has hardly changed at all in the last ten years.

26. _____ I am always hungry so it is hard for me to stop eating before I finish the food on my plate.

27. _____ When I feel lonely, I console myself by eating.

28. _____ I consciously hold back at meals in order not to gain weight.

29. _____ I sometimes get very hungry late in the evening or at night.

30. _____ I eat anything I want, anytime I want.

31. _____ Without even thinking about it, I take a long time to eat.

32. _____ I count calories as a conscious means of controlling my weight.

33. _____ I do not eat some foods because they make me fat.

34. _____ I am always hungry enough to eat at any time.

35. _____ I pay a great deal of attention to changes in my figure.

36. _____ While on a diet, if I eat a food that is not allowed, I often then splurge and eat other high calorie foods.
Now, please answer the following questions by circling the number above the response that is most appropriate to you.

37. How often are you dieting in a conscious effort to control your weight?
   1 2 3 4
   Rarely  Sometimes  Usually  Always

38. Would a weight fluctuation of 5 lbs. affect the way you live your life?
   1 2 3 4
   Not at all  Slightly  Moderately  Very Much

39. How often do you feel hungry?
   1 2 3 4
   Only at mealtimes  Sometimes between meals  Often between meals  Almost Always

40. Do your feelings of guilt about overeating help you control your food intake?
   1 2 3 4
   Never  Rarely  Often  Always

41. How difficult would it be for you to stop eating halfway through dinner and not eat for the next four hours?
   1 2 3 4
   Not at all  Slightly difficult  Moderately difficult  Very Difficult

42. How conscious are you of what you are eating?
   1 2 3 4
   Not at all  Slightly  Moderately  Extremely

43. How frequently do you avoid “stocking up” on tempting food?
   1 2 3 4
   Almost never  Seldom  Usually  Almost always

44. How likely are you to shop for low-calorie food?
   1 2 3 4
   Unlikely  Slightly unlikely  Moderately likely  Very likely

45. Do you eat sensibly in front of others and splurge alone?
   1 2 3 4
   Never  Rarely  Often  Always

46. How likely are you to consciously eat slowly in order to cut down on how much you eat?
   1 2 3 4
   Unlikely  Slightly unlikely  Moderately likely  Very likely

47. How frequently do you skip dessert because you are no longer hungry?
   1 2 3 4
   Almost never  Seldom  At least once a week  Almost everyday
48. How likely are you to consciously eat less than you want?

1  2  3  4
Unlikely  Slightly unlikely  Moderately likely  Very likely

49. Do you go on eating binges though you are not hungry?

1  2  3  4
Never  Rarely  Sometimes  At least once a week

50. On a scale of 0 to 5, where 0 means no restraint in eating (eating whatever you want, whenever you want it) and 5 means total restraint (constantly limiting food intake and never “giving in”), what number would you give yourself?

0  1  2  3  4
Eat whatever you want, whenever you want it
Usually eat whatever you want, whenever you want it
Often eat whatever you want, whenever you want it
Often limit food intake, but often “give in”
Usually limit food intake, rarely “give in”
Constantly limiting food intake, never “giving in”

51. To what extent does this statement describe your eating behavior? “I start dieting in the morning, but because of any number of things that happen during the day, by evening I have given up and eat what I want, promising myself to start dieting again tomorrow.”

1  2  3  4
Not like me  Little like me  Pretty good description of me  Describes me perfectly
Eating Disorder Examination Questionnaire (EDE-Q)

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

Questions 1-12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

<table>
<thead>
<tr>
<th>On how many of the past days...</th>
<th>No days</th>
<th>1-5 days</th>
<th>6-12 days</th>
<th>13-15 days</th>
<th>16-22 days</th>
<th>23-27 days</th>
<th>Every-day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. Have you gone long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. Have you had a definite desire to have a totally flat stomach?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>On how many of the past days…</td>
<td>No days</td>
<td>1-5 days</td>
<td>6-12 days</td>
<td>13-15 days</td>
<td>16-22 days</td>
<td>23-27 days</td>
<td>Everyday</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------</td>
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<td>-----------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>7. Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. Have you had a definite fear of losing control over eating?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. Have you had a definite fear that you might gain weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. Have you felt fat?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. Have you had a strong desire to lose weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Questions 13-18: Please fill in the appropriate number in the blanks on the right. Remember that the questions only refer to the past four weeks (28 days only).

Over the past four weeks (28 days)…

12. Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?

13. ...on how many of these times did you have a sense of having lost control of your eating (at the time that you were eating)?

14. Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?

15. Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?

16. Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?

17. Over the past 28 days, how many times have you exercised in a “driven” or “compulsive” way as a means of controlling your weight, shape or amount of fat, or to burn off calories?
Questions 19-21: Please circle the appropriate number. Please note that for these questions the term “binge eating” means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)?...Do not include episodes of binge eating.</td>
<td>No days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>19.</td>
<td>On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight?...Do not include episodes of binge eating.</td>
<td>None of the time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>20.</td>
<td>Over the past 28 days, how concerned have you been about other people seeing you eat?...Do not include episodes of binge eating.</td>
<td>Not at all</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Questions 22-28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.</td>
<td>Has your weight influenced how you think about (judge) yourself as a person?</td>
<td>Not at all</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>23.</td>
<td>Has your shape influenced how you think about (judge) yourself as a person?</td>
<td>0</td>
</tr>
<tr>
<td>24.</td>
<td>How much would it have upset you if you had been asked to weigh yourself once a week (no more/less often) for the next four weeks?</td>
<td>0</td>
</tr>
<tr>
<td>25.</td>
<td>How dissatisfied have you been with your weight?</td>
<td>0</td>
</tr>
<tr>
<td>26.</td>
<td>How dissatisfied have you been with your shape?</td>
<td>0</td>
</tr>
</tbody>
</table>
Over the past 28 days...

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Markedly</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing, or taking a bath or shower)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28. How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

29. What is your weight (in pounds) at present? (Please give your best estimate.)

______

30. What is your height? (Please give your best estimate.)

______

31. If female: Over the past three-to-four months, have you missed any menstrual periods?
   YES    NO
   If so, how many?  __________

32. Have you been taking the “pill”?  YES    NO

****END OF QUESTIONNAIRE. THANK YOU!****